

Fall 2021

The Role of the School-Based Speech-Language Pathologist In The Identification, Assessment, and Remediation of Dyslexia In Secondary Students

Lisa Marie Alves

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THE ROLE OF THE SCHOOL-BASED SPEECH-LANGUAGE PATHOLOGIST IN
THE IDENTIFICATION, ASSESSMENT, AND REMEDIATION OF DYSLEXIA IN
SECONDARY STUDENTS

by

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Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctorate of Education in

Curriculum and Instruction

College of Education

University of South Carolina

2021

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DEDICATION

First and foremost, I would like to thank my family beginning with my father who has inspired me even after his death. His strong work ethic, patience, and kindness to everyone continue to bring me motivation to do and be better. I thank my mother who taught me to be brave and that it is never too late to try new skills.

To my sisters, Jean, Kathy, and Carolyn, thank you for always looking out for me. You were all a great support system to me throughout this dissertation process, providing me with advice and guidance. To my brother Stephen who died too young, thank you for being a kindhearted older brother. I miss you very much.

To my children, Brittany and Jared who make me so proud, thank you for making motherhood so easy. Being your mother was the best job I ever had and ever will have. You have become two successful young adults and I look forward to being a part of your exciting future.

Thank you to those in my workplace who contributed to my research. I appreciate the time and thought you gave me throughout this process.

ACKNOWLEDGEMENTS

Thank you to my committee chair, Dr. Suha Tamim, for your patience, guidance, and wisdom throughout this dissertation process. Your positivity and kindness provided me with self-assurance when needed and made this experience much more pleasurable.

I would like to thank my committee members, Dr. Leigh D'Amico, Dr. Linda Silvernail, and Dr. Vic Oglan, for your time, effort, and expertise. Your knowledgeable feedback strengthened my end product.

ABSTRACT

The purpose of this mixed methods action research study was to increase the awareness and knowledge of secondary school professionals on dyslexia, including the role of the school-based speech-language pathologist. Two research questions guiding the quantitative data collection centered on the impact of a PowerPoint dyslexia training on the participants' knowledge and attitudes about dyslexia in the schools. In addition, two qualitative research questions guided the study involving the participants' perceptions of the role of speech-language pathologists in a dyslexia protocol, and how to implement a dyslexia protocol in secondary-level schools. The results of the study indicate that the training session increased the participants' knowledge about dyslexia, increased the perceptions that dyslexia should be addressed in the schools, and increased the perceptions that speech-language pathologists play a significant role in identifying, assessing, and remediating students with dyslexia. Suggestions of how a dyslexia protocol could be implemented in secondary-level schools were also included in the qualitative data findings.

Keywords: action research, dyslexia, speech-language pathologist, secondary school

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CHAPTER 1

INTRODUCTION

Many issues face our nation's educational system but low literacy rates are of major concern. South Carolina is ranked 47th in literacy (Bowers, 2020), with only 34% of students reading at grade level by the fourth grade (Greenho, 2016). A conventional literacy definition refers to the ability to read and write (Lonighan & Shanahan, 2009). For this paper, this is the definition that will be used for literacy. The early foundations of reading are critical. Reading proficiency by the fourth grade is a leading indicator of a student's success in earning a high school diploma due to the necessity of functional literacy abilities in most subject areas such as science, English, and social studies (Greenho, 2016; Fischer & Syverson, 2020). Limited literacy skills not only affect the student's academic success but may additionally impact their social and emotional well-being (McArthur & Castles, 2017).

Dyslexia is the most prevalent type of learning disability, affecting approximately 20 percent of the general public worldwide (Shaywitz & Shaywitz, 2020). Dyslexia is characterized by difficulty with word reading with a common secondary consequence of decreased reading comprehension due to reduced reading experience (Lindstrom, 2019; SCDE, 2020). Despite the elevated occurrence, there is a reluctance to use the term *dyslexia* when describing the learning impairment in school documentation. Without a

specific diagnosis, targeted interventions that are necessary to address the specific needs of individuals with dyslexia may not be implemented (Hulme & Snowling, 2017).

Research in cognitive psychology and neuroscience has presented scientific findings to support the role of the speech-language pathologist in the assessment and intervention of reading disorders including dyslexia (Ebert et. al. 2016; Navas et. al., 2017). Students with language-based learning disorders like dyslexia often are initially diagnosed with spoken language delays (Block, 2018). Research suggests there is a link between reading impairments, such as dyslexia, and speech sound disorders (Cabbage et al., 2018; Catts, 1993; Janus et al., 2017). Language disorders are defined as an impairment with “comprehension and /or use of a spoken, written, and/or other communication symbol system” (ASHA, n.d.). Reading impairments are therefore a subset of language impairments (Catts & Hogan, 2003) and dyslexia is a subset of reading impairments (Berninger et al., 2015; Lindstrom, 2018) (see figure 1.1). A typical caseload of SLPs includes a majority of students with various language disorders (ASHA, 2018). It is a natural solution to include school-based SLPs as team members working with students affected by literacy delays.

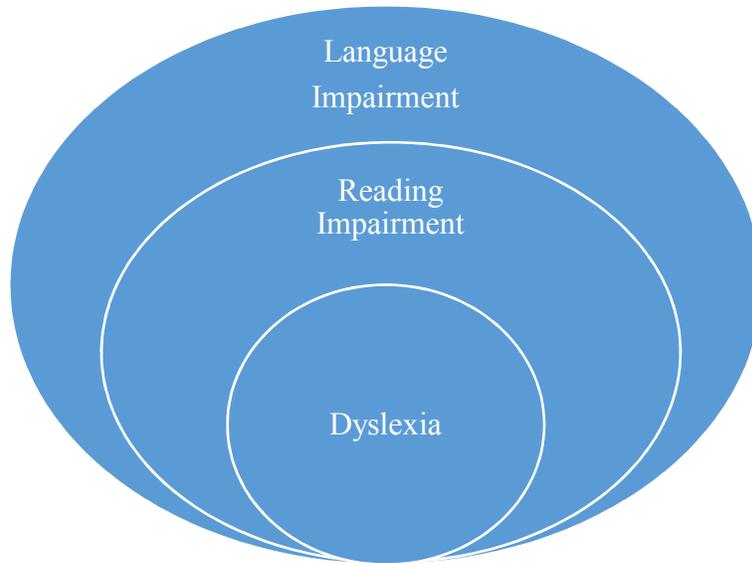


Figure 1.1 *Dyslexia Subset Model*

However, there is some reluctance from specialists and educators to realize the importance of the SLP's role in this collaboration. In my work experience, if a student is suspected of learning disabilities, the school psychologist administers reading and writing tests, and the resource teacher provides instruction for students who qualify for special education services. It is considered their domain with everyone set in their roles. The school systems are very compartmentalized: “that’s the speech-language pathologist’s job”, “that’s the special education teacher’s job”, etc. Figure 1.2 displays my district’s current system.

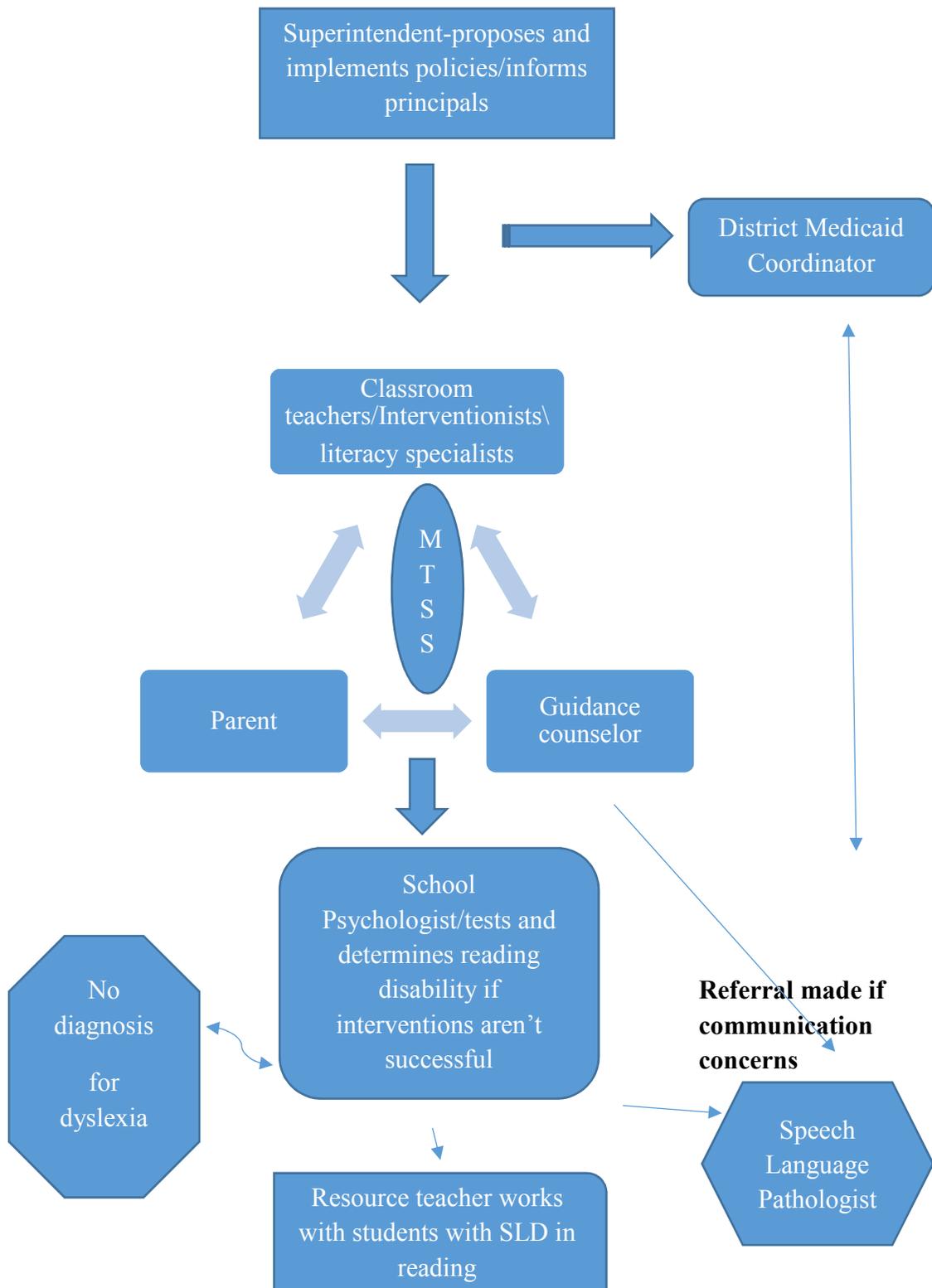


Figure 1.2 *District's Current System*

Recently, I was in an individualized education program (IEP) meeting, and the parent discussed how her child received private speech services (in addition to the speech services I provided for her child at school). She wanted the team's opinion on whether she should continue with the outpatient speech-language pathologist (SLP) who focused on dyslexia or change back to the SLP who focused on language therapy. When I asked if her child (my student) was diagnosed with dyslexia, the administrator sitting in the meeting stated emphatically, "There is no test for dyslexia." Before I could reply to the statement, another team member chimed in with, "speech therapists aren't supposed to work on reading!" Not wanting to get sidetracked, I redirected the discussion back to the mother's question since the meeting was supposed to be coming to a close. These responses by my colleagues reaffirmed my choice to do this research.

There are many misconceptions about dyslexia including the role that a school-based speech-language pathologist can play in assessing and remediating the disorder. I would like to feel confident and competent in my part of a collaborative team to help secondary students with dyslexia. Using mixed methods research with school personnel involved in this team effort, I hoped to dispel some myths and misconceptions about dyslexia and the speech-language pathologists' role in the identification and remediation of this pervasive reading impairment. By providing a training on dyslexia with secondary-level school psychologists, special educators, and a speech-language pathologist, followed by semi-structured interviews, I wished to study the impact on the knowledge and attitudes of the participants about dyslexia to begin a transformation of our district's current system of helping students with the reading impairment.

Problem of Practice

Without having a specific diagnosis of dyslexia, students are not receiving the differentiated instruction that they require to be successful in the classroom. Providing a training to increase knowledge and awareness of the identification, assessment, and remediation of dyslexic students at the secondary level using appropriate team members, including speech-language pathologists, was the aim of this action research study. Understanding the complexities of my research setting to facilitate change and improve students' reading success required practitioner inquiry.

One of the most disheartening aspects of my job as a school-based speech-language pathologist is watching students struggle with reading. I often incorporate reading and writing activities into my therapy sessions because I feel they are beneficial for the students to generalize the skills they are working on into the general education setting. Sometimes literacy skills are directly written in my speech goals (e.g. [The student] will increase /r/ production at the reading level from 50% to 80% accuracy...). I witness my students' frustration, fear, and anxiety over reading aloud even when it is just with me. The look of dread on the students' faces when I ask them to write even a single paragraph, which I often do when working on articulation, language, and fluency goals, is almost unbearable. These students are in middle school and are reading several grade levels below their peers. Students at the secondary level (middle and high school) are expected to be reading to learn, not learning to read.

Literacy skills should not be isolated from speech therapy because reading and writing are parts of language. Addressing these skills is part of a speech-language

pathologist's (SLP's) scope of practice and is beneficial in skill transference to the classroom setting. The special education teachers who work with me realize I incorporate reading and writing into my therapy practice because we not only have had conversations about it, but also they witness the IEP goals I write. The teachers often remark, "You do more with reading and writing than any other speech pathologist I've worked with." I do not believe this to be a criticism of other SLPs for I think we all have our niche. Often our students have many different skill delays and we have to use our professional judgment to develop appropriate treatment plans. However, I believe that SLPs have unique training to help students with literacy delays, including dyslexia. Many of my fellow district speech-language pathologists do not share this belief. In a monthly speech interaction meeting two years ago when the district coordinator mentioned a dyslexia mandate was on the horizon and SLPs would be involved, there was a collective gasp followed by grumbles in the room from most of the clinicians.

In response to South Carolina law Act 213 signed in March 2018, which has a central component of identifying and providing interventions to students with reading impairments including dyslexia, the State Department of Education published *The South Carolina Dyslexia Handbook: A Guide to Early Literacy Development & Reading*. This sixty-nine-page document consists primarily of a description of the Multi-Tiered System of Supports (MTSS) implementation with a brief section on identification, assessment, and intervention involving students with dyslexia. In contrast to dyslexia handbooks published by the State Departments in California (CDE, 2018) and New Jersey (NJSDE, 2017) which designate dyslexia team members including speech-language pathologists, the SC handbook does not provide role identification. However, the SCDE dyslexia

handbook will be used as an impetus for conversation and investigation into what can be done to facilitate change to identify and remediate dyslexic students.

An added component to this research study is the secondary school setting. For this paper, secondary schools will refer to middle and high schools, as defined by the U.S. Department of Education (U.S.D.E, 2008). Secondary students are expected to be reading to learn with foundational skills assumed, including phonological awareness. Content area instruction takes the place of explicit reading instruction. The students are expected to read fluently, have a good vocabulary, use higher-order thinking, and maintain sustained attention and motivation (Shanahan & Shanahan, 2008). Because students with reading disabilities including dyslexia don't enjoy reading because it is so arduous, they practice less which leads to decreased background knowledge and vocabulary skills. Scheduling at the secondary level is also an issue due to content area requirements causing rigidity. Finding time to provide the adequate frequency of instruction necessary to teach the foundational skills (Luizzo, 2017) that are lacking may prove difficult.

Specifying dyslexia in the diagnosis of specific learning disorders will bring forth a new dynamic in an already solidified assessment and treatