

PRE-SERVICE PRIMARY TEACHERS' PERCEPTIONS AND KNOWLEDGE  
OF DYSLEXIA AND BASIC LANGUAGE CONCEPTS

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Doctor of Education

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by

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This dissertation follows the format and style of the *Publication Manual of the American Psychological Association, Sixth Edition* except where superseded by directions from the Director of the Doctor of Education in Executive Educational Leadership Program at Houston Baptist University.

## Abstract

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Approximately 20% of students in the general education classroom have difficulty learning to read. Thus, elementary school teachers will encounter children with diagnosed or undiagnosed dyslexia in their general education classroom. Students with dyslexia may have trouble in the areas of reading, spelling, writing, and other language processing areas. Previous research suggests that early intervention with a systematic and explicit approach to learning is key to the academic success of children struggling with learning to read. For effective early intervention, it is imperative for elementary school teachers to understand what dyslexia is as well as have a working knowledge of concepts in the areas of phonology and phonemic awareness, phonics, fluency, comprehension, and morphology. The purpose of this qualitative research was to examine the perceptions and knowledge of dyslexia and basic language concepts of pre-service primary teachers. Thirty-seven pre-service primary teachers were surveyed to assess their level of knowledge in basic language concepts. A focus group of five pre-service primary teachers was formed to learn about their perceptions of dyslexia and if they felt prepared to work with students with dyslexia. Surveys indicated that pre-service primary teachers felt confident in their working knowledge of basic language concepts, however, their application of that knowledge was not as high with areas of morphology and syllable-type awareness being low. Pre-service primary teachers admitted they did not feel ready to work with students with dyslexia but acknowledged they will have students with

dyslexia in their classrooms. While research continues to progress, continued adjustments to pre-service primary teachers' education regarding dyslexia and how to address it in the classroom may improve early intervention and student learning in the primary years.

Implications and thoughts for future studies are addressed.

*Keywords:* Basic Language Concepts, Dyslexia, Pre-service Teachers, Teacher Beliefs, Teacher Knowledge, Teacher Perceptions

APPROVED:

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Chair, Dissertation Committee

## **Dedication**

My family's support has been invaluable during my pursuit of a doctorate degree. Without their love and support, I would not have finished. Thank you to my husband, Dan, the love of my life, for listening to me when I got discouraged and always helping me find my way back to the computer. He understood my need for uninterrupted hours when researching and respected my need for solitude while writing. His humor and love kept me focused and helped guide me through every step. When we had to unexpectedly leave our home for several weeks, he trudged through waist deep water to get my research so I could keep working.

I am so very proud of our children, Anthony and Amy, who are currently both working on their undergraduate degrees. As they watch my educational aspirations come to fruition, my hope is that they are realizing their own endeavors are unlimited, regardless of age or any obstacles they may encounter. I hope I showed them it is never too late to follow your dreams, whether they be personal, professional, or academic.

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I deeply appreciate each of you. Your levels of knowledge are unmatched, and I am thankful to all of you for sharing that knowledge with me. You have been excellent examples of professional commitment to my growth as a leader and as a person. What could have been an overwhelming task was made manageable because of each of you.

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*I can do all things through Christ, who strengthens me (Philippines 4:13).* There were many late nights I know God was guiding my fingers on the keyboard or keeping my eyes open and my brain comprehending while reading articles and publications. It is with His strength that this dissertation is complete.

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## CHAPTER I

In 2008, Houston Baptist University adopted Ten Pillars as part of their vision for the continued growth of the University. The Tenth Pillar addresses advancing the educational opportunities available from Houston Baptist University by offering more graduate level programs (Houston Baptist University, 2018). I am proud to be a member of the first Cohort in the Doctor of Education in Executive Educational Leadership degree at Houston Baptist University. My research is in fulfillment of Pillar Ten.

According to Leithwood, Louis, Anderson and Wahlstrom, one of the basics of good leadership is the ability to develop people to their fullest potential. The authors state that school leadership has a direct link to teacher development which has a direct link to student success (2004). Thus, student success begins with school leadership. The current study contributes to the need for teacher development and their knowledge of dyslexia and basic language concepts.

There is a plethora of research regarding the importance of early intervention for students who struggle with learning to read (Anthony, Williams, McDonald, Francis, 2007; Bos, Mather, Dickson, Podjanski, Chard, 2001; Ferrer, Shaywitz, Holahan, Marchione, Michaels, Shaywitz, 2015; Foorman, Chen, Carlson, Moats, Francis, Fletcher, 2003; Foster & Miller, 2007; Mathes & Torgesen, 1998; Moats, 1999; Muter, Hulme, Snowling, Stevenson, 2004; National Reading Panel, 2000; Park, Chaparro, Preciado, Cummings, 2015; Shaywitz, 2003). Unfortunately, schools traditionally do not test students for reading disabilities until they are in the third grade; however, waiting this long can make remediation more difficult for the struggling student (Shaywitz, 2003). Remediation in younger children is best because the brain has a greater potential for

change. The earlier the intervention, the more likely remediation can occur, (Shaywitz, 2003). Moats (1999) explained the value of a teacher who has the specific knowledge necessary for recognizing the signs of reading difficulties in a student's primary years in school. The National Reading Panel was assembled in 1999 by Congress to address the issue of learning to read and teaching reading. Their findings (2000) discussed the need for early intervention.

Researchers also agree that students who are identified and given effective, explicit and systematic phonics instruction at an early age are less likely to experience reading difficulties (Binks-Cantrell, Washburn, Joshi, & Hougen, 2012b; Denton & Mathes, 2003; Moats, 1999). An improved effort needs to be made by educators to identify and remediate students with reading difficulties before their disability affects their academic and personal esteem (Mather, 2016). Teachers need to have a working knowledge of how to teach reading, which includes an understanding of the way the English language is constructed, or basic language concepts (Binks-Cantrell, Washburn, Joshi, & Hougen, 2012b; Mather, 2016; Moats, 1999; Podhajski, Mather, Nathan, & Sammons, 2009).

Since the importance of early intervention has been identified, current research explored pre-service primary teachers' perceptions and knowledge regarding dyslexia and basic language concepts. These components are necessary when providing effective instruction to students who are struggling to catch on to reading and could be diagnosed with dyslexia (Moats, 1999; Podhajski, Mather, Nathan, & Sammons, 2009; Shaywitz, 2003). The current research was a replication of Washburn, Joshi, and Binks Cantrell's 2011(b) study that examined the current pre-service teacher's knowledge of dyslexia and

basic language concepts based on the Texas Education Agency's *The Dyslexia Handbook*, (2014), and Texas Examinations of Education Standards (TEExES). The TEExES were revised in 2014 to include the assessment of knowledge regarding dyslexia and other reading disabilities.

### **Background of the Study**

Reading is not an innate skill. It is a misnomer that being able to read is natural and instinctual (Shaywitz, 2003; Wolf, 2007). Moats' 1999 position paper stated that one must be an expert to teach reading. Moats estimates that approximately 20% of elementary-aged students struggle with learning to read. Moats recommends that teachers be familiar with the following: development and reading psychology, structure of the language, how to apply best practices of teaching reading, and utilizing reliable and valid assessments on which to base instruction (1999).

In 2003, Shaywitz discussed the importance of recognizing signs of a reading disability in the primary years, stating it is key to early intervention. Teachers who know what to look for, such as phonemic awareness and phonological awareness, including rhyming, letter recognition, letter sounds, phoneme manipulation, and instant word recognition are essential to early identification and intervention (2003). Research suggests that teaching reading to a struggling student in their primary years should be explicit, direct, and systematic. The teacher needs to have a knowledge of phonemic and phonological awareness, an understanding of morphology and orthography, and know how to incorporate these areas into the reading curriculum if it is not already part of the scope and sequence (Mather, 2016; Moats, 1999).

Previous studies have addressed similar topics, such as a teachers' ability to teach (Cunningham, Perry, Stanovich, & Stanovich, 2004; Moats, 1999), the level of knowledge teachers have or need to effectively teach students with dyslexia (Bos, Mather, Dickson, Podhajski, & Chard, 2001; Spear-Swerling & Brucker, 2003; Washburn, Joshi, Binks-Cantrell, 2011a), and pre-service teacher's level of preparation (Joshi, Binks, Graham, Ocker-Dean, Smith, & Boulware-Gooden, 2009a). This research addressed pre-service primary teachers' perceptions and knowledge of dyslexia and basic language concepts.

### **Statement of the Problem**

The National Assessment of Educational Progress (2015) estimates that about 38% of fourth grade students have reading skills that are considered to be below average. Approximately 20% of students in elementary schools throughout the United States struggle with learning how to read. Of those poor readers, between 70% and 80% have a high likelihood of being dyslexic (Dyslexia Center of Utah, 2017; Joshi, 2009b). The traits of dyslexia can be diminished with the correct type of instruction at an early age (National Reading Panel, 2000; Shaywitz, 2003). An understanding of phonics or the alphabetic principle, such as letters and sounds, changing sounds around to form other words, and other basic language concepts at an early age are necessary to achieve fluent reading (Ehri, 2005; National Reading Panel, 2000; Park, Chaparro, Preciado & Cummings, 2015; Shaywitz, 2003).

Unless students have been identified with dyslexia, they will remain in the general education classroom for instruction (Voltz, Sims, & Nelson, 2010). Many teachers may have limited knowledge about how to address the specific needs of these students (Bos,

Mather, Dickson, Podjanski, & Chard, 2001; Bos, Mather, Friedman Narr, & Babur, 1999; Moats, 1999). A teacher's knowledge regarding dyslexia and best practices for teaching students with dyslexia how to read is a necessary component for the success of these students (Ness & Southall, 2010).

Since early intervention is key to addressing the needs of students with dyslexia (Moats, 1999; Shaywitz, 2003), new teachers should be aware of the challenges these students face, recognize the signs students with dyslexia will exhibit, and know how to address these students' academic needs. Teachers typically have little knowledge of basic language concepts, which is necessary to effectively teach students with dyslexia how to read (Washburn, Joshi, & Binks, 2011a). The student-teaching aspect of teacher preparation can be an essential part of attaining this knowledge. Without the opportunity to experience first-hand the day-to-day teacher-student interaction, pre-service teachers would not have the benefit of applying their learning. This is important because the reality of a classroom cannot be simulated in the college instructional setting (Brannon & Fiene, 2013).

### **Statement of the Purpose and Significance**

The purpose of this phenomenological study was to examine the perceptions and knowledge of dyslexia and basic language concepts of pre-service primary teachers in an accredited teacher preparation program at a university in Texas. In the state of Texas, dyslexia is defined as "... difficulty in learning to read, write, or spell, despite conventional instruction, adequate intelligence, and sociocultural opportunity" (TEA, 2014).

Teachers do not always feel adequately prepared to teach students how to read (Narkon & Black, 2008; Washburn, Joshi, & Cantrell, 2011b). Understanding and being able to identify students who may be dyslexic and how to best help these students should begin at an early age (Denton & Mathes, 2003; Washburn et al., 2011b). Since early intervention has shown to be most effective, teacher knowledge is key to student success (Binks-Cantrell, Joshi, Washburn, 2012a; Mather, 2016; Shaywitz, 2003).

Being able to identify students who show signs of dyslexia early in the student's academic career will give the student a better chance of overcoming their reading deficit (Park, Chaparro, Preciado, Cummings, 2015). Juel's longitudinal study in 1988 showed that 88% of students who were poor readers in the first grade would still be poor readers in the fourth grade. Another longitudinal study conducted by Shaywitz, Fletcher, Holahan, Schneider, Marchione, Stuebing, Francis, Pugh, and Shaywitz in 1999 expounded on this, stating that students who experienced reading issues in primary and elementary school continued to have reading issues into high school. Since developmental reading growth can be determined as early as kindergarten or first grade, the level of knowledge of teachers' ability to provide effective instruction should begin as early as kindergarten or first grade as well (Peart, 2015).

There is also evidence to support the idea that students who show signs of dyslexia at an early age will most likely not reach the level of reading ability as that of their peers unless correct early intervention is provided. Stanovich (1986) refers to this phenomenon as an achievement gap, explaining that those who are academically behind their peers will continue to perform behind their peers, never closing the achievement gap, and in some cases, falling even farther behind. By introducing phonological-based

instruction and basic language concepts as early as possible, these students will have the chance to be on the same learning trajectory as their average reading-ability peers (Ferrer, Shaywitz, Holahan, Marchione, Michaels, Shaywitz, 2015; Peart, 2015).

Reed and Vaugh (2012) found that as students continue through their education, other academic and social areas are affected because of their poor reading skills. As students' progress academically, the need for fluent reading increases as the need for content area reading and comprehension increases. Moving from learning to read to reading to learn (Chall, 1983), students with dyslexia will have difficulty reading and comprehending content-area texts, such as in science, social studies, and math (National Center to Improve the Tools of Educators, 2012). Although these students may have talents in these academic areas, their inability to read fluently could hinder their performance (Reed & Vaughn, 2012). Social interactions and friendships can also be affected. A lack of ability to read fluently can be attributed to low self-esteem, avoidance, stress, and depression (Alexander-Passe, 2006). If students are made to feel inferior or less intelligent by their teacher, their peers, or their families, their self-worth will diminish (Glazzard, 2010).

Pyle and Wexler (2011) found that long-term ramifications of a lack of early intervention include an increased dropout rate among students with dyslexia. Approximately 40% of students diagnosed with learning disabilities including dyslexia will not graduate from high school. Because of this, their future educational outlook and employment opportunities are diminished. This will create a constant uphill battle for achieving a self-sufficient life (Pyle & Wexler, 2011). Learned (2016) followed eight ninth graders who were in remedial reading classes. After one year, only four of the eight

were still in school. Learned did a case study on one of the students and found that the student felt the teachers had already given up on her. She did not see the point in continuing in school when she was not getting the help she knew she needed or the support in classes where she felt she could succeed (Learned, 2016).

In 2011, Washburn, Joshi, and Binks Cantrell published a study titled *Are Preservice Teachers Prepared to Teach Struggling Readers?* The purpose of their study was to examine the knowledge and skills of pre-service teachers regarding dyslexia and basic language constructs. Their study surmised that teacher preparation programs may not adequately prepare teachers in the area of basic language constructs or how they relate to a struggling reader or a student with dyslexia. The Texas Education Agency (TEA) released a revised Dyslexia Handbook in 2014. This handbook states that Texas teachers should know the following about dyslexia: recognize the characteristics of dyslexia; understand procedures for assessing students for dyslexia; identify students who may have or be at risk for having dyslexia; provide instruction to students with dyslexia (TEA, 2014). Also, in 2014, a new Texas Examinations of Educator Standards (TExES) Program manual was released. It includes test questions in the areas of oral language development, phonological and phonemic awareness, and the alphabetic principle. According to Uhry, these are necessary component of learning to read (2007). Teachers must pass the state examination to become certified teachers in Texas. This examination includes questions regarding dyslexia and teaching students who have dyslexia or are struggling to learn to read (TEA, 2014). The current research was a replication of Washburn, Joshi, and Binks Cantrell's 2011 study and examined the current pre-service teacher's knowledge of dyslexia and basic language concepts based on these new TEA

and TExES standards published in 2014. The significance of the current study was to see if the gap in teacher knowledge is closing with the implementation of these new standards.

There are two ways for students to qualify for dyslexia in Texas: Section 504 of the Rehabilitation Act of 1973 (Section 504) or Special Education (TEA, 2014). Section 504 is defined as an impairment in which a "disorder that "substantially" reduces or lessens a student's ability to access learning in the educational setting because of a learning-, behavior- or health-related condition" (TEA, 2014). Texas state law created a provision specific for dyslexia under Section 504. Special education falls under the federally mandated Individuals with Disabilities Education Act, or IDEA, of 2004 (TEA, 2014). Although students can qualify for services for dyslexia under IDEA, most teachers will recommend dyslexia services for students they feel should be assessed through Section 504 (TEA, 2014).

The current study was an exploratory research design, using qualitative data. Pre-service teachers were given a questionnaire and a focus group was convened. Information gleaned from the questionnaire and focus group was compiled, and generalizations were made based on the data received.

### **Research Questions**

To guide the current study, the following research questions were posed:

1. What are pre-service primary teachers' perceptions regarding dyslexia?
2. What are pre-service primary teachers' knowledge of basic language concepts?
3. What are pre-service primary teachers' perceptions regarding their preparation to teach students with dyslexia?

## Definition of Terms

### Alphabetic principle

This is the idea that letters represent sounds, which is also referred to as sound-symbol awareness (Uhry, 2007).

### Basic language concepts

These are the areas of phonological awareness, phonemic awareness, phonics, and morphology, as defined in this section. Basic language concepts can also be referred to as basic language constructs or structure of the English language.

### Dyslexia

According to the Texas Education Agency, dyslexia is defined as "...difficulty in learning to read, write, or spell, despite conventional instruction, adequate intelligence, or sociocultural opportunity" (2014). For the purpose of the current study, the term *dyslexia* will follow this definition.

### Field-based experiences

This refers to a pre-service teachers' time spent in a classroom setting with a certified teacher at a public or private school. It will also include either observation or direct experience with students or teachers.

### Morphology

Morph means to change. Morphology refers to the smallest unit of meaning in a word to understand the structure of a word (Soifer, 2007). Morphology includes understanding affixes, which change the meaning of the word, and word structure. For example, the word jumping has two units of meaning: the base word *jump* and the suffix *-ing* which means happening right now.

**Phoneme**

A phoneme is defined as individual sounds in words (Uhry, 2007). For example, the word rug has three phonemes: /r/ /u/ /g/.

**Phonemic awareness**

Having an ability to hear, isolate, and manipulate the individual phonemes in words is having phonemic awareness (Uhry, 2007). The National Reading Panel (2000) established phonemic awareness as a necessary component of an effective reading program.

**Phonological awareness**

An umbrella term, phonological awareness includes all aspects of phonemic awareness that are necessary for reading. Although there is a slight difference between the two, phonological awareness and phonemic awareness are sometimes used interchangeably (Uhry, 2007).

**Poor reader**

This term is used interchangeably with *struggling reader*.

**Pre-service teacher**

For the current study, a pre-service teacher will be defined as an undergraduate student who is enrolled in a teacher preparation program at an accredited university.

**Primary grades**

Kindergarten, first, second, or third grade are considered to be the primary grade levels in this study.

**Struggling reader**

For the current study, a struggling reader is one who is having difficulty learning to read. The researcher refers to struggling readers, however, other researchers may refer to struggling readers as poor readers. When other authors used the term poor readers, that term was used when referring to their research.

**Theoretical Framework**

The National Early Literacy Panel's 2008 report estimates that over one-third of fourth grade students do not have adequate reading ability to successfully complete a fourth-grade level curriculum. They found that although there may have been many factors that could have hindered reading success, the commonality was lack of early intervention in the previous academic years in areas of emergent literacy skills (National Early Literacy Panel, 2008).

The National Reading Panel (2000) recommended that teachers have explicit knowledge of the basic language concepts of phonology and phonemic awareness, phonics, and morphology since their findings indicated these as concepts necessary for reading acquisition. As well, a teacher must be able to apply that knowledge when teaching students to read. Scientifically-based research in reading instruction shows the importance of direct and explicit teaching of basic language concepts to both beginning and struggling readers (Moats, 1994). Research regarding struggling readers continually indicates that “early systematic instruction in phonological awareness and phonics improves early reading and spelling skills and results in a reduction of the number of students who read below grade level” (Bos, Mather, Dickson, Podhajski, & Chard, 2001, pp. 97-98).

Sally Shaywitz was a member of the National Reading Panel and is a pediatric neurologist at Yale University School of Medicine. Her interests lie in children's learning and attention. Dr. Shaywitz is considered a leading researcher in how the brain works regarding these areas. Her research provides the framework for understanding dyslexia (Ratner, 2014). In her 2003 book, *Overcoming Dyslexia*, Shaywitz clearly discusses what characteristics or traits a student with dyslexia may exhibit and how students should be evaluated for dyslexia.

Shaywitz states, "Linking letters to sounds and then sounding out the words is the only guarantee of being able to decode the thousands of new words." (p. 102-103). Difficulty in this area is a common trait for a student with dyslexia. To be an effective reader, one must pay attention to all the letters in words and associate those letters with the sounds they make to be able to read the word. Shaywitz stated that students who show an understanding of this sound-symbol relationship at an early age typically go on to be good readers. Those who do not, however, are typically poor readers who will continue to have an achievement gap in their learning (Shaywitz, 2003).

Continuing, Shaywitz states that early and explicit intervention is the key to helping students with dyslexia learn to read (Shaywitz, 2003). Curriculum or early intervention programs should include a systematic and direct approach to phonemic awareness, phonics, vocabulary, comprehension strategies, and reading fluency. Curriculum or programs should also include adequate practice in these areas and "enriched language experiences" (p. 262) that would include listening, talking, and retelling stories. There are many scientifically-based programs available that include all of these aspects of teaching reading and are beneficial for all students (Shaywitz, 2003).

In 1998, Spinelli indicated the need for pre-service teachers to be better prepared for the classroom. Spinelli argued that before teachers can begin to teach the vast needs of the students in today's inclusive classrooms, their instructional skills should be more in line with those of the students' needs. Spinelli stated (1998), "to be adequately prepared for this diverse population of students, pre-service teachers need to be familiar with a variety of teaching strategies and alternate assessment measures required to provide all students with the curricular and program modifications they need" (p. 6).

Moats and Lyon (1996) state that teachers who work with students with dyslexia should be competent in teaching language, which include speech sounds, matching letters and sounds, patterns of spelling, syntax, semantics, and writing. They argue that to become a certified teacher, one must be able to show knowledge of morphology, phonological and phonemic awareness and how to impart this knowledge to their students. Moats and Lyon also stress the importance of multi-sensory learning. It is their position that these areas be covered more fully in teacher preparation programs (Moats & Lyons, 1996).

These studies served as a framework for the necessity of teacher's knowledge regarding basic language concepts, teacher's knowledge of dyslexia and the need for early identification and intervention, and pre-service teacher preparation for working with students with dyslexia in the general education classroom. The literature review expands on these areas.

### **Limitations**

Limitations in research are matters and occurrences that are in the study but are out of the researcher's control (Lunenburg & Irby, 2008). The limitations of the current study included the following:

1) Pre-service teachers may have little background knowledge and experiences in recognizing characteristic of students who may have dyslexia.

2) Not all pre-service primary teachers have had student teaching experiences that included a classroom with dyslexia specialists or a mentor teacher who is more versed in basic language concepts and how to address the needs of students with dyslexia.

3) The researcher may not know when or how the participants sequenced the required classes that include the necessary background for taking the survey and participating in the focus group.

4) Pre-service teachers may have attended classes or workshops where they gained knowledge regarding basic language concepts and effective teaching instruction for students with dyslexia.

5) Since questionnaires will be confidential and a focus group will be convened separate from questionnaires, the information gathered from the questionnaire and focus group will be self-reported answers and opinions. The honesty of answers received cannot be confirmed.

### **Delimitations**

Delimitations of a study are those characteristics which fall in the scope or boundaries of the study as defined by the researcher using intentional exclusion and

inclusion factors made during the development of the study (Lunenburg & Irby, 2008).

Delimitations of the current study included the following:

1) Only pre-service teachers who were enrolled in an accredited teacher preparation program will be participating in both the survey and the focus group.

2) Participants were those who are seeking certification through Texas Education Association to teach primary grades and have had pre-education requirement courses, which include passing a module regarding dyslexia.

### **Assumptions**

Assumptions are premises that are generally accepted as part of the research (Lunenburg & Irby, 2008). Assumptions for this research include the following:

1) It is assumed the information gathered was accurate to the best of the pre-service teachers' knowledge and ability.

2) Those who participate in the focus group spoke freely about their knowledge of dyslexia and related questions.

### **Organization of the Study**

The current study is organized in five chapters. Sections in chapter one includes the introduction, background, statement of the problem, purpose and significance, research questions, definition of terms, theoretical framework, limitations, delimitations, and assumptions. Chapter two includes a review of current literature supporting the current study. Chapter three includes the purpose, research design, context and setting, participants, instrumentation, data collection, research bias, data analysis. Chapter four has an introduction, research question one and a summary of the findings, research question two and a summary of the findings, and research question three and a summary

of the findings. Chapter five consists of a discussion of the current study, relationship of the findings to current literature, implications of the current study, recommendations for future study, and a conclusion.

## CHAPTER II

### REVIEW OF LITERATURE

#### Purpose

The purpose of this phenomenological study was to examine the perceptions and knowledge of dyslexia and basic language concepts of pre-service primary teachers. Being able to identify students who show signs of dyslexia early in the student's academic career will give the student a better chance of overcoming their reading deficit (Park, Chaparro, Preciado, Cummings, 2015). Juel's longitudinal study in 1988 showed that 88% of students who were poor readers in the first grade would still be poor readers in the fourth grade. Another longitudinal study conducted by Shaywitz, Fletcher, Holahan, Schneider, Marchione, Stuebing, Francis, Pugh, and Shaywitz in 1999 expounded on this, stating that students who experienced reading issues in primary and elementary school continued to have reading issues into high school. Since developmental reading growth can be determined as early as kindergarten or first grade, the level of knowledge of teachers' ability to provide effective instruction should begin as early as kindergarten or first grade as well (Peart, 2015).

In 2011(b), Washburn, Joshi, and Binks Cantrell published a study titled *Are Preservice Teachers Prepared to Teach Struggling Readers?* The purpose of their study was to examine the knowledge and skills of pre-service teachers regarding dyslexia and basic language constructs. Their study surmised that teacher preparation programs may not adequately prepare teachers in the area of basic language constructs or how they relate to a struggling reader or a student with dyslexia. The Texas Education Agency (TEA) released a revised Dyslexia Handbook in 2014. This handbook states that Texas

teachers should know the following about dyslexia: recognize the characteristics of dyslexia; understand procedures for assessing students for dyslexia; identify students who may have or be at risk for having dyslexia; provide instruction to students with dyslexia (TEA, 2014). Also, in 2014, a new Texas Examinations of Educator Standards (TExES) Program manual was released. It includes test questions in the areas of oral language development, phonological and phonemic awareness, and the alphabetic principle. According to Uhry, these are necessary component of learning to read (2007). Teachers must pass the state examination to become certified teachers in Texas. This examination includes questions regarding dyslexia and teaching students who have dyslexia or are struggling to learn to read (TEA, 2014). The current research was a replication of Washburn, Joshi, and Binks Cantrell's 2011 study and examined the current pre-service teacher's knowledge of dyslexia and basic language concepts based on these new TEA and TExES standards published in 2014. The significance of the current study was to see if the gap in teacher knowledge is closing with the implementation of these new standards.

### **Government Mandates**

Texas was the first state to acknowledge dyslexia as a learning disability and in 1985, passed legislation giving attention to addressing it in schools. Guidelines for screening and addressing the needs of students with dyslexia were written. Since then, 22 other states have also addressed the need for laws regarding dyslexia (Youman & Mather, 2013). Youman and Mather also looked at various intervention programs as listed in state guidelines and handbooks, as well as teacher training. Texas is among the more

progressive states in addressing the needs of students with dyslexia (Youman & Mather, 2013).

Several federal and state government mandates have been enacted with the hope of achieving literacy in all children in the United States.

### **Reading Excellence Act**

In 1999, the Reading Excellence Act, or Read for Texas as it is known in Texas, was passed as a way to address the needs of lower performing schools and districts. By using research-based instruction, the goal of improving student reading achievement and the way teachers taught reading in the kindergarten through third grade classrooms would be subsidized through federal grants. There were several goals in mind when passing this Act. Foremost, each child should be able to read by the end of third grade. This would be accomplished by ensuring that students would be taught skills and given support necessary to learn to read. Literacy programs for families would increase as a way of bringing literacy into the home to benefit everyone at an earlier age. It would also address the needs of students who were at risk of being referred to special education because they could not read by providing early intervention. Daily instruction would be guided by research-based curriculum and materials (National Right To Read Foundation, 1998; Reading Excellence Act, 2000).

Another goal was directed at teachers. It was to ensure that primary-level teachers would have a better understanding of how to teach reading. This was an effort to address the needs of all students at an early age instead of addressing the needs of students who do not know how to read at a later date. The way teachers went about teaching students to

read involved following specific guidelines which meant expanding teacher knowledge (National Right to Read Foundation, 1998; Reading Excellence Act, 2000).

Grant funds were available to schools who adhered to specifically defined terms of reading. For a child to be considered fluent in reading, they must be able to decode words with which they are not familiar, understand the basic skills of the English language, have a working background knowledge and vocabulary to enhance comprehension. As well, teachers needed to have a way to continue to motivate students to keep reading (National Right to Read Foundation, 1998; Reading Excellence Act, 2000).

### **National Reading Panel**

The next attempt to ensure that all students could read was Congress's 1997 empanelment of 14 researchers, scientists, and experts from the field of education. They were asked to study how reading should best be taught so that all students would be successful. This group, the National Reading Panel, was charged with examining four specific points: determine how children learn to read based on over 100,000 current research reports; based on the findings from the first point, provide a statement indicating "effective evidence-based methods" that teachers could use to teach reading; indicate which effective methods of teaching reading are currently available for use in the classroom and how to ensure the schools have this knowledge; and devise a plan for future reading research to develop instruction (National Reading Panel, 2000).

In 2000, the National Reading Panel published their findings. They found that including teaching in the following areas would be beneficial to all children: phonemic awareness, phonics, fluency, vocabulary, and comprehension. First, teach using explicit,

direct instruction in phonemic awareness. This would include breaking words into sounds, moving sounds around to create new words, changing sounds to create rhyming words, and reading aloud to children, especially rhyming books (National Reading Panel, 2000).

Phonics was found to be a necessary component in learning how to read. Phonics is a way of teaching that letters represent sounds, which can be blended into words. Students who understand the sounds letters make can begin to blend those sounds in unknown words to be able to read the unknown word. This is a different approach from whole language, which is a form of looking at a word and memorizing it. Using phonics, students can sound out words on their own (National Reading Panel, 2000).

Being able to read fluently is a key to being a successful reader. Reading fluency means being able to read accurately and smoothly with appropriate speed and expression. To achieve reading fluency, students need to practice reading words they know or can sound out. With this type of practice, the process of reading becomes more automatic (National Reading Panel, 2000).

Having an expanded vocabulary is another key to being a more-abled reader. Introducing word meanings in isolation or through reading text will help to bolster a student's vocabulary. Encouraging students to use new vocabulary will allow the student to more fully embrace the word (National Reading Panel, 2000).

A developed vocabulary not only helps with reading fluency, but also with reading comprehension, which was the National Reading Panel's last recommendation for effective reading instruction. Directly teaching reading comprehension strategies such as

summarizing and sequencing helps to develop a deeper understanding of the text (National Reading Panel, 2000).

### **No Child Left Behind Act**

No Child Left Behind Act (NCLB) was a result of the findings from the National Reading Panel. Signed in 2002, it was used as a way to hold schools responsible for their students' academic performance. The idea incorporated all students at all levels, including English language learners, minorities, underprivileged students, and anyone who was academically falling behind their peers. To ensure that all students were benefitting from classroom instruction, schools were held accountable through testing. States were required to bring all students to pre-determined benchmarks in reading, as well as other academic areas, measured through "adequate yearly progress" (Klein, 2015a).

Schools were required to hire "highly qualified teachers" in reading and math. This was to ensure that teachers knew and understood how to teach students in these subjects. These highly qualified teachers were to be in all schools throughout the districts. This was one way of reaching the goal of NCLB, which was that every child would be reading on grade level by the 2013 – 2014 school year. However, it became clear that this goal would not be obtained by the deadline. In 2011, waivers were given to states as a way of getting around the mandates of the law. In the end, 42 states obtained these waivers (Klein, 2015a).

### **Every Student Succeeds Act**

No Child Left Behind was replaced by Every Student Succeeds Act (ESSA) in 2015, becoming completely into effect the 2017-2018 school year. This law still requires states to be accountable to the Department of Education but with caveats. States are able

to choose their own goals, with the belief that all groups of students who are the most at risk will continue to be addressed. This would be accomplished through a series of accountability systems. Testing will still be required; however, states can write their own laws regarding who may be exempt from testing and what happens if schools do not meet their desired goals (Klein, 2015b).

Another change with ESSA is regarding teachers. They will no longer have their performance evaluation tied to the testing results of their students as they did with NCLB. However, Title II, which is funding for teacher development, will be increased (Klein, 2015b).

### **Texas Literacy Initiative**

Initially enacted as a way to assist low income and disadvantaged groups of students in 2010, Striving Readers Comprehensive Literacy Program, or Texas Literacy Initiative as it is known in Texas, now includes all students. Its goal is to ensure that every child graduating from an accredited Texas school will be literacy-ready for college or their chosen career. Beginning in pre-school, children will be exposed to increased oral language and literacy-building activities to enhance their literacy skills. This, in turn, will better prepare them for kindergarten through second grade, where they will build on this foundation when learning to read. By including centers at the preschool level, "literacy lines" are created, allowing for a more aligned curriculum when children enter public or private schools (Texas Education Agency, n.d.; Vaughn-Gross-Center for Reading and Instruction, 2017).

This is accomplished through funding from the Department of Education's Striving Readers Comprehensive Literacy Program. Texas is only one of six states who

have been awarded grant funding for this type of program, which is a pilot program associated with ESSA (Texas Education Agency, n.d.; Vaughn-Gross-Center for Reading and Instruction, 2017). Texas Literacy Initiative has been reauthorized in 2017.

### **READ Act**

The Research Excellence and Advancement for Dyslexia Act, or READ Act, was passed into law by the Congress in February 2016. According to the READ Act, an estimate of 8.5 million children in American schools either have been diagnosed with or may have dyslexia (Civic Impulse, 2017). To help address the need for additional research in this arena, this Act requires the National Science Foundation to provide a minimum of \$5 million a year to dyslexia research. With this directive, research initiatives for dyslexia will continue to improve on ways to bring more effective instruction into the classroom for all students (Washburn, Mulchay, Joshi, Binks-Cantrell, 2016).

### **Texas House Bill 1886**

In February 2017, the Texas Legislature passed an amendment regarding dyslexia, students' assessment for dyslexia, and teacher education regarding dyslexia. It states that students in public schools in Texas must be screened for dyslexia and related reading disorders at the end of the students' kindergarten and first grade years. As well, the Texas Education Agency must compile a list of opportunities for teachers to receive training regarding recognizing dyslexia in the general education classroom and teach reading through a direct, explicit and systematic approach using evidence-based interventions. This is an effort to meet the needs of all children, including those with dyslexia, in the general education classroom (TEA, 2017).

## Dyslexia

The International Dyslexia Association (IDA) adopted a definition for dyslexia in 2002 as follows:

Dyslexia is 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. (IDA, 2016)

This definition provides for the fact that these students may show typical or above typical cognitive abilities in other academic areas such as math or science (IDA, 2016).

The Texas Education Association (TEA) defines dyslexia in two parts. The first part says "... a disorder of constitutional origin manifested by a difficulty in learning to read, write, or spell, despite conventional instruction, adequate intelligence, and sociocultural opportunity." Part two of TEA's definition discusses related disorders such as "developmental auditory imperceptions, dysphasia, specific developmental dyslexia, developmental dysgraphia, and developmental spelling disability." The state of Texas acknowledges that students identified with dyslexia may present as early as the primary academic years (TEA, 2014).

Dyslexia is a language-based learning disability, which means students may have difficulty with reading, spelling, and writing (Tanaka, Black, Hulme, Stanley, Kesler,

Whitefield-Gabrieli, Reiss, Gabrieli & Hoefft, 2011) which is known as a phonological deficit (Shaywitz, 2003; Vellutino, Fletcher, Snowling, & Scanlon, 2004). At its basic level, characteristics of a student with dyslexia may include having trouble reading words in isolation, decoding or reading words they have never encountered before, slow and inaccurate oral reading, and difficulty spelling (Moats, 1999; Shaywitz, 2003; TEA, 2014). It is important to note that these traits are present in students with typical learning achievement in other content areas and are not typical of what would be expected of their academic ability (Mather, 2016; Shaywitz, 2003).

Many areas of the brain are engaged when one reads, making dyslexia a neurologically-based reading issue as well (Fernandez, Juranek, Romanowska-Pawliczek, Stuebing, Williams, Fletcher, 2016; Glezer, Eden, Jiang, Luetje, Napoliello, Kim, Riesenhuber, 2016; Joseph, Noble, Eden, 2001; Pugh, Mencl, Jenner, Lee, Katz, Frost, Shaywitz, Shaywitz, 2001; Shaywitz, 2003; Simos, Razaie, Fletcher, Papanicolaou, 2013). Through the use of technologies such as functional Magnetic Resonance Imaging-rapid adaption (fMRI-RA) and Positron Emission Tomography (PET), researchers can watch the brain activity during the act of reading. From this research, it is widely accepted that reading uses three different brain systems: the dorsal temporo-parietal region which is in the back-left area, the ventral occipito-temporal region also located in the back-left area, and the anterior region in the front left (Fernandez et al., 2016; Pugh et al., 2001; Shaywitz, 2003).

In typical readers, the back and the left side of the brain are activated while reading. However, when a person with dyslexia reads, the active parts of their brain are the front and right side of the brain. This is known as a lateral shift from back to front and

from left to right. Through appropriate remediation and early intervention, a dyslexic brain can rewire itself, causing the left side of the brain to become more engaged in the process of reading. Because the brain is malleable, the effects of dyslexia can be lessened, however, dyslexia does not go away (Shaywitz, 2003).

Pugh et al. (2001) stated that in skilled readers, the dorsal temporo-parietal and the ventral occipito-temporal regions work together, allowing for fast and automatic word recognition. In students with dyslexia, these areas are not functioning properly. When this happens, areas in the right hemisphere of the brain are activated in a compensatory way. This lateral shift in brain hemisphere leads to the underdevelopment of the dorsal and ventral regions. This results in a slower functioning ability to engage the phonological area as well as other areas related to reading. Glezer et al. (2016) had similar findings, stating that reading uses the dorsal temporo-parietal region and the ventral occipito-temporal reading for phonologically-based and orthographically-based skills. When these areas are not engaged, reading becomes difficult and other parts of the brain try to compensate.

Fernandez et al. (2016) looked at the role of the brain's white matter, or cerebellum, in reading acquisition. Although they confirmed that both dorsal temporo-parietal and ventral occipito-temporal regions are areas of the brain responsible for reading and phonological skills, their study also suggests that the anterior region has a larger part in the act of reading than previously suggested. Fernandez et al. found that the anterior cerebellum region "appear to have a regulatory effect" on reading, and that further studies should be done in this area (p. 54).

Characteristics of dyslexia can vary from student to student (Mather, 2016). For example, although some students with dyslexia will write some letters or numbers backwards, not all students who are dyslexic will do this (Shaywitz, 2003). In the kindergarten or first grade, students who may be at risk for dyslexia may not be able to do some or all of these behaviors: identify syllables in words, break words into individual sounds or move sounds around in words, provide and/or identify rhyming words, match letters and sounds, read and/or spell individual words, or spell words like they sound (Moats, Carreker, Davis, Meisel, Spear-Swerling, Wilson, 2010; Shaywitz, 2003; TEA, 2014).

In the second grade, the same characteristics may continue to plague a student with dyslexia, however, with the increase in academic rigor, additional signs may be apparent: word substitution or guessing at words, reliance on pictures for clues to words, inability to instantly read basic sight words or phonetic words such as *the*, *said*, or *him*, and problems with writing sentences and sentence structure (Moats, Carreker, Davis, Meisel, Spear-Swerling, Wilson, 2010; Shaywitz, 2003; TEA, 2014).

Although dyslexia may appear different from student to student, there are some misnomers of what may be contributing factors to dyslexia. Poor vision or hearing are not associated with being dyslexic (TEA, 2014; Thorwarth, 2014). Not all students with dyslexia will write letters or numbers backwards (Shaywitz, 2003; TEA, 2014; Wadlington & Wadlington, 2005). Ability to comprehend text, stories, or verbal directions alone is not an indication of dyslexia (Shaywitz, 2003; TEA, 2014). Being diagnosed with dyslexia does not mean that the student has a lower cognitive ability.

Students with dyslexia can have average or above-average thinking and reasoning capabilities (Shaywitz, 2003; TEA, 2014; Thorwarth, 2014).

Those with dyslexia typically can be highly motivated and have strengths in other areas (Shaywitz, 2003; Thorwarth, 2014). Some may have gifts in the creative arts, such as music, drawing, painting, or sculpting. Others may have a greater ability to visualize or to be able to imagine what something could look like, much like an engineer or architect would be able to envision a schematic or a building (Thorwarth, 2014). Others may be good problem solvers and out-of-the-box thinkers. They can see the bigger picture and understand how smaller, more minute details may fit into the grand scheme (Shaywitz, 2003).

Moats et al. (2010) and Washburn, Joshi, and Binks-Cantrell (2011b) estimate that 15-20% of the population struggle with dyslexia. Some believe the actual number may be between 20-30% (Shaywitz, 2003). With this many students having the potential for dyslexia or with a diagnosis of dyslexia in the general education classroom, teachers need to have sufficient tools to address the needs of these students (Mather, 2016; Mathes & Torgesen, 1998). These tools include multisensory instruction, explicit and direct instruction, and a phonological awareness or phonics-based curriculum or component in the reading lesson (Snowling & Hulme, 2011), and a knowledge of basic language concepts (Moats et al., 2010; Washburn et al., 2011a). In order for this to happen, teachers must have some type of preparation to meet the academic needs of these students (Berry, 2010; Palmer, 2011).

Myths regarding what dyslexia is and is not are prevalent (Shaywitz, 2003). One of the most common misconceptions is that all dyslexic students will write some letters or

numbers backwards, confuse letters, or mix letters up when spelling (Hudson, High, & Al Otaiba, 2007). Although these traits may be an indication of dyslexia, they are not necessarily an accurate portrayal for all students (Ness & Southall, 2010). When first learning to read and write, children may reverse letters or numbers as a typical developmental stage (Adams, 1990). Most children will outgrow this, however, students with dyslexia may continue to reverse letters and numbers (Ness & Southall, 2010).

As with the developmental stages of writing, some believe that children will outgrow dyslexia (Shaywitz, 2003). This is a misnomer as there is no known cure, and symptoms of dyslexia will not go away with age (Ness & Southall, 2010). However, the effects of dyslexia can be lessened with proper intervention, and students can become fluent readers and writers (Shaywitz, 2013).

Dyslexia is language based and not visually based. The reading difficulty lies within the areas of linking letters with their sounds, rhyming, counting syllables or sounds in words, and word retrieval problems (Lyon, Shaywitz, & Shaywitz, 2003). It is not a visual problem as some believe (Badian, 2005). The term "word blindness" was coined by Hinshelwood in 1896 as a way to describe dyslexia. Hinshelwood saw dyslexia as a form of brain damage, resulting in an impairment for a visual memory for letters or words. Hinshelwood's cases were of typical intelligence and appeared to have full brain function in other aspects, however, patients simply could not read or make sense of the written language (Beaton, 2004).

Although there are two ways to qualify for dyslexia services in Texas, Special Education through IDEA and Section 504, the majority of students will receive services through Section 504. Either type of service is free, however, with Section 504, parents are

required to pay for outside testing. The differences between IDEA and Section 504 are explained in the Table 1.

Table 1

*Difference Between IEP and Section 504*

<u>Question</u>	<u>IEP</u>	<u>Section 504</u>
What is it?	Plan for entering into Special Education	Plan for students with dyslexia to receive accommodations and modification in their classroom
What is provided?	Individualized special education and special services; student leaves the general education classroom	Changes to the current learning environment; student stays in the general education classroom
What is the law?	Individuals with Disabilities Act of 1975	Rehabilitation Act of 1973
Who is eligible?	Students with dyslexia fall under the Specific Learning Disability category in the list of disabilities that qualify for special education services	Students who have a documented disability that interferes with their ability to learn in the general education classroom
Who is involved in the process?	Parents, classroom teacher, special education teacher, school psychologist, and district representative	Parents, teachers, administrators, and anyone else who is familiar with the student and the student's evaluation and testing

### **Importance of Early Intervention**

The most common reason for students not being successful in schools is because of poor reading ability (Moats, Carreker, Davis, Meisel, Spear-Swerling, Wilson, 2010). The National Assessment of Educational Progress finds that approximately 36% of all fourth-grade students read below grade level (2015). Additionally, between 15 and 20% of young students have weaknesses with language processing, which includes dyslexia

(Moats et al., 2010). Students who are poor readers in first and second grade will most likely remain poor readers throughout school without proper intervention (Blachman, 2000; Shaywitz, 2003; Snow, Burns, & Griffin, 1998). Gough & Juel (1991) state it is critical that "...children learn to decode in first grade. If decoding skill does not arrive then, it may be very hard to change the direction that reading achievement takes." (p. 55)

Another reason for early intervention and explicit and direct reading instruction at the primary grades is because the type of reading changes through a students' academic progression. Students are in a learn-to-read stage through the third grade. Beginning in fourth grade and beyond, they are using their reading skills to learn from the text they are reading (Chall, 1983). Students who are continuing to struggle in the learning-to-read phase in the fourth grade and beyond will be at a disadvantage than their able-reading peers (Snow, Burns, & Griffin, 1998). For students who have not yet reached this reading threshold, explicit and direct instruction is still necessary for them to become successful readers (Blachman, Schatschneider, Fletcher, Francis, Clonan, Shaywitz, & Shaywitz, 2004).

In 1998, Mathes and Torgesen discussed the need for early intervention and explicit, direct instruction to prevent students with dyslexia or those showing other at-risk characteristics from falling behind in learning to read. They state that "carefully designed instruction... and integrating phonological and alphabetic skills" (p. 335) into the reading curriculum is necessary for all at-risk students to become successful in reading. Mathes and Torgesen state this will help to prevent reading failure in students who receive this type of instruction in the kindergarten or first grade years (Mathes & Torgesen, 1998).

Phonological processing abilities were assessed on 389 pre-school children by Anthony, Williams, McDonald, and Francis (2007) with one purpose being to determine if phonological processing related to emergent literacy skills at different stages of literacy development. This was determined through assessments of phonological awareness, phonological memory, letter knowledge, and 2-, 3-, or 4-letter word reading. Anthony et al., found that phonological processing does indeed have a correlation to the child's emergent literacy skills. They confirm previous studies stating that early intervention can start as young as pre-school (Anthony, Williams, McDonald & Francis, 2007).

Another study with preschool-aged children was conducted by Muter, Hulme, Snowling, & Stevenson in 2004. They wanted to know if phoneme skills were a better indicator of reading success than word families or onset-rime patterns. They worked with 90 four- and five-year-old children in London. The United Kingdom uses a curriculum that follows a structured approach in the phonics component. The curriculum was followed daily for two years. Their conclusions suggest there is a direct correlation between phonological skills and word recognition skills. However, rhyming skills were much less a factor (Muter, Hulme, Snowling, & Stevenson, 2004).

Park, Chaparro, Preciado, and Cummings (2015) stated that to be a fluent reader, one must have a working knowledge of phonics and phonological awareness or the alphabetic principle citing these as necessary precursors to reading acquisition. Their study looked at the necessity for early intervention in obtaining these skills. Included in their study were 1,322 kindergarten through third grade students from 42 elementary schools. They looked at the student's ability to read nonsense words and their oral reading fluency. The findings indicate that in both areas of nonsense word reading and oral

reading, the earlier the student can be proficient in these areas, the greater likelihood they will perform better on reading tests later in their academic careers. The authors go on to state that the timing of the correct intervention and mastery of reading skills is best taught when it is developmentally appropriate which is in the primary years (Park et al., 2015).

Blachman, Schatschneider, Fletcher, Francis, Clonan, Shaywitz, and Shaywitz's 2004 study considered whether an intensive reading intervention in the second and third grades would make a difference in poor readers' level of reading ability. Both experimental and control groups of children were given a series of norm-referenced tests before the beginning of their second or third grade school year. The experimental group received daily instruction that included sound-symbol correspondence activities, phonological and phonemic awareness activities, speed drills including phonetically regular words and high frequency or sight words, practice in oral reading using books that were phonetically-controlled, non-phonetically-controlled, and expository-type books, and lastly, a dictation activity. Their findings indicate that those students who had systematic and explicit instruction in phonology and phonics had greater reading gains than that of the control group. They also found there to be "an accelerated growth trajectory for the treatment children compared with the control children" (p. 458). This supports that explicit and direct instruction in basic language concepts of phonics and phonemic awareness can lead to better reading instruction for poor readers. However, during their one-year follow-up with the students, the gap of reading abilities was no longer significant. They authors surmised this to be because both groups were now receiving the same standard curriculum (Blachman, Schatschneider, Fletcher, Francis, Clonan, Shaywitz, and Shaywitz, 2004).

In another study, Foorman, Chen, Carlson, Moats, Francis, and Fletcher looked at 4,872 kindergarten students in two cities which were receiving early reading intervention funds from a grant from the National Institute of Child Health and Human Development. One of their research questions was to see if a curriculum that included phonemic awareness in kindergarten would make a difference in kindergarten literacy skills and first grade reading and spelling ability. Along with "quality professional development" (p. 316) they found that explicit and direct instruction of a reading program that includes phonemic awareness and phonics was beneficial to all students (Foorman, Chen, Carlson, Moats, Francis, Fletcher, 2003).

Partanen and Siegel (2013) conducted a longitudinal study with 406 children beginning in their kindergarten year, following them through their seventh-grade year in school. Students were given the Wide Range Achievement Test (WRAT3) each year. In kindergarten, they identified 21.5% of the students to be considered at risk for reading difficulties and another 3.5% to be borderline. They implemented a district-wide reading program for all students that included phonological awareness and phonics-based instruction in kindergarten classrooms. In grades one through seven, *Read 44* program was used district-wide for all students. This program still included a phonological awareness piece, albeit smaller, and concentrated more heavily on decoding unknown words using morphology skills, self-monitoring and self-corrections, and various comprehension strategies (Partanen and Siegel, 2013).

After eight years, they found that the number of students who were identified as at risk for having reading difficulties in the seventh grade decreased from nearly 23% to only six percent. They also found that those who were identified as at risk in kindergarten

scored lower on the phonological awareness assessment than those who were not considered at risk. Thus, the phonological awareness and phonics-based instruction may have made the difference for these students. They also found that with all students in the program, student reading abilities did not decrease or falter as students progressed through their academic careers (Partanen & Siegel, 2013).

### **Basic Language Concepts**

When teachers have a knowledge of phonological processing, phonics skills, and other basic language skills, students will be more successful (Bos, Mather, Friedman-Narr, & Babur, 1999) if the teacher uses this knowledge in the classroom through explicit and direct instruction (Torgesen, 2000). Basic language concepts, or basic language constructs, refer to the structure of the English language (Binks-Cantrell, Joshi, Washburn, 2012a). Washburn, et al. (2011b) and the National Reading Panel (2000) identified basic language concepts as phonological awareness, phonemic awareness, phonics, and morphology, which are necessary for effective teaching of reading. They are defined and discussed below.

#### **Phonology or Phonological Awareness**

Phonological awareness is an umbrella term that includes phonology. Phonological awareness is an understanding of how words are structured. One must have phonological awareness to determine each sound in the word (Birsh, 2007). Phonological awareness is typically the earliest stage in learning to read, which includes producing rhyming words and discriminating between words that rhyme with those that do not. Breaking words into parts, such as syllabication, is also part of phonological awareness (Shaywitz, 2003). Phonology is the study of individual sounds in words and how they

come together to make words (Birsh, 2007). Phonological awareness has shown to be of particular importance in learning to read because of its strong indicators to early reading ability (Wackerle-Hollman, Schmitt, Bradfield, Rodriguez, & McConnell, 2015).

### **Phonemic Awareness**

This term falls under the phonological awareness umbrella. It is knowing that speech and words are made up of individual sounds (Henry, 2007). Students who can orally change the order of sounds to arrive at different words have phonemic awareness (Shaywitz, 2003). For example, the letters o, p, s, and t can be arranged to form four different words: stop, pots, spot, tops.

### **Phonics**

Phonics is defined as having an understanding that letters represent sounds. Phonics is learning and using various sound and letter combinations to create and read words. In the English language, it is generally understood that there are 44 sounds that can be created with the 26-letter alphabet. Phonics is an ability to distinguish these sounds, manipulate them into words, and read the words (Binks-Cantrell, et al, 2012b; Moats, et al, 2010; Shaywitz, 2003). Systematic, explicit, and direct instruction in a phonics-based program is an ideal approach when teaching students with dyslexia how to read (Foorman, Chen, Carlson, Moats, Francis, & Fletcher, 2003; Lyon & Weiser, 2009; Mathes & Torgesen, 2011; National Reading Panel, 2000; Shaywitz, 2003; Washburn, Joshi, & Binks-Cantrell, 2011a).

### **Morphology**

A morpheme is the smallest part of a word that has meaning (Soifer, 2007). Morphology is the study of how words are formed. Some words include affixes attached

to base words. Being able to recognize and identify basic word parts helps with reading and gaining meaning of the words. Prefixes and suffixes are added to a base word to create words with other meanings (Binks-Cantrell et al., 2012a; Moats et al., 2010; Shaywitz, 2003). The word *cat* is a base word. By adding a suffix *-s*, you change the meaning of the word to be more than one cat. There are now two parts of the word: *cat* and *-s* (Moats et al., 2010).

The National Reading Panel's report in 2000 determined that effective reading instructional methods should include the areas of phonemic awareness, phonics, fluency, vocabulary, and strategies for reading comprehension. By providing explicit and direct instruction in these areas, all of the basic language concepts would be included. All students would benefit from evidence-based reading instruction.

Shaywitz (2003) stated that, "Research has opened our eyes to how important it is to have phonological skills in place during the first years of school" (p. 144). This is especially true for students with dyslexia. Shaywitz continues, stating that those who do not have a good phonological background by the end of first grade will continue to be poor readers in the fifth grade if they do not receive explicit and direct instruction in the areas of phonological awareness and phonics through evidence-based programs. Shaywitz also discusses the importance of using a reading program that includes a phonemic awareness and phonics component as an integral part of teaching a student with dyslexia how to read (Shaywitz, 2003).

Moats (1999) explained that, "The language skills that most reliably distinguish good and poor readers are specific to the phonological or speech-sound processing system" (p. 16). Similar to what Shaywitz (2003) said, this means that students must be

able to associate the sound with the letter or letters that make that sound, which enables them to read the words. Students who can associate patterns of letters will more likely be able to connect those letters into words or word parts because of their knowledge of phonology. Moats also supports the use of research-based reading instruction (Moats, 1999).

The International Dyslexia Association's Professional Standards and Practices Committee published the *Knowledge and Practice Standards for Teachers of Reading* in 2010, and it is currently being revised. It provides guidelines for reading teachers to help understand basic language concepts and what students should be able to do within each parameter (Moats, Carreker, Davis, Meisel, Spear-Swerling, & Wilson, 2010).

### **Teacher Knowledge, Dyslexia, and Basic Language Concepts**

Research suggests that there is a correlation between a teacher's knowledge about dyslexia and basic language concepts with the success of the student with dyslexia (Binks-Cantrell et al., 2012a; Cunningham, Perry, Stanovich, Stanovich, 2004; Moats et al., 2010; Washburn, Mulcahy, Joshi, Binks-Cantrell, 2016; Washburn et al., 2011a). Lyon and Weiser's 2009 discussion suggests that we hold teachers accountable for increasing reading scores for their students, however, we do not give them the knowledge or the tools to be successful in doing this. The authors argue that teachers are not adequately prepared to work with all students, especially those struggling to learn to read (Lyon & Weiser, 2009). Giving pre-service teachers a familiarization with current trends in education or snippets of research-based practices regarding teaching reading may not be enough preparation for a classroom that may include students who are struggling to learn to read (Duffy & Atkinson, 2001).

In 2005, Wadlington and Wadlington looked at beliefs regarding dyslexia, what teachers knew about dyslexia, and recommended ways that teachers can become better prepared to teach students with dyslexia. To achieve this, they developed a 32-question survey, which they called "Dyslexia Belief Index". They gave it to 250 participants including faculty, graduate, and undergraduate students at a large university.

Wadlington and Wadlington found that in general, educators across the board had a lack of understanding regarding dyslexia. Myths and misunderstandings regarding what dyslexia is or what it might look like in the classroom were common and spread among all three groups who were surveyed. Of the graduate and undergraduate students surveyed, elementary school pre-service teachers showed to be knowledgeable about dyslexia, scoring higher than special education teachers (Wadlington & Wadlington, 2005).

The effects of building teacher knowledge regarding phonological awareness and phonics was the subject of Brady, Gillis, Smith, Lavalette, Liss-Bronstein, Lowe, North, Russo, and Wilder's 2009 study. They gave professional development in the area of phonological awareness and phonics through two days of summer instruction, monthly workshops for the school year, and weekly in-class guidance to 57 first grade teachers. They found that teacher knowledge increased from 38% to 70% in various areas of phonological awareness. These are necessary gains for teachers to adequately teach beginning readers how to read. They also found that beginning teachers were more welcoming of the help and professional development than veteran teachers (Brady et al., 2009).

Another study regarding teacher knowledge and dyslexia was conducted by Ness and Southall in 2010. They gave 287 pre-service teachers in both undergraduate and graduate programs from three different states an open-ended questionnaire. In it, they were asked to define dyslexia, identify the characteristics of what students with dyslexia might show, and to state their ideas of what effective instruction for students with dyslexia would include. Participants were also asked to indicate where they received the information they were including in the survey.

Ness and Southall found that less than 2% of participants stated that dyslexia is "a language-based reading disorder" (p. 39) but the majority did understand it to be a reading disorder. They also found there to be confusion or a lack of knowledge about how to best teach students with dyslexia. Both pre-service teachers and graduate-level teachers indicated they received their information about dyslexia mostly from someone they knew who was dyslexic. Thirty-three percent acknowledged having no experience with dyslexia or no idea of what do to with a student with dyslexia (Ness & Southall, 2010).

Podhajski, Mather, Nathan, and Sammons found that providing teachers with professional development in the area of scientifically-based reading instruction made a difference in students' reading ability (2009). After participating in a 35-hour course that focused on phonemic awareness, phonics, and reading fluency, first and second grade teachers followed an explicit reading instruction program for all students in their class for one year. These teachers also had a professional mentor coach to provide support (Podhajski et al., 2009).

The first-grade experimental group out-performed the control group at the end of the year in the areas of reading fluency, phonemic segmentation, phonics application for nonsense word reading, and oral reading. The second-grade experimental group also out-performed their control group in the areas of phonemic segmentation. The results confirm that teacher knowledge enhances student reading growth (Podhajski et al., 2009).

A similar study was conducted by McCutchen, Abbott, Green, Beretvas, Cox, Potter, Quiroga, and Gray in 2002. They gave a 2-week summer training program to kindergarten and first grade teachers regarding explicit instruction in the areas of phonological and orthographic awareness, as well as the need for explicit and direct instruction for students with learning disabilities. They also worked with the teachers throughout the school year. Their findings were similar to that of Podhajski et al. (2009) in that they found with the increase in teacher knowledge regarding basic language concepts and how to teach them, their student's reading ability improved (McCutchen et al., 2002).

An Australian study conducted by Fielding-Barnsley and Purdie in 2005 looked at teacher attitudes and their knowledge of basic language concepts. They gave a survey to 340 teachers: 93 pre-service teachers, 209 primary teachers, and 38 special education teachers. With results similar to Podhajski et al. (2009) and McCutchen et al. (2002), Fielding-Barnsley and Purdie found that teacher knowledge at either pre-service or in-service level is lacking in the areas of basic language concepts (Fielding-Barnsley & Purdie, 2005).

In 2001, Bos, Mather, Dickson, Podhajski, and Chard looked at teacher knowledge and perceptions regarding reading instruction, including 252 pre-service and

286 in-service teachers of kindergarten through third grade. Current teachers had a wide range of experience, from one year to over 20 years in the elementary classroom. They wanted to find how perceptions of basic language concepts are characterized for teachers, how perceptions and knowledge change based on years of experience, what the comparison between the groups' perception of knowledge of teaching reading is, and if teachers' perceived level of knowledge of basic language concepts relate to their actual level of knowledge of basic language concepts (Bos, Mather, Dickson, Podhajski, Chard, 2001).

Bos et al. (2001) found that 53% of pre-service teachers and 60% of in-service teachers could not correctly answer about half of the basic language concepts questions. Although those with many years of experience scored higher than teachers with five years of experience or less, they all got fewer than two-thirds of the answers correct. Regarding the teachers' perception in their ability to teach reading, the study found that pre-service teachers were more likely to use an explicit and direct approach to ensure they reach all students, whereas in-service teachers felt that an explicit and direct approach was not the best approach for struggling readers. Bos suggests that the connection between teachers' perception and actual knowledge of basic language concepts for both groups imply that those who feel more knowledgeable also feel more prepared to work with struggling readers (Bos et al., 2001).

Washburn, Joshi, and Binks-Cantrell's 2011(b) study looked at pre-service teachers' knowledge regarding basic language concepts with regard to their perceived knowledge about dyslexia. They surveyed 91 pre-service teachers in an accredited university program for general education for teaching kindergarten through fifth grade.

The participants were asked 39 questions relating to the areas of phonemic awareness, phonics, morphology, and phonology. They found that pre-service teachers are aware of basic phonological awareness skills such as counting syllables but scored lower regarding morphology and phonics. Additionally, they found that pre-service teachers held both truths and myths regarding dyslexia (Washburn et al., 2011b).

Washburn et al. suggest that pre-service teachers have a working knowledge of what dyslexia is but are confused as to what it is not. They found that pre-service teachers know that students with dyslexia will have trouble reading, however, they believed that flipping letters around is "an indicator" of dyslexia (p 39). Pre-service teachers were not aware that dyslexia is language-based as opposed to visual-based (Washburn et al., 2011b).

In 2011(a), Washburn, Joshi, and Binks-Cantrell conducted a similar study with current teachers with various years of service. Two of their four research questions were to determine teachers' knowledge and perceptions regarding teaching basic language concepts and basic language concepts in relation to dyslexia. A total of 185 kindergarten through fifth grade teachers were surveyed in this study. They found that the average elementary-level teacher perceived themselves as being moderately able to teach struggling readers as well as students who are not struggling. Elementary teachers believed they were able to address the needs of all students regardless of being dyslexic or not. The authors also found that teacher knowledge of the basic language concepts was varied. The more complex the word or the deeper the knowledge needed to be, the less likely teachers were to answer correctly (Washburn et al., 2011a).

Regarding teacher knowledge and dyslexia, Washburn, et al. found that teachers with varied years of experience continue to believe that dyslexia is a visual disorder as opposed to a phonological disorder. They go on to state that this can be detrimental to children with dyslexia or those with similar-looking characteristics because their chances of receiving appropriate intervention in the primary grades will impede their reading development (Washburn et al., 2011a).

Spear-Swerling, Brucker, and Alfano's 2005 study looked at 132 graduate school students who were either in special education, reading, or elementary education graduate programs. Of the 132 students, 119 were already fully-credentialed teachers. The purpose of the study was to determine if experienced teachers perceived themselves as more knowledgeable than less experienced teachers, would they be able to perform better in the area of literacy, and how accurate their self-perceptions would be (Spear-Swerling et al., 2005).

Spear-Swerling, Brucker, and Alfano found that those teachers with a limited knowledge of literacy, which included the areas of reading, phonemic awareness and phonics, morphological awareness and word structure, had a lower perception of their ability to teach reading. This study also supports previous studies regarding the need for continued teacher preparation in the areas of literacy and teaching reading. Even teachers with a background in teaching reading performed lower than expected (Spear-Swealing, Brucker, & Alfano, 2005).

In a study conducted by Moats and Foorman (2003), teacher knowledge and student reading achievement at a low-performing urban school over a four-year span was assessed. Surveys were given to 103 third and fourth grade teachers to determine their

level of knowledge in basic language concepts and their ability to teach them. They found that about one third of teachers had a basic working knowledge of how to address students who were struggling to learn to read and approximately 20% had very rudimentary and limited information (Moats & Foorman, 2003).

Giving teachers a voice and allowing them to give their opinion regarding dyslexia and working with students with dyslexia was the topic of a study by Worthy, DeJulio, Svrcek, Villarreal, Derbyshire, LeeKeenan, Wiebe, Lammert, Rubin and Salmeron (2016). They talked with 32 elementary school teachers including teachers from general education classrooms, bilingual teachers, special education teachers, literacy coaches, reading specialists, and dyslexia specialists. They interviewed participants individually and found two common themes: teachers are willing to take responsibility in ensuring that all the students assigned to them will be given the best instruction possible to meet their individual needs; and that there are "barriers" (p. 444) that get in the way of the teachers reaching the goal of meeting each student's individual needs (Worthy et al., 2016).

In their efforts to reach all students in the best way, Worthy et al. found that teachers reported they went out of their way to comply with laws and district mandates. The majority of the teachers indicated they went beyond what was required of them, seeking out information on their own to further educate themselves such as reading journals, books, and professional development. Many more simply asked for help from colleagues or specialists. Most all felt they were given inadequate training or information regarding dyslexia. As good teachers, they would analyze assessments to help them determine their next step in moving forward with that student. Many teachers also spoke

to the importance of getting to know the student on an individual basis and not simply see the student as dyslexic (Worthy et al., 2016).

The teachers also spoke of "barriers" (p. 444) they felt pre-empted their ability to help all their students including those with dyslexia. Many felt their district did not provide enough information for them to access and noted some information was conflicting. Very few could discuss dyslexia with accuracy and clarity simply for lack of understanding. Others felt like their concerns were not heard when voiced to administration or districts regarding the process of identifying a student with dyslexia. They also addressed the amount of time it takes once the process of diagnosis has started as well as why some students are diagnosed, and others are not. Teachers were also feeling the added pressure of state-mandated testing. Others discussed pressure from parents who wanted answers about why their child is having trouble reading (Worthy et al., 2016).

Worthy et al. (2016) state that although teachers acknowledged having a lack of understanding regarding dyslexia, they felt confident in their abilities to teach students who are struggling to read. However, that confidence waned when the student was given the label of dyslexia (Worthy et al., 2016).

Woodcock and Vialle (2011) surveyed and interviewed 444 Australian pre-service teachers regarding their views of working with students with dyslexia. They wanted to know if pre-service teachers had pre-conceived ideas of how a student with dyslexia might perform, what their attitude or level of frustration was toward that student, and the pre-service teacher's expectations for that student. Pre-service teachers were

given eight written scenarios and asked to answer four questions regarding each scenario (Woodcock and Vialle, 2011).

Woodcock and Vialle found that as the student's ability to perform as expected went down, the teacher's sympathy for the student went up. However, the expectation for the student's success decreased. As the hypothetical students' efforts increased, the pre-service teacher's attitude became more positive and his or her level of sympathy for the student increased, and the teacher's level of expectation rose. However, when the scenario indicated the student had a learning disability, the pre-service teacher had a higher level of sympathy, but their expectations decreased. Woodcock and Vialle conclude that pre-service teachers feel students with a learning difference will put forth less effort and be less likely to be successful (Woodcock & Vialle, 2011).

In a different approach, Brannon and Fiene (2013) looked at pre-service teachers and their student teaching experiences. They believe the student teaching experience has not changed much in the last ten years, however, the general education classrooms have changed greatly. Their study considered whether a "structured participation experience" (p. 186) would increase their effectiveness for teaching reading. They worked with 26 pre-service teachers over the course of two semesters. Those students with a more structured approach to their student teacher experience worked with students more often than those who were in a traditional student teacher program. Pre-service teachers in the study indicated that spending more time with students gave them a more meaningful experience and had more opportunity to apply knowledge they had learned in the classroom. The pre-service teachers were also more positive about teaching strategies they had learned in their teacher preparation classes. Those who were not part of the

study felt they had more time with the teacher than with the students. (Brannon & Fiene, 2013).

The State of Texas has had laws governing dyslexia since 1986 when the first dyslexia laws were passed. They require public schools to assess students who they suspect of having dyslexia and provide services for those who have been determined to have dyslexia. The original Dyslexia Handbook was published in 1987. The most recent revision in 2014 includes dyslexia as well as related reading disorders. One of the requirements necessary to be in compliance with the law is that anyone who teaches a student with dyslexia must have training in current dyslexia research and know research-based practices when working with students with dyslexia. To help districts, schools, and teachers meet the requirements outlined in the TEA's handbook, the Texas Dyslexia Identification Academy (TDIA) was created (Texas Dyslexia Identification Academy, 2017).

TDIA is comprised of five modules designed to aid in the identification and broaden the knowledge base of teachers who may have students with dyslexia in their general education classrooms while meeting the training requirements. The first module is called *Foundations* and is designed to give a broad overview of dyslexia. It provides a definition of dyslexia and related disorders, describes traits or characteristics of dyslexia at various ages or grade levels, talks about the science of reading, and discusses how other academic areas in addition to reading may be affected because of dyslexia. Completing module one can satisfy the dyslexia training requirements in some Texas districts (Texas Dyslexia Identification Academy, 2017).

The next two modules are suggested for all classroom teachers. Module two addresses when to assess a student for dyslexia and how to follow the necessary procedure to be in compliance with Texas laws. Module three addresses the needs of students with dyslexia who are English Language Learners (ELL) as well. This module reviews the process of learning a second language, the unique needs of addressing an ELL student with dyslexia regarding various orthographic patterns in other languages and addresses the specific instructional needs for these students (Texas Dyslexia Identification Academy, 2017).

Although open to teachers and others who work with students with dyslexia, the last two modules are geared toward dyslexia specialists, special education teachers, and educational diagnosticians. Module four provides information necessary to interpret testing scores and data obtained through both formal and informal assessments. How this data is used in determining if a student is eligible for Section 504 status is also addressed here. Module five discusses how to write a report for the Section 504 or IDEA processes. These reports are used in making decisions regarding the student's education and will become part of the student's permanent educational file (Texas Dyslexia Identification Academy, 2017).

### **Summary**

Research suggests that there is a correlation between a teacher's knowledge about dyslexia and the success of the student with dyslexia (Binks-Cantrell et al., 2012a; Cunningham, Perry, Stanovich, Stanovich, 2004; Moats et al., 2010; Moats, 1999; Washburn, Mulcahy, Joshi, Binks-Cantrell, 2016; Washburn et al., 2011a). A teacher's knowledge of dyslexia is key to early intervention and is vital in addressing the needs of

those with dyslexia (Denton & Mathes, 2003; Mather, 2016; Shaywitz, 2003; Washburn et al., 2011b). Research indicates that those who are teaching students how to read, including those students with dyslexia, have a limited knowledge of basic language concepts of the English language themselves (Binks-Cantrell et al., 2012a; Bos et al., 2001; Moats, 1999; National Reading Panel, 2000; Washburn et al., 2016). However, explicit and direct instruction in basic language concepts is the best approach for teaching students with dyslexia how to read (Bos et al., 2001; Moats, 1999; National Reading Panel, 2000; Shaywitz, 2003).

Students who do not have a solid foundation for reading and basic language concepts in the primary years will be more likely to fall behind their typical-learning peers in reading ability. These students are more likely to continue to be behind in reading in subsequent years and will most likely not catch up to their peers who do not have dyslexia (Blachman, 2000; Shaywitz, 2003; Snow, Burns, & Griffin, 1998). Early intervention with explicit, direction instruction in basic language concepts is necessary for those students who are struggling to learn to read. When teachers have a knowledge of phonological processing, phonics skills, and other basic language concepts, students will be more successful (Bos, Mather, Friedman-Narr, & Babur, 1999). Therefore, it is important that students in teacher preparation programs be given the knowledge regarding students with dyslexia and how best to teach them. There is still progress to be made in the area of teacher knowledge and teaching reading to the beginning or struggling reader (Lyon & Weiser, 2009).

Chapter three includes the methodology used in the current study. The sections in the methodology chapter include purpose, research design, context and setting,

participants, instrumentation, reliability and validity, data collection, research bias, and data analysis.

## CHAPTER III

### METHODOLOGY

#### Purpose

The purpose of this phenomenological study was to examine the perceptions and knowledge of dyslexia and basic language concepts of pre-service primary teachers. Being able to identify students who show signs of dyslexia early in the student's academic career will give the student a better chance of overcoming their reading deficit (Park, Chaparro, Preciado, Cummings, 2015). Juel's longitudinal study in 1988 showed that 88% of students who were poor readers in the first grade would still be poor readers in the fourth grade. Another longitudinal study conducted by Shaywitz, Fletcher, Holahan, Schneider, Marchione, Stuebing, Francis, Pugh, and Shaywitz in 1999 expounded on this, stating that students who experienced reading issues in primary and elementary school continued to have reading issues into high school. Since developmental reading growth can be determined as early as kindergarten or first grade, the level of knowledge of teachers' ability to provide effective instruction should begin as early as kindergarten or first grade as well (Peart, 2015).

In 2011, Washburn, Joshi, and Binks Cantrell published a study titled *Are Preservice Teachers Prepared to Teach Struggling Readers?* The purpose of their study was to examine the knowledge and skills of pre-service teachers regarding dyslexia and basic language constructs. Their study surmised that teacher preparation programs may not adequately prepare teachers in the area of basic language constructs or how they relate to a struggling reader or a student with dyslexia. The Texas Education Agency (TEA) released a revised Dyslexia Handbook in 2014. This handbook states that Texas

teachers should know the following about dyslexia: recognize the characteristics of dyslexia; understand procedures for assessing students for dyslexia; identify students who may have or be at risk for having dyslexia; provide instruction to students with dyslexia (TEA, 2014). Also, in 2014, a new Texas Examinations of Educator Standards (TExES) Program manual was released. It includes test questions in the areas of oral language development, phonological and phonemic awareness, and the alphabetic principle. According to Uhry, these are necessary component of learning to read (2007). Teachers must pass the state examination to become certified teachers in Texas. This examination includes questions regarding dyslexia and teaching students who have dyslexia or are struggling to learn to read (TEA, 2014). The current research was a replication of Washburn, Joshi, and Binks Cantrell's 2011 study and examined the current pre-service teacher's knowledge of dyslexia and basic language concepts based on these new TEA and TExES standards published in 2014. The significance of the current study was to see if the gap in teacher knowledge is closing with the implementation of these new standards.

### **Research Design**

In this phenomenological study, the researcher used qualitative research methods to examine the perceived knowledge of pre-service primary teachers regarding dyslexia, basic language concepts, and teaching reading to students who are struggling to learn to read or have been diagnosed with dyslexia. With this, the researcher gained information about the level of preparation for primary teachers and their ability to teach reading. To obtain this information, the researcher used surveys and questions to address the following three research questions:

- 1) What are pre-service primary teachers' perceptions regarding dyslexia?
- 2) What are pre-service primary teachers' knowledge of basic language concepts?
- 3) What are pre-service primary teachers' perceptions regarding their preparation to teach students with dyslexia?

Boeree (2002) noted that the phenomena speak for themselves, meaning the researcher should be prepared to listen. Phenomenology asks the researcher to allow the phenomenon to reveal itself. According to Lichtman (1996), the phenomenological research approach looks at the actual experiences of people regarding a specific phenomenon. Therefore, when using the phenomenological research design, the researcher must remain open-minded and be prepared to accept information obtained from all participants (Lancy, 1993). That is, the researcher should be prepared to give explanations for observed phenomena including any answer or comment received from participants.

### **Context and Setting**

The current research was conducted at a private co-educational Christian university in an urban setting in southeast Texas. It was founded in 1960 as a college and admitted its first freshman class in 1963, totaling 193 students and 30 teaching faculty. Initially, this university offered Bachelor of Arts degrees in only five areas: Christianity, Fine Arts, Languages, Science and Math, and Social Studies. In 1966, this school applied for and received accreditation from Southern Association of Colleges and Schools in 1968. Today, this university continues to focus on the liberal arts, has a 2017 student enrollment of approximately 3160, and offers over 100 undergraduate and graduate degrees. Student faculty ratio is 16:1. Most classes have 20 students or fewer. With the

smaller classes, this allows for individual attention to students in all areas of instruction (The Princeton Review, 2018).

Admission to this university is selective, with an acceptance rate of 33% in 2015 (US News, 2017). The diversity of the student population is something in which the school takes pride. In 2017, demographical information showed the ethnicity breakdown as follows: African-American, 22%; Hispanic, 30%, White, 26%. Rounding out the remaining 22% include ethnicities of American Indian, Native Alaskans, Asian, Pacific Islanders and Hawaiian, Unknown or Undeclared ethnicity, and those identifying as two or more races. Over 8% of enrolled students are international or resident aliens (The Princeton Review, 2018).

As part of the degree plan for those obtaining a Bachelor of Science in Elementary Education, students engage in field-based experiences as part of the requirements for many of the courses. This contributes to practical learning and application of what is being taught in the classroom. The College of Education offers degrees in many areas in the education arena including Art Education, Bilingual Education, Curriculum and Instruction, Educational Administration, Educational Diagnostician, Elementary Education, Secondary Education, Special Education, and others (US News, 2017).

### **Participants**

Participants in the current study were purposefully selected from the university's teacher preparation program. Only undergraduate students who were seeking certification through the Texas Education Agency for teaching primary grade students were part of this study. All ages, genders, ethnic backgrounds, and religion were allowed to participate

provided they met the previously stated criteria. Pre-service teachers followed a degree plan for one of the following educator preparation programs: Early Childhood - 6 (EC-6) with English as a Second Language (ESL) certification, which includes Gifted Education; EC-6 with Bilingual certification; EC-6 with All-Level Special Education certification, which includes ESL and Gifted Education.

Since pre-service teachers must have a background in learning and reading theory, those who participated had completed two pre-education requirement courses: *Learning and Development* and *Foundations of American Educational Thought*. These two courses met that criteria. *Learning and Development* is a study of child development which includes the areas of cognition, social skills, emotional and physical development and how these areas affect a child's learning. Field-based experiences are part of this class.

The purpose of the *Foundations of American Educational Thought* class is to examine the many ways the American education system has been shaped and changed through historical, philosophical, and societal aspects. The future of the educational system is discussed in this class as well as the many issues teachers are facing in the classroom.

In addition, participants were required to have taken a special education class called *Survey of Exceptional Children*. In this class, students received information about dyslexia and had taken the on-line dyslexia module created by the university for their sole use. The objectives of the module are to understand what dyslexia is, how to recognize characteristics of dyslexia, and explaining the process of referring students for testing. Pre-service primary teachers are given a test regarding this dyslexia module and must

pass it with a score of 80% or higher. This course improved their background knowledge of dyslexia and was required before they participated in the current study.

All pre-service primary teachers who participated in the survey and focus group had completed these courses. Those who did not were not allowed to participate.

### **Instrumentation**

Although there are other surveys to glean information regarding pre-service teachers' perceptions and knowledge of dyslexia and basic language concepts, one instrument that most exemplified the purpose of this research was created by Binks-Cantrell, Joshi, and Washburn (2012a). Their instrument titled *Survey of Basic Language Constructs* includes 27 multiple choice and short answer-type questions. It was designed to determine the participant's level of knowledge regarding phonological awareness, phonemic awareness, phonics, and morphology. Binks-Cantrell et al. gave their survey to 286 people, including 114 teacher educators and 172 pre-service teachers. Teacher educators were defined as those who had a doctorate degree or were in the process of obtaining a doctorate degree and were teaching teacher preparation courses for teaching reading to Early Childhood through fourth grade pre-service teachers. Pre-service teachers were defined as those who were currently taking college courses with the intent of obtaining certification to teach primary grade students. Permission to use *Survey of Basic Language Constructs* was obtained and was used in the current study as originally written by Binks-Cantrell, Joshi, and Washburn in its entirety.

A focus group comprised of pre-service primary teachers who completed the above-mentioned survey was convened. Of all those who participated, five pre-service teachers volunteered to be part of a focus group. These five pre-service primary teachers

discussed open-ended questions written by the researcher that were based on findings and information from current research. The purpose was to gather data regarding pre-service primary teachers' perceptions about dyslexia and basic language concepts and their perceived preparation level regarding teaching reading.

### **Reliability and Validity**

Reliability and validity are critical components of the data-gathering instrument (Lunenburg & Irby, 2008). Reliability indicates that the data-gathering instrument is measuring the given information consistently each time the instrument is used, and validity is the instrument's ability to measure what it is intended to measure (Lunenburg & Irby, 2008).

The survey questions and the focus group interview session were designed to meet the criteria for validity according to Guba and Lincoln (1989) and Erlandson, Harris, Skipper, and Allen (1993). They believe qualitative research must include the following: truth, applicability, value, consistency, and neutrality to be considered valid. The current study met all five criteria in the following ways. The criterion of truth was achieved by using only unaltered participant responses. Oral and written responses from the participants were put into categories and tables. Applicability was achieved as the results may be applicable to other students enrolled in teacher preparation programs in other colleges and universities. The value was met by examining the perceptions and knowledge of participants regarding dyslexia and basic language concepts and their ability to teach students who have dyslexia. This information will also have value to administrators, including principals and curriculum directors, of elementary schools and school districts. Consistency was achieved by ensuring that every participant was

provided the same survey questions and given the same opportunities to answer verbal questions during the focus group session. Neutrality was obtained by reducing the researcher's bias when gathering participants' responses. A conscious effort was made to ensure that the researcher did not influence the participants' responses. The researcher did not show the participants any positive or negative expression in body language or verbal language to the answers given during the focus group discussion.

### **Data Collection**

Approval to conduct the current study was obtained from the University's Institutional Review Board where the participants are enrolled and permission to enter classes when pre-service primary teachers were in class had been granted. Instructors who were willing to allow their students to participate allowed the researcher to enter their class at a pre-determined time. The researcher explained the purpose of the survey, distributed, explained, and collected consent forms to those willing to participate. Next, the researcher distributed the 27-question confidential survey and collected it. These are being kept separately from the previously signed consent forms to ensure participant's answers remain confidential. The researcher announced a follow-up session in the form of a focus group. This focus group was open to volunteers who had just completed the *Survey of Basic Language Constructs*.

Those who chose to participate in the focus group were given a consent form upon arrival. The signed consent form was collected and kept by the researcher. Audio recording of the discussion were obtained as well as notes taken by the researcher. The audio recording was transcribed. Participants were asked to provide an email address and were offered a copy of the transcribed notes with an opportunity to make any corrections

or clarifications to their comments. However, when this was explained, all participants declined to provide an email, saying they did not feel they would need to review their answers. The final transcript was combined with the handwritten notes taken by the researcher during the focus group discussion.

All written survey data, audio transcriptions of the focus group, and handwritten notes are being kept at the researcher's home in a locked desk when it is not in use. All consent forms are kept in the locked drawer separate from the collected data. After the publication of this research, all data will be destroyed.

Confidentiality was maintained throughout the data collection process. Consent forms and surveys have an identifying number written on each one. Each form, however, is being kept separate, allowing the participants to remain confidential. For those attending the focus group discussions, consent forms had a letter written on them and participants wore name tags with letters matching their consent forms during the discussion. No names were used, and participants were not identified in any way. When documenting the discussion, the researcher asked participants to refer to the letter on their nametag for recording purposes only. There was no compensation given to participants completing the survey. However, those who participate in the focus groups were offered pre-made sandwiches, chips, and cookies.

### **Researcher Bias**

Researchers must clearly state their biases, so participants can make an informed choice when deciding what they think about all data that are presented (Heath, 1997). Researcher bias is a very important factor in qualitative research. Because of this, the researcher remained as neutral as possible to minimize any chance of bias.

The researcher is a reading specialist who works with students diagnosed with dyslexia. Therefore, the researcher was diligent in efforts to not bring any bias into discussion questions. This was achieved by constructing open-ended questions for the focus group that were based on findings and information from the current research. During the discussion, the researcher did not express an opinion of the participant's responses through verbal or facial expression or body language. The researcher was open to all opinions and all levels of knowledge regarding the pre-service primary teacher's understanding of dyslexia and basic language concepts.

### **Data Analysis**

Upon completion of all data collections, the questions to the survey instrument were compared to an answer key. This information was analyzed to provide the researcher with the level of knowledge the participants have regarding dyslexia and basic language concepts. The transcript of the focus group was coded to look for trends and common themes in response to the questions posed by the researcher. The survey answers, analyses, and common themes provided a level of knowledge that pre-service primary teachers have and are the basis for the results of the research.

### **Summary**

In this chapter, the specific methodology for the current study is presented. The participants were purposefully selected for this research. The instrumentation section of this chapter describes the survey instrument that was used to gather data regarding basic language concepts knowledge. Data collection and analysis procedures are discussed using two means of data collection: a 27-question survey instrument regarding the pre-service primary teacher's knowledge of dyslexia and basic language concepts and

information that was obtained in focus group discussions. The findings will be the focus of Chapter IV which include an introduction, research question one and a summary of finds, research question two and a summary of findings, research question three and a summary of findings, and a chapter summary.

## CHAPTER IV

### FINDINGS

This study was designed to investigate pre-service primary teachers' perceptions regarding dyslexia, their level of knowledge of basic language concepts, and their perceived level of preparation for teaching a student with dyslexia. To do this, a survey of basic language concepts was taken by 37 pre-service primary teachers. Of those 37 participants, five were randomly selected to be part of a focus group where specific questions were asked. Their responses were recorded and transcribed. Trends and commonalities were determined based on the information the focus group shared with the researcher. This chapter explains the results of the survey and the focus group and how those results answered the three research questions.

#### **Research Question One**

*Question 1: What are pre-service primary teachers' perceptions regarding dyslexia?* To answer this question, a focus group of five pre-service primary teachers was formed. Questions that were posed to them to address this question included the following: What do you know about dyslexia; What characteristics might a student with dyslexia show in the classroom; Describe what effective instruction for a student with dyslexia might include; Do students with dyslexia learn in the same way as a typical learner?

#### **Summary of Findings for Research Question One**

**What do you know about dyslexia? Describe what effective instruction for a student with dyslexia might include.**

Answers to these two questions jelled together with many of the focus group participants' responses answering both questions. When asked what they knew about dyslexia, Participant A said, "I know there are different kinds and that there are different kinds of intensities that people could have." Participant D added, "Unless you are like really paying attention, you might confuse it for something else, but not just knowing how to read, especially at an early age." When addressing a question regarding the participant's level of knowledge about dyslexia, pre-service primary teachers were comfortable in knowing students would need modifications and accommodations. One accommodation they spoke of included the use of colored overlays or colored paper. They explained this would cut down on any glare from the lights and could help with the harshness of black print on white paper. Two of the participants felt this should be an option for students who are struggling with learning to read.

Another pre-service primary teacher discussed reading any tests, assignments, or worksheets aloud for the student. Other focus group participants agreed with this. However, one noted that although he understood why this was necessary, the time and logistics of this accommodation would make it difficult. As a student teacher or a pre-service primary teacher receiving observation and practical hours in an actual classroom, two had mentioned doing this for the classroom teacher. They did not know how the teacher would handle pulling a student to read a test or worksheets to them if they did not have an aid.

Utilizing various models of teaching such as hands-on projects, pictorial presentations, character maps, plot charts, and such were identified as being a modification that would benefit all the students in the classroom. It was explained that a

student who might have or does have dyslexia would still be able to participate in the lesson if it was presented in a visual way.

Another accommodation for students with dyslexia mentioned in the focus group included providing additional help throughout the day for that student. One suggestion was pulling the student aside for targeted practice of specific skills such as letter/sound identification, word drills, or help with spelling words.

Focus group participants all agreed that students with dyslexia would fall under special education or Section 504 to receive services. All focus group participants felt confident in how to refer a student for assessment.

### **What characteristics might a student with dyslexia show in the classroom?**

Characteristics of students with dyslexia were discussed. Focus group participants were divided in the students' performance in the classroom. Some felt they would have lower grades, others felt they could have higher grades, and others felt they could have both lower and higher grades depending on the subject. They also discussed how a student with dyslexia may have difficulty with word recall. One participant recalled an instance when a student wanted to contribute to the class discussion, but he was struggling to say exactly what he wanted to say. He became frustrated when the words he said were not conveying the meaning he intended. Another focus group member told of a time when a student could not recall the word *hamburger* when asked what he had just eaten for lunch. The participant felt like the student knew they had just eaten a hamburger but could not say the word when asked.

There was a discussion of how dyslexia could affect the emotional well-being of the student. Participant E stated, "Acting out in class could be an indicator. And

something like keeping to themselves. Sometimes they shut down or they don't talk a lot in class." Asking students to miss recess or pulling students out of the classroom for help might affect them socially. The group said that students with dyslexia will better understand information when it is presented verbally instead of in writing. The focus group agreed that typically students with dyslexia are smart and are capable, but because of their learning disability, they may not seem like they are.

Comprehension was a reoccurring topic during the focus group discussion. One participant discussed how comprehension will be affected because of poor reading skills. The participant went on to describe how a student with dyslexia may never enjoy reading because they will not be able to understand what they are reading. When discussing the need for verbal instruction for students with dyslexia, one participant said this was necessary because their comprehension skills are affected by their disability.

### **Do students with dyslexia learn in the same way as a typical learner?**

When the focus group was asked if students with dyslexia learn in the same way as a typical learner, they all agreed that they would not learn in the same way. Reasons they gave for their answer included a brief discussion on the brain and how a person with dyslexia has a differently-wired brain, causing their eyes to flip images or to move letters around on the page. Participant E stated, "Also, their learning will come from what they hear and what is spoken to them." Participant A added, "They will also require more focus on their school work, you know, just to get it done." This led to a discussion about parental involvement and how parents may not always be aware of their child's disability. Participant C explained, "You have the one side where the student has very little support at home and the other side where maybe there's a right amount of support at home. The

the parents know what to do in order to help the student learn and yet those were a negative effect from almost too much help.”

When the researcher asked the focus group participants if they felt it was their job to educate the parents on dyslexia, they were not sure if that was the place of the teacher or not. Participant E said, “Officially, I am not sure. Officially, it is the responsibility of the teacher to let the parents know what is going on and try to work with them as much as possible, because ultimately, if you don’t, it’s the children who will suffer.” They did state that the teacher needed to advise the parents of what they are seeing in the classroom.

In summary, the five focus group participants discussed the need for and various uses of modifications and accommodations for students with dyslexia. They knew students with dyslexia would require them, but they were not sure how they, as teachers, would be able to provide modifications and accommodations as often as necessary. They cited time constraints, taking the student from recess or other ancillary times, or taking time away from the rest of the class. Pre-service primary teachers noted this could affect the child’s self-esteem and social interactions. Pre-service primary teachers did, however, acknowledge the need for visual clues during class instruction.

Characteristics of dyslexia and how they might manifest themselves in the classroom was addressed. Pre-service primary teachers agreed that students with dyslexia will not learn in the same as a typical learner. There was not a consensus of how dyslexia would affect the student’s grades. Some said grades would be lower and that could be an indication of dyslexia. Others argued, saying that students with dyslexia were smart and

that grades should not be used as an indicator for testing. Another said students with dyslexia would have both lower and higher grades depending on the subject.

Pre-service primary teachers knew the brain of a student with dyslexia is wired differently. They used this as a justification for students with dyslexia learning differently than a typical student. However, most all focus group participants said that students with dyslexia would flip letters.

### **Research Question Two**

*Question 2: What are pre-service primary teachers' knowledge of basic language concepts?* Although there are other surveys to glean information regarding teachers' perceptions and knowledge of basic language concepts, one instrument that most exemplified the purpose of this research was created by Binks-Cantrell, Joshi, and Washburn (2012a). Their survey instrument titled *Survey of Basic Language Constructs* includes 27 multiple choice and short answer-type questions. It was designed to determine the participant's level of knowledge regarding phonological awareness, phonemic awareness, phonics, and morphology. Binks-Cantrell, Joshi, and Washburn (2012a) gave their survey to 286 people, including 114 teacher educators and 172 pre-service teachers. Teacher educators were defined as those who had a doctorate degree or were in the process of obtaining a doctorate degree and were teaching teacher preparation courses for teaching reading to Early Childhood through fourth grade pre-service teachers. Pre-service teachers were defined as those who were currently taking college courses with the intent of obtaining certification to teach primary grade students. The researcher received permission from Binks-Cantrell, Joshi, and Washburn (2012a) to use

this instrument in the current research. It was given to 37 pre-service primary teachers as originally written in its entirety.

### **Summary of Findings for Research Question Two**

#### **Self-Reporting Level of Understanding**

Eight of the 27 questions asked the participant to self-report their level of understanding in the areas of phonemic awareness, phonics, fluency, vocabulary, comprehension, children's literature, teaching literacy skills to students with dyslexia and using assessments to inform reading instruction. The rating scale included choices of minimal, moderate, very good, and expert. All 37 participants answered all eight questions.

Phonemic awareness can be a predictor of future reading ability (Shaywitz, 2003). In this category, 22 of 37, or 60%, considered themselves to be VERY GOOD in this area, while 12 of 37 or 32% indicated they were only MODERATE in their understanding of phonemic awareness. Two, or 5%, marked MINIMAL and one, or 3%, considered his or herself an EXPERT.

Learning about the relationship between sounds and letters is referred to as phonics (Moats & Foorman, 2003). Regarding phonics abilities, again 22 of 37, or 60%, marked themselves as VERY GOOD, while 10 of 37, or 27%, consider themselves having only a MODERATE level of understanding. Of the remaining five participants, three marked MINIMAL and two marked EXPERT which is 8% and 5% respectively.

The next category asked about reading fluency. This is a person's ability to read smoothly, accurately, and with expression to gain meaning from the written text (National Reading Panel, 2000). In this area, 23 of 37, or 62% of pre-service primary

teachers self-reported their level of understanding as VERY GOOD in relation to fluency. The remaining 14 participants were evenly divided between MODERATE and EXPERT, or 19% in each category.

In the category of vocabulary, 21 of 37 or 57%, reported themselves as VERY GOOD, while 12 of 37, or 32%, marked EXPERT as their level of understanding. The remaining four participants, or 11%, indicated a MODERATE level of understanding regarding vocabulary.

Comprehension, or understanding what is read, was the next category. Again, 21 of 37, or 57%, indicated a VERY GOOD level of understanding, while ten of 37, or 27%, considered themselves in the EXPERT category, and six of 37, or 16%, marked MODERATE.

Regarding an understanding of Children's Literature, the participants were very divided. Three of 37, or 8% indicated a MINIMAL level of understanding. Fourteen of 37, or 38%, marked MODERATE, while 12 of 37, or 32%, considered themselves to have a VERY GOOD level of understanding. Eight of 37, or 22% marked EXPERT.

Teaching literacy skills to students with dyslexia was the next category. MODERATE was indicated by 20 of 37, or 54%, while 11 of 37, or 30%, felt they had MINIMAL knowledge and six of 37, or 16%, marked the VERY GOOD choice.

The last section was regarding the participant's ability to use assessments to inform reading instruction. These responses were mostly evenly divided between MODERATE and VERY GOOD, with 15 of 37, or 41% choosing the former and 20 of 37, or 54%, choosing the latter. Two of 37, or 5%, considered themselves to have a MINIMAL level of experience.

These findings are explained below and in Table 2.

Table 2

*Pre-service Primary Teacher's Self-Evaluation of Basic Language Concepts in each category*

Construct	Minimal	Moderate	Very Good	Expert
Phonemic Awareness	2	12	22	1
Phonics	3	10	22	2
Fluency	0	7	23	7
Vocabulary	0	4	21	12
Comprehension	0	6	21	10
Children's Literature	3	14	12	8
Teaching literature skills to students with dyslexia	11	20	6	0
Using assessments to inform reading instruction	2	15	20	0

The remaining 19 questions on the survey were multiple choice or short answer-type questions. These questions asked the participant to apply their knowledge in the areas of phonemic awareness, phonics and syllable types, and morphology. In analyzing their answers, trends and common themes were determined.

### Phonemic Awareness

Although 60% of participants self-reported a VERY GOOD level of understanding in phonemic awareness, only 13 of 37, or 35%, correctly identified the definition of phonemic awareness. Similarly, 12 of 37, or 32%, correctly identified the definition of phonological awareness. However, when asked to apply their phonemic awareness knowledge to practical questions, their answers were more supportive of their reported level of understanding.

Thirty-two of 37, or 86%, were correct when asked to choose the correct definition of a phoneme. Identifying a word with a similar vowel sound to a given word, 25 of 37, or 66%, responded correctly. A similar question asked the participant to identify a pair of words that started with the same sound. The correct choice, *chef-shoe*, was chosen by 28 of 37, or 76%, of participants. Another phonemic awareness question asked participants to determine the number of speech sounds in words. For the word *knee*, 32 of 37, or 86%, said two sounds which is correct, and 29 of 37, or 78%, said the word *moon* correctly had three speech sounds. When given the word *ship*, 27 of 37, or 73%, indicated three speech sounds. The words *brush* and *through* were correctly identified as four and three speech sounds respectively by 20 of 37, or 54%, of participants. However, the correct number of speech sounds in the word *box* was not correctly identified by anyone. All participants answered three speech sounds, however, the correct answer is four. The letter *x* is two speech sounds, /ks/.

When asked to manipulate sounds in words by reversing the order of sounds in a given word, answers were mixed. Two questions addressed this skill. Reversing the order of the sounds in the word *ice*, the correct new word would be *sigh*. Fifteen of 37, or 41%

answered correctly, while 13 of 37, or 35% erroneously thought the word *easy* was correct. Similarly, given the word *enough*, reversing the order of the sounds, the word would become *funny*. Again, 15 of 37, or 41% chose the correct answer, while 12 of 37, or 32% chose the word *phone*.

### **Phonics and Syllable Types**

Moving to the area of phonics, 22 of 37, or 59%, self-reported a level of understanding as VERY GOOD. When analyzing application questions that had to do with an understanding of phonics and syllable types, the percentage of participants answering correctly was not as high. Only 13 of 37, or 35%, correctly identified a consonant blend, with 16 of 37, or 43%, choosing the *no idea* option. When asked to determine which nonsense word from a list of five nonsense words did not have a silent letter, only 7 of 37, or 19%, answered correctly.

Three phonics questions were regarding syllable types, namely final stable syllable, closed syllable, and open syllable. All three questions performed poorly, with 8 of 37, or 22% answering the final stable syllable question correctly. The answer choice chosen the most was *no idea* by 13 of 37, or 35%. When asked about closed syllables, only 6 of 37, or 16%, answered correctly. Again, the most frequent answer was *no idea* with 10 of 37, or 27%, participants choosing this option. Regarding an open syllable word, only 2 of 37, or 5%, of participants answered correctly, with 13 of 37, or 35%, answering *no idea*.

### **Morphology**

Morphology is the smallest unit of meaning in a word. This has to do with affixes and word parts (Soifer, 2007). When identifying the definition of morphology, 25 of 37,

or 68%, were correct. One question asked the participants to identify the number of syllables and the number of words parts in each of seven different words. Overall, the correct number of syllables was identified by 30 – 34 of 37 participants, or 81% - 92%. Surprisingly, the word *frogs* was correctly identified as one syllable by only 23 of 37, or 62%, of participants. However, the correct number of morphemes for each of the seven words was much lower. Answers were anywhere from 4 of 37, or 11%, for the word *pedestal*, to 18 of 37, or 49%, for the word *teacher*. The answers for the number of morphemes for the other five words fell in between these percentages.

In summary, pre-service primary teachers' knowledge of basic language concepts varied, based on the different categories. Although they could not define the terms, overall, pre-service teachers had a better understanding of phonemic awareness and phonics, albeit, some aspects of phonics application were not consistent. Identifying a blend and number of speech sounds in a given word were answered correctly by at least two-thirds of the participants. The letter *x* was not identified correctly by anyone as having two speech sounds.

As well, syllable type identification and morphology were areas where knowledge was lacking. Understanding and applying the syllable types is a word attack skill that can be successful for students with dyslexia (Moats, 2010; Shaywitz, 2003). This is a way for students to break words into syllables, determine the sound the vowel will make in each syllable, and sound out unknown words. For teachers to be able to teach this skill, they first need to understand it themselves (Moats, 2010, Shaywitz, 2003, Spinelli, 1998; Spear-Swearling, Brucker, & Alfano, 2005).

Morphology showed to be another area of weakness. In the primary grades, basic suffixes such as -ing, -ed, -s, or -ly are a few of those typically taught. Recognizing suffixes in words and knowing how these suffixes change the meaning of the word is another word attack skill that is beneficial to learning to read. By breaking the word into smaller parts and understanding each of the parts, the student can read each part separately then put them together to form a word. Morphology also helps with comprehension.

### **Research Question Three**

*Question 3: What are pre-service primary teachers' perceptions regarding their preparation to teach students with dyslexia?* This question was addressed through the same focus group of five pre-service primary teacher participants. Questions that were posed to them help the researcher answer this question include the following: How do you feel about working with a student who has dyslexia; Do you feel prepared to work with students who are dyslexic; Do you think there is a difference between a student who is struggling to learn to read and a student with dyslexia; Would you help a struggling reader in a different way than you would a student with dyslexia?

### **Summary of Findings for Research Question Three**

#### **How do you feel about working with students with dyslexia?**

When the focus group was asked how they felt about working with a student who has dyslexia, four of the five participants said they did not feel ready to address the special needs students with dyslexia might require. One indicated more training was necessary as she did not feel qualified to work with that population of students. One admitted that while students with dyslexia would be a possibility in general education

classrooms, she had never thought about it extensively. At the time she was learning about dyslexia, she did not feel it was completely necessary to learn about it. Participant C said, “I think some people either overlook it or maybe they think that dyslexic students would be in special education classrooms. I don’t feel any added pressure dealing with a dyslexic student, but I feel like as of right now, I wouldn’t have the tools and I wouldn’t know what quite to do to help the student out.” Another discussed learning how to write lesson plans to address the needs of those who are struggling but never really thought it might actually happen in the classroom. A fourth person thought they would not feel any different having a student with dyslexia in their classroom but thought they would most likely be in a special education setting. The participant admitted to being unsure about what to do with this population.

**Do you feel prepared to work with students who are dyslexic?**

When the focus group was specifically asked if they felt prepared to work with students who are dyslexic, they all said no. One participant surmised they had been taught to expect students with dyslexia but not how to address them. They felt they were taught how to identify a student who might have dyslexia and how they will need modifications and accommodations, however, they felt they did not learn what to do with those modifications and accommodations. Participant C said, “I guess we’ve been taught more how to identify things rather than how to work with them and how to do what they need. We talk about accommodations and modifications, but we don’t exactly learn what we need to do with the accommodations and modifications.” Another discussed being in a school during a field experience where the needs of students with dyslexia were not being

addressed. He wondered if it was because of a lack of training, lack of knowledge, or lack of time.

There was a discussion regarding the dyslexia module students are required to take during their special education class, *Survey of Exceptional Children*. One participant said the module made her feel a little more knowledgeable about dyslexia but did not think it was effective since it could easily be skipped through and completed quickly. The participant felt like the module was important enough to be one class in a degree plan. Other participants agreed.

**Do you think there is a difference between a student who is struggling to learn to read and a student with dyslexia?**

All focus group participants agreed there was a difference between a struggling reader and a student with dyslexia. One suggested that a struggling reader may only have a language barrier and not a disability. Another added that it could be comprehension issues or other learning disabilities that contribute to their learning difficulties. One student stated that early intervention is important, so they can begin remediation as soon as possible.

When discussing the difference between a student who is struggling to learn to read and a student with dyslexia, Participant C said the following:

I think that's why it's important and difficult to identify dyslexia early. It's important because that student's going to get the help that they need earlier and learn techniques that can help them. But on the other hand, it's difficult because especially at an early age, you're going to have those students who don't have the same amount of support at home, so it may seem like they're learning at a slower

rate, possibly, but it's not necessarily due to disabilities or dyslexia or anything like that. It's just that they don't have the support at home. So, it can be difficult to identify early. But it's also very important to do so.

**Would you help a struggling reader in a different way than you would a student with dyslexia?**

When asked if they would help a struggling reader in a different way than they would a student with dyslexia, again, they all agreed the answer was yes. Some saying there would be different approaches, citing the use of colored overlays or colored paper. They would use those for dyslexic students but not for a struggling reader. Another stated that dyslexia is long-term because it is brain-based where the struggling reader's difficulties will be temporary and can learn to read. There was discussion about students with dyslexia flipping letters or seeing them backwards, which is something they felt would not happen with a struggling reader. Younger children may flip letters as a developmental stage of learning, however, that does not mean they are dyslexic.

In summary, all focus group participants acknowledged they did not feel prepared to address the needs of a student with dyslexia in the general education classroom. They agreed more training would be necessary before their comfort level was higher. Some did not fully acknowledge the possibility of having students with dyslexia in their classrooms until this discussion.

As well, all focus group participants agreed there is a difference between a struggling reader and a student with dyslexia. One acknowledged the importance of early intervention. Likewise, focus group participants all said they would help a struggling reader differently than they would a student with dyslexia.

## Summary

In this chapter, findings for the three research questions were explained. Through a survey taken by 37 pre-service primary teachers and the transcription of a focus group comprised of five pre-service primary teachers, pre-service primary teachers' perceptions and knowledge regarding students with dyslexia were determined. The survey revealed that pre-service primary teachers have a good working knowledge of basic language concepts and can apply that knowledge in some areas, while other areas appeared to be more challenging for this group, namely in the areas of syllable types and morphology. Trends and common themes of modifications and accommodations, comprehension, and what a student with dyslexia might look like in the classroom were discussed in the focus group.

The final chapter includes a discussion, relationship of findings to current literature, implications, recommendations for future research, and a summarizing conclusion.

## **CHAPTER V**

### **DISCUSSION, IMPLICATIONS, RECOMMENDATIONS, AND CONCLUSIONS**

#### **Discussion**

A teacher's knowledge regarding dyslexia and best practices for teaching students with dyslexia how to read is a necessary component for the success of these students (Ness & Southall, 2010). Since early intervention using an explicit, direct, and systematic phonics approach is key to addressing the needs of students with dyslexia (Moats, 1999; Shaywitz, 2003), new teachers should be aware of the challenges these students face, recognize the signs students with dyslexia will exhibit, and know how to address these students' academic needs. A pre-service teachers' knowledge regarding dyslexia and basic language concepts is indicative of their ability to teach students with dyslexia and struggling readers how to read (Moats & Foorman, 2003).

The State of Texas is in the forefront of teacher education regarding working with students with dyslexia by requiring dyslexia instruction at the university level (Youman & Mather, 2013). The Texas Education Agency continues to revise The Dyslexia Handbook (2014) which serves as a guide for schools and teachers regarding dyslexia identification, assessment, and intervention. As teachers become more knowledgeable about dyslexia and basic language concepts, more student with dyslexia can be correctly identified and receive the early intervention that is necessary for reading remediation.

Pre-service primary teachers at the university where this study was conducted felt it was their responsibility to ensure all students in their classroom received necessary accommodations and modifications for each student to be successful. They acknowledged needing more information regarding dyslexia and did not feel ready to

address the needs of students with dyslexia. During the focus group discussion, participants seemed genuinely thoughtful about teaching students with dyslexia. However, they did feel they would recognize a student who should be referred for assessment for dyslexia and felt confident about the procedure for referring students for assessment.

### **Relationship of Findings to Current Research**

The purpose of this phenomenological study was to examine the perceptions and knowledge of dyslexia and basic language concepts of pre-service primary teachers. This research was a replication of Washburn, Joshi, and Binks-Cantrell's (2011a) study and examined the current pre-service teacher's knowledge of dyslexia and basic language concepts based on new TEA and TExES standards published in 2014. The significance of the current study was to see if the gap in teacher knowledge is closing with the implementation of the 2014 standards. Washburn, Joshi, and Binks-Cantrell's (2011a) findings indicated pre-service teachers typically have an average level of knowledge regarding basic language skills such as identifying the number of syllables in words. However, they lacked knowledge in other phonemic awareness areas as well as morphology.

The current study's results were similar to Washburn, Joshi and Binks-Cantrell (2011a) in that pre-service primary teachers have a working knowledge of basic language concepts, however, their ability to apply this knowledge is lacking. In both studies, syllable type identification and morphology were areas of weakness for pre-service teachers. Both syllable types and morphology are important concepts necessary in teaching reading (Moats & Foorman, 2003).

Previous research indicates that teacher training in areas of basic language concepts and knowledge of dyslexia is key to student success (Bos et al., 2001; Brady et al., 2009; Cunningham et al., 2004; Duffy et al., 2001; Moats, 1999; National Reading Panel, 2000; Shaywitz, 2003; Washburn, Joshi, Binks-Cantrell, 2011b). The current study found that pre-service primary teachers are learning about basic language concepts and dyslexia. However, using this knowledge when asked to apply it in meaningful ways remains a challenge. This finding is similar to other findings in comparable research (Fielding-Barnsley & Purdie, 2005; Foorman et al., 2003; Leland, 2013; Washburn, Joshi, Binks-Cantrell, 2011b). We as a profession know what to do to help students with dyslexia learn to read. We now need to begin putting this knowledge into action.

### **Implications**

The current study found that pre-service primary teachers have a beginning understanding of basic language concepts and dyslexia but do not always know how to apply that knowledge when working with students with dyslexia. Pre-service primary teachers had a general understanding of what dyslexia is, characteristics of a student with dyslexia, and ways to help students with dyslexia in the classroom. Pre-service primary teachers had the right attitude about working with students with dyslexia, acknowledging they would most likely have students with dyslexia in their classrooms and would need to provide accommodations and modifications for them. However, not having a full understanding of what to do or having a level of comfort working with students with dyslexia were elusive to most in the focus group. Professional development and a mentor teacher with experience working with students with dyslexia may help.

The university where this research was conducted includes specific dyslexia training through a university-created module that is required for all pre-service teachers. This university is on the right track of setting up their pre-service teachers for success regarding teaching reading to all students including those with dyslexia or those struggling to learn to read. Although the ability to apply the knowledge pre-service primary teachers are learning about teaching students with dyslexia remains difficult, the gap in teacher knowledge regarding dyslexia is closing at this university. Other universities can use this information to inform their teacher preparation programs regarding the need for increased instruction about students with dyslexia.

Since this research indicates that pre-service teachers have a working knowledge of dyslexia but could benefit from application of this knowledge, teacher preparation courses could incorporate uses of basic language concepts into their course work. Giving pre-service teachers the practical experience of applying what they are learning will benefit them in the classroom.

Further, school districts could assess the need to provide frequent professional development regarding dyslexia. Subject areas would include recognizing characteristics of dyslexia, how best to address the needs of students with dyslexia, and ways to implement basic language concepts into the reading curriculum.

School districts may consider adding a position of a reading specialist or a dyslexia specialist to their campuses. The specialist would provide assistance to the general education classroom teachers. As well, the specialist could work with students with dyslexia by providing additional explanations and instruction.

School leaders would benefit from increased knowledge regarding dyslexia, the importance of early identification and intervention, and the need for explicit and systematic instruction using a phonics-based curriculum that includes phonemic awareness activities.

### **Recommendations for Future Research**

To turn this study into a longitudinal study, the researcher is considering following the five focus group participants into the general education classroom and surveying them again after one year, three years, and five years. The idea would be to determine any changes in their attitude toward students with dyslexia, what kind, if any, professional development they had received regarding dyslexia, how they are addressing the needs of students with dyslexia in their classroom, when they began to feel comfortable in the classroom addressing the needs of students with dyslexia, what they perceive to be issues or concerns about working with students with dyslexia and if the recent Texas legislation regarding testing students in kindergarten and first grade for early intervention has made a difference.

Expanding on this research, specific and targeted training that included application activities in the areas of basic language concepts could be given to pre-service teachers. Pre- and post-assessments could be used to determine if this type of training would make a difference in teacher preparation in working with students with dyslexia.

Future research could investigate similar research questions with novice teachers and their level of knowledge and perceptions regarding dyslexia, their feeling and attitude toward students with dyslexia, and how they are addressing the needs of students with dyslexia in their classroom.

Researchers could examine how teachers interact with students with dyslexia in the classroom including teachers with and without additional professional development regarding dyslexia, early intervention, accommodations, and modifications.

By following group of elementary grade students who are struggling to learn to read through their high school years would be interesting research. Recording the students' experiences, perceptions, attitudes, and beliefs about learning to read, how they learned to read, how teachers interacted with them, and what they feel would have been beneficial to their learning, but they did not receive. This longitudinal data would be a beneficial addition to dyslexia and teacher knowledge research information.

Researchers could conduct a comparison study looking at a student with dyslexia, a struggling reader, a student from a low socio-economic background, and an English language learner to see similarities and challenges for students in each demographic regarding learning to read and how learning to read is different for each. Looking for similarities and differences in teaching students from these various demographics would be interesting.

Further research could be to look at pre-service or novice teachers' knowledge in basic language concepts and students with dyslexia compared to the curriculum they will be expected to teach. Some research questions might include the following: Are teachers free to use their knowledge of basic language concepts in the general education classroom? Do school administrators support teachers varying the curriculum to include current information they are learning at the university level if that information is not part of the existing curriculum? Do teachers feel comfortable asking administration about adding basic language concepts into their general education classroom curriculum?

This study could be replicated with a larger sample and in a different part of Texas or different state. As well, looking at various teacher preparation programs within the state and following graduates into the classroom would yield relevant information. Researchers could look at several different areas: are teachers using what they had learned in their training and bringing it in their classroom; are teachers supported by their school leaders to use information they had learned in the training; and does the curriculum the school uses support what teachers know about dyslexia and working with students with dyslexia.

### **Conclusions**

At the university where this research was conducted, pre-service primary teachers receive current and adequate information regarding dyslexia and are told they should expect to encounter students with dyslexia in their classrooms. They have been made aware of what a student with dyslexia might look like in their classroom and the procedures for obtaining services for these students. Pre-service primary teachers at this university had an understanding of basic language concepts in most areas. The application of this knowledge is not as strong. All five focus group participants acknowledged the need for early intervention for students with dyslexia and those who are struggling to learn to read. There is a plethora of research regarding the importance of early intervention for students who struggle with learning to read, and there is research supporting the need for teacher education in this area. The current research suggests that universities are including more dyslexia information in their pre-service teacher training. While there is still a gap in application of knowledge, the gap in education appears to be

closing. Addressing how to gain practice in the application of this knowledge by the pre-service primary teacher will help to further close the gap.

Although the current study was one sampling from one university, when combined with other recent research, it can be generalized that pre-service primary teachers have a working knowledge of basic language concepts in some areas more than other areas. As well, pre-service primary teachers have an understanding of what dyslexia is and what traits a student with dyslexia might exhibit in the classroom. However, there is still work to be done regarding early identification for students with dyslexia and for struggling readers. Receiving appropriate intervention and beginning it early in a student's academic career is key to their success. With Texas's recent passage of legislation regarding testing for dyslexia at the end of students' kindergarten and first grade years, this will help with catching students at an early age when intervention is key. As well, the requirement for Texas Education Agency to compile a list of professional development opportunities regarding teaching students with dyslexia in the general education classroom, teachers will be more versed in what to look for and how to address the needs of students with dyslexia.

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Youman, M., & Mather, N. (2013). Dyslexia laws in the USA. *Annals of Dyslexia*, 63(2), 133-153. doi: 10-1007/s11881-012-0076-2

## APPENDIX A



## Institutional Review Board Committee

Date: July 20, 2017  
To: Mary Kay Sherman  
From: Institutional Review Board Committee  
RE: Notification of IRB Action

Protocol Title: Pre-Service Teachers' Perceptions and Knowledge of Dyslexia  
and Basic Language Concepts

---

This memorandum is notification that the project referenced above has been reviewed and APPROVED as indicated in Federal regulatory statutes 45CFR46.

**PLEASE NOTE:**

Upon Approval, the research team is responsible for conducting the research as stated in the exempt application reviewed by the IRB which shall include using the most recently submitted Informed Consent/Assent Forms (Information Sheet) and recruitment materials.

*Any* changes to the application may cause this project to require a different level of committee review.

Should any changes need to be made, please submit a Modification Form.

Taiya Fabre

Dr. Taiya Fabre  
Chair, Institutional Review Board Committee

## APPENDIX B

Re: Permission to use survey

Emily Cantrell <aggieemily@tamu.edu>

Fri 3/31/2017 3:04 PM

To: Sherman, Mary Kay <shermanmk@hbu.edu>;

ccmjoshi@tamu.edu <mjoshi@tamu.edu>; washburn@binghamton.edu <washburn@binghamton.edu>;

2 attachments (148 KB)

Survey of Basic Language Constructs.docx; BLC\_survey\_answerkey.docx;

Hi Mary Kay,

Thank you for your email. You are welcome to use the survey and adjust it as needed, with proper acknowledgement to the authors. Attached is the complete survey, along with answer key.

All the best in your research endeavors,  
Emily

On Thu, Mar 30, 2017 at 7:15 PM, Sherman, Mary Kay <shermanmk@hbu.edu> wrote:

Good Evening, Dr. Binks-Cantrell, Dr. Joshi, and Dr. Washburn.

I am a doctoral student at Houston Baptist University in Houston, Texas. My research is to examine novice primary teachers' perceptions regarding dyslexia and the teachers' knowledge of phonological awareness, phonemic awareness, and phonics.

In reviewing the current literature, I read your study, Validation of an Instrument for Assessing Teacher Knowledge of Basic Language Constructs of Literacy, in May, 2012 Annals of Dyslexia.

I am asking for permission to use your survey from that study in conducting my research. If permission is granted, would you please forward a copy of the complete survey? If necessary, may I also have permission to adjust some of the questions or wording to fit my specific research?

Thank you. I appreciate your consideration.

Mary Kay Sherman

NOTICE: This e-mail message and all attachments transmitted with it may contain legally privileged and confidential information intended solely for the use of the addressee. If the reader of this message is not the intended recipient, you are hereby notified that any reading, dissemination, distribution, copying, or other use of this message or its attachments is strictly prohibited. If you have received this message in error, please notify the sender immediately by telephone (281-649-3000), and delete this message and all copies and backups thereof. Thank you.

--

Emily Binks-Cantrell '02, Ph.D.  
Clinical Assistant Professor  
Department of Teaching, Learning, and Culture  
College of Education and Human Development  
Texas A&M University  
<http://tlac.tamu.edu>

Thou, who hast given me eyes to see and love this sight so fair, give me a heart to find out Thee, and read Thee every where. - Keble

## APPENDIX C

### Participant Information Letter and Consent Form

Dear Participant:

I invite you to participate in a research study regarding pre-service teachers and their perceptions regarding working with students who have or may have dyslexia as well as pre-service teachers' knowledge of basic language concepts.

I am currently enrolled in the Doctor of Education at Houston Baptist University in Houston, Texas and am in the process of writing my Doctoral dissertation. The purpose of this research is to examine pre-service teacher's perceptions and knowledge regarding dyslexia and basic language concepts. The questionnaire you will be completing has been designed to collect information in these areas.

Additionally, a focus group will be convened to discuss in detail specific questions related to this research. This is also voluntary. It will involve a group interview of approximately 20-25 minutes in length and will take place in a mutually agreed upon location, date, and time. You may decline to answer any of the interviewer's questions if you so wish. All information you provide is considered completely confidential. Your name will not appear in any dissertation or report resulting from this study, however, with your permission, confidential quotations may be used in the dissertation or subsequent publications.

Your participation in this research project is completely voluntary. You may decline altogether, leave blank any questions on the survey you do not wish to answer, or choose not to answer any questions in the focus group. There are no known risks to participation in this research beyond those encountered in everyday life. Your responses will remain completely confidential. Data from this research will be kept under lock and key during the duration of the research and my participation in the Doctoral program. After that, data will be destroyed. All data compiled will be reported only as a collective combined total. No one other than the researcher will see individual answers on the questionnaire.

If you agree to participate in this research, please sign the attached consent form and answer the questions on the questionnaire as best you can. It should take approximately 10 to 15 minutes to complete. I will collect the questionnaire as it is completed.

If you have any questions regarding this research, feel free to contact me at [shermanmk@hbu.edu](mailto:shermanmk@hbu.edu). You may also contact my dissertation committee chairman, Dr. X at Houston Baptist University.

Thank you for your assistance in this important endeavor. I appreciate your time.

Mary Kay Sherman

Doctoral Student

## CONSENT FORM

I agree to participate in a study being conducted by Mary Kay Sherman, a student in the Doctor of Education at Houston Baptist University. I have made this decision based on the information I have read in the Consent Letter, and I have had the opportunity to receive any additional details I wanted about the study. I understand that I may withdraw this consent at any time without penalty by telling the researcher.

I also understand that this research has been reviewed and approved by the Internal Review Board at Houston Baptist University, and that I may contact Houston Baptist University, School of Education if I have any concerns or comments resulting from my involvement in this study.

In regards to the focus group, I am aware that I am being recorded to ensure an accurate representation of my responses. I am also aware that excerpts from the recording may be included in the dissertation and/or publications to come from this research, with the understanding that the quotations will be confidential.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher. I understand there is no compensation for my participation in completing the survey.

This research had been reviewed by and cleared through the Internal Review Board at Houston Baptist University. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Houston Baptist University, School of Education.

1. With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.  
                   \_\_\_\_\_ YES        \_\_\_\_\_ NO
2. Upon completion of this survey, are you willing to participate in a focus group?  
                   \_\_\_\_\_ YES        \_\_\_\_\_ NO
3. If you checked YES to participate in the focus group, please provide an email to be contacted to arrange a time and place.

\_\_\_\_\_

Participant's Name (print) \_\_\_\_\_

Participant's Signature \_\_\_\_\_ Date \_\_\_\_\_

## CONSENT FORM FOR FOCUS GROUP

I have read the information presented in the information letter about this study being conducted by Mary Kay Sherman, a student in the Doctor of Education in Executive Educational Leadership program at Houston Baptist University. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

In regards to the focus group, I am aware that I am being recorded to ensure an accurate representation of my responses. I am also aware that excerpts from the recording may be included in the dissertation and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

There will be no monetary compensation for participation. However, food and coffee or soft drinks will be provided that is appropriate for the time of day.

This research had been reviewed by and cleared through the Internal Review Board at Houston Baptist University. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Houston Baptist University, School of Education.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

\_\_\_\_\_ YES \_\_\_\_\_ NO

I agree to be recorded.

\_\_\_\_\_ YES \_\_\_\_\_ NO

I agree to the use of anonymous quotations in the dissertation or publications that come from this research.

\_\_\_\_\_ YES \_\_\_\_\_ NO

Participant's Name (print) \_\_\_\_\_

Participant's Signature \_\_\_\_\_ Date \_\_\_\_\_

If you would like to have a copy of the transcript from this discussion, please include your email below. You will have the opportunity to clarify any comments or change any statements.

\_\_\_\_\_

**APPENDIX D****Survey of Basic Language Constructs**

Evaluate your knowledge in the following areas by putting an X in front of the word you feel best describes your level of understanding.

**1. Phonemic Awareness**

\_\_\_ MINIMAL    \_\_\_ MODERATE    \_\_\_ VERY GOOD    \_\_\_ EXPERT

**2. Phonics**

\_\_\_ MINIMAL    \_\_\_ MODERATE    \_\_\_ VERY GOOD    \_\_\_ EXPERT

**3. Fluency**

\_\_\_ MINIMAL    \_\_\_ MODERATE    \_\_\_ VERY GOOD    \_\_\_ EXPERT

**4. Vocabulary**

\_\_\_ MINIMAL    \_\_\_ MODERATE    \_\_\_ VERY GOOD    \_\_\_ EXPERT

**5. Comprehension**

\_\_\_ MINIMAL    \_\_\_ MODERATE    \_\_\_ VERY GOOD    \_\_\_ EXPERT

**6. Children's Literature**

\_\_\_ MINIMAL    \_\_\_ MODERATE    \_\_\_ VERY GOOD    \_\_\_ EXPERT

**7. Teaching literacy skills to students with dyslexia**

\_\_\_ MINIMAL    \_\_\_ MODERATE    \_\_\_ VERY GOOD    \_\_\_ EXPERT

**8. Using assessments to inform reading instruction**

\_\_\_ MINIMAL    \_\_\_ MODERATE    \_\_\_ VERY GOOD    \_\_\_ EXPERT

Put an X in front of the best answer for questions 9 – 18.

**9. A phoneme refers to:**

- a single letter.
- a single speech sound.
- a single unit of meaning.
- a grapheme.
- no idea

**10. If tife is a word, the letter "i" would probably sound like the "i" in:**

- if
- beautiful
- find
- ceiling
- sing
- no idea

**11. A combination of two or three consonants pronounced so that each letter keeps its own identity is called:**

- silent consonant
- consonant digraph
- diphthong
- consonant blend
- no idea

12. How many speech sounds are in the following words? For example, the word "cat" has 3 speech sounds 'k'- 'a'- 't'. Speech sounds do not necessarily equal the number of letters.

\_\_\_\_\_ box

\_\_\_\_\_ grass

\_\_\_\_\_ ship

\_\_\_\_\_ moon

\_\_\_\_\_ brush

\_\_\_\_\_ knee

\_\_\_\_\_ through

13. What type of task would the following be? "Say the word 'cat.' Now say the word without the /k/ sound."

\_\_\_\_\_ blending

\_\_\_\_\_ rhyming

\_\_\_\_\_ segmentation

\_\_\_\_\_ deletion

\_\_\_\_\_ no idea

14. A "soft c" is in the word:

- Chicago
- cat
- chair
- city
- none of the above
- no idea

15. Identify the pair of words that begins with the same sound:

- joke-goat
- chef-shoe
- quiet-giant
- chip-chemist
- no idea

The next 2 items involve saying a word and then reversing the order of the sounds. For example, the word "back" would be "cab."

16. If you say the word, and then reverse the order of the sounds, ice would be:

- easy
- sea
- size
- sigh
- no idea

17. If you say the word, and then reverse the order of the sounds, enough would be:

\_\_\_\_\_ fun

\_\_\_\_\_ phone

\_\_\_\_\_ funny

\_\_\_\_\_ one

\_\_\_\_\_ no idea

18. All of the following nonsense words have a silent letter, except:

\_\_\_\_\_ bamb

\_\_\_\_\_ wrin

\_\_\_\_\_ shipe

\_\_\_\_\_ knam

\_\_\_\_\_ phop

\_\_\_\_\_ no idea

19. For each of the words on the left, determine the number of syllables and the number of morphemes. (*Please be sure to give both the number of syllables and the number of morphemes, even though it may be the same number.*)

	Number of Syllables	Number of Morphemes
<b>disassemble</b>		
<b>heaven</b>		
<b>observer</b>		
<b>spinster</b>		
<b>pedestal</b>		
<b>frogs</b>		
<b>teacher</b>		

Put an X in front of the best answer for questions 20 – 27.

20. Which of the following words has an example of a final stable syllable:

\_\_\_\_\_ wave

\_\_\_\_\_ bacon

\_\_\_\_\_ paddle

\_\_\_\_\_ napkin

\_\_\_\_\_ none of the above

\_\_\_\_\_ no idea

21. Which of the following words has 2 closed syllables:

- wave
- bacon
- paddle
- napkin
- none of the above
- no idea

22. Which of the following words contains an open syllable:

- wave
- bacon
- paddle
- napkin
- none of the above
- no idea

23. Phonological awareness is:

- the ability to use letter-sound correspondences to decode.
- the understanding of how spoken language is broken down and manipulated.
- a teaching method for decoding skills.
- the same as phonics.
- no idea

**24. Phonemic awareness is:**

the same as phonological awareness.

the understanding of how letters and sounds are put together to form words.

the ability to break down and manipulate the individual sounds in spoken language.

the ability to use sound-symbol correspondences to read new words.

no idea

**25. What is the rule that governs the use of 'c' in the initial position for /k/:**

'c' is used for /k/ in the initial position before e, i, or y

the use of 'c' for /k/ in the initial position is random and must be memorized

'c' is used for /k/ in the initial position before a, o, u, or any consonant

none of the above

no idea

26. What is the rule that governs the use of 'k' in the initial position for /k/:

\_\_\_\_\_ 'k' is used for /k/ in the initial position before e, i, or y

\_\_\_\_\_ the use of 'k' for /k/ in the initial position is random and must be memorized

\_\_\_\_\_ 'k' is used for /k/ in the initial position before a, o, u, or any consonant

\_\_\_\_\_ none of the above

\_\_\_\_\_ no idea

27. A morpheme refers to:

\_\_\_\_\_ a single letter.

\_\_\_\_\_ a single speech sound.

\_\_\_\_\_ a single unit of meaning.

\_\_\_\_\_ a grapheme.

\_\_\_\_\_ no idea

**APPENDIX E****Basic Language Constructs Survey Answer Key**

*Correct answers indicated with underline. Each item is scored as either correct (1) or incorrect (0). Each answer from #12 and #19 is marked as correct (1) or incorrect (0).*

9. A phoneme refers to

- a single letter.
- a single speech sound.
- a single unit of meaning.
- a grapheme.
- no idea

10. If tife is a word, the letter "i" would probably sound like the "i" in:

- if
- beautiful
- find
- ceiling
- sing
- no idea

11. A combination of two or three consonants pronounced so that each letter keeps its own identity is called:

- silent consonant
- consonant digraph
- diphthong
- consonant blend
- no idea

12. How many speech sounds are in the following words? For example, the word "cat" has 3 speech sounds 'k'- 'a'- 't'. Speech sounds do not necessarily equal the number of letters.

- 4      box
- 4      grass
- 3      ship
- 3      moon
- 4      brush
- 2      knee
- 3      through

13. What type of task would the following be? "Say the word 'cat.' Now say the word without the /k/ sound."

- blending
- rhyming
- segmentation
- deletion
- no idea

14. A "soft c" is in the word:

- Chicago
- cat
- chair
- city
- none of the above
- no idea

15. Identify the pair of words that begins with the same sound:

- joke-goat
- chef-shoe
- quiet-giant
- chip-chemist
- no idea

(The next 2 items involve saying a word and then reversing the order of the sounds. For example, the word "back" would be "cab.")

16. If you say the word, and then reverse the order of the sounds, ice would be:

- easy
- sea
- size
- sigh
- no idea

17. If you say the word, and then reverse the order of the sounds, enough would be:

- fun
- phone
- funny
- one
- no idea

18. All of the following nonsense words have a silent letter, except:

- bamb
- wrin
- shipe
- knam
- phop
- no idea

19. For each of the words on the left, determine the number of syllables and the number of morphemes. (**Please be sure to give both the number of syllables and the number of morphemes, even though it may be the same number.**)

	# of syllables	# of morphemes
disassemble	<u>4</u>	<u>3</u>
heaven	<u>2</u>	<u>1</u>
observer	<u>3</u>	<u>3</u>
spinster	<u>2</u>	<u>2</u>
pedestal	<u>3</u>	<u>2</u>
frogs	<u>1</u>	<u>2</u>
teacher	<u>2</u>	<u>2</u>

20. Which of the following words has an example of a final stable syllable?

- wave
- bacon
- paddle
- napkin
- none of the above
- no idea

21. Which of the following words has 2 closed syllables?

- wave
- bacon
- paddle
- napkin
- none of the above
- no idea

22. Which of the following words contains an open syllable?

- wave
- bacon
- paddle
- napkin
- none of the above
- no idea

23. Phonological awareness is:

- the ability to use letter-sound correspondences to decode.
- the understanding of how spoken language is broken down and manipulated.
- a teaching method for decoding skills.
- the same as phonics.
- no idea

24. Phonemic awareness is:

- the same as phonological awareness.
- the understanding of how letters and sounds are put together to form words.
- the ability to break down and manipulate the individual sounds in spoken language.
- the ability to use sound-symbol correspondences to read new words.
- no idea

25. What is the rule that governs the use of 'c' in the initial position for /k/?

- 'c' is used for /k/ in the initial position before e, i, or y
- the use of 'c' for /k/ in the initial position is random and must be memorized
- 'c' is used for /k/ in the initial position before a, o, u, or any consonant
- none of the above
- no idea

26. What is the rule that governs the use of 'k' in the initial position for /k/?

- 'k' is used for /k/ in the initial position before e, i, or y
- the use of 'k' for /k/ in the initial position is random and must be memorized
- 'k' is used for /k/ in the initial position before a, o, u, or any consonant
- none of the above
- no idea

27. A morpheme refers to:

- a single letter.
- a single speech sound.
- a single unit of meaning
- a grapheme
- no idea

**APPENDIX F****Interview Protocol**

What is your year classification at HBU? (Junior, Senior, etc.)

What grade level do you hope to teach?

Describe classes you have had to prepare you to teach reading.

What do you know about dyslexia?

How do you feel about working with a student who is dyslexic?

What characteristics might a student with dyslexia show in the classroom?

Do you feel prepared to work with students who are dyslexic?

Describe what effective instruction for students with dyslexia might include.

Do students with dyslexia learn in the same way as that of typical learners?

## CURRICULUM VITAE

**Mary Kay Sherman**  
**marykaysherman@yahoo.com**

### EDUCATION

Doctor of Education, Executive Educational Leadership  
Houston Baptist University, Expected May 2019  
Concentrations: Leadership, Dyslexia, Teaching Reading  
Dissertation: Preservice Teachers' Perceptions and Knowledge of Dyslexia and Basic Language Concepts  
Dissertation Advisors: Angie Durand, Ed.D., Dissertation Chairperson; Regina Boulware-Gooden, Ph.D.; Julie Fernandez, Ed.D.; Darby Hawley, Ph.D., Dianne Reed, Ed.D.

Master of Education, Reading Specialist  
University of St. Thomas, 2010  
Concentration: Reading, Dyslexia  
Thesis: Does Direct Teaching of Phonics Improve Reading Fluency in Dyslexic Students  
Thesis Advisor: Regina Boulware-Gooden, Ph.D.

Bachelor of Arts, Multidisciplinary Studies  
Houston Baptist University, 2003  
Majors: Early Childhood-4, Social Studies Composite

### HONORS AND AWARDS

Guild Scholar  
Houston Baptist University, 2017-2019

Secretary  
Doctoral Organizations for Community and Service  
Houston Baptist University, 2016-2018

## **PROFESSIONAL EXPERIENCE**

The Briarwood School - Houston, Texas  
August 2003 – Present

The Briarwood School is a private school serving students with diagnosed learning disabilities. Lower School admits children for kindergarten through sixth grade. It is fully accredited by AdvancEd and affiliated with Council for Exceptional Children, Houston Association of Independent Schools, International Dyslexia Association, International Dyslexia Association-Houston Branch, Learning Disabilities Association, and National Association of Private School Education Centers

### August 2015 – Present: Lead CEI Lab Facilitator

Lead facilitator for 3<sup>rd</sup> through 6<sup>th</sup> grade students in the Creative Education Institute reading program, an individualized computer program designed to integrate auditory and visual processing through multi-sensory learning and repetition; requires constant teacher interaction and continual teacher assessment of student progress, adjusting the program as necessary for optimal student success providing individualized instruction

### August 2014 – Present: K-6 Reading Curriculum Advisor

Work with reading teachers in all areas related to curriculum, including training, implementation, and providing supplemental material; conduct formal and informal teacher assessments

### August 2010 – Present: Resource Team Leader; CORE Team Member; Applicant Screener

Team Leader – supervisor responsibilities for three teachers; prepare agenda and conduct weekly meetings; liaison between the resource team and administration; ensure timeliness of reports and projects from resource team to administration; manage budget for resource team

CORE Team Member – teacher representative on administration-selected committee who advise administration

Applicant Screener – determine and compile materials to be used for applicants to the school; assess applicants for admission to the school and make recommendations on their acceptance; advise other screeners during the screening process when necessary

### August 2005 – July 2015: K-5 Resource Teacher

Provided instruction and remediation in the areas of phonics, reading, and math at the 2<sup>nd</sup> and 3<sup>rd</sup> grade levels for mostly non-readers; provided instruction and enrichment in Math at the 4<sup>th</sup> and 5<sup>th</sup> grade levels for advanced math students; determined specific needs of each student and created lesson plans and work

tailored to each student's needs; assisted in CEI Reading program; used various Neuhaus Education Center programs

August 2004 – July 2005: 2<sup>nd</sup>/3<sup>rd</sup> Grade Classroom Teacher

Instruction, remediation, and enrichment in all academic areas of a mixed level classroom; designed lesson plans and created homework that considered the needs of each child

August 2003 – July 2004: Lower School Permanent Substitute Teacher

Assisting classroom teachers in academic areas as needed in Kindergarten through sixth grade; substituting as classroom teacher during teacher absences in kindergarten through sixth grade

Committees and Additional Responsibilities:

Team member of Southern Association of Colleges and Schools accreditation process; *DRP* (*Degrees of Reading Power*) Manager; *Great Leaps* Reading Fluency Manager, including student placement in the program and organizing parent volunteers; mentor to a student teacher; attend and participate in parent conferences

## **CERTIFICATIONS**

T-TESS (Texas Teacher Evaluation and Support System) Certificate, Expires July 2019

AEL (Advancing Educational Leadership) Certificate, Expires June 2019

Reading Specialist EC-12, Expires January 2021

Generalist EC-4, Expires January 2021

## CONFERENCES – PRESENTATIONS

*Proposal Submitted:* February 6-8, 2019. Southwest Educational Research Association 42<sup>nd</sup> Annual Conference. *Pre-Service Primary Teachers' Perceptions and Knowledge of Dyslexia and Basic Language Concepts.*

February 24, 2018. Texas Association for Literacy Education. *Comparing the Needs of ELL Students and Students with Dyslexia.*

February 24, 2018. Texas Association for Literacy Education. *Promoting Reading Fluency by Applying the Six Syllable Types to Tackle Unknown Words.*

April 22, 2017. Ninth Annual Teaching and Learning Symposium. *Dissertation Overview: Chapters 1 and 2.*

July 20, 2017. Inspire Leadership Series. *Reading and Leading: A Glance at ESL and Dyslexia*

October 6, 2017. Texas Council of Professors of Educational Administration, Graduate Research Exchange. *Dissertation Overview: Chapters 1, 2, and 3.*

## CONFERENCES – ATTENDED

February 6-8, 2019. Southwest Educational Research Association, San Antonio, TX. 42<sup>nd</sup> SERA Annual Meeting

October 13, 2018. Houston Branch – International Dyslexia Association, Houston, TX. *HBIDA Fall Symposium*

June 23, 2018. Inaugural Leadership Summit of University of St. Thomas, Houston, TX. *Ethics, Equity, and Empowerment: Striving for a Fuller Humanity*

April 11, 2018. Neuhaus Education Center, Houston, TX. *Dyslexia: The Explanation and Potential Solution to our Education Crisis*

March 22, 2018. University of St. Thomas, Houston, TX. *The Ethics of Special Education Leadership: Doing What is Right for the Student*

March 3, 2018. Houston Branch - International Dyslexia Association, Houston, TX. *HBIDA 22<sup>nd</sup> Annual Conference*

**PUBLICATIONS**

Sherman, M. K. (2018). Using the six syllable types to teach word attack skills. In L. A. Sharp, E. Hendrix, & L. M. Juarez (Eds.), *Texas Association for Literacy Education, Volume 5: Connections in the Community: Fostering Partnerships Through Literacy* (p. 98-102). Retrieved from <http://www.texasreaders.org/yearbooks.html>

**MEMBERSHIPS AND AFFILIATIONS**

International Dyslexia Association  
Houston Branch of the International Dyslexia Association  
International Literacy Association  
Texas Association of Literacy Educators  
Texas Council of Women School Executives  
Society for Scientific Study of Reading  
American Educational Research Association  
Doctoral Organization for Community and Service  
Position held: Secretary, 2016 - 2018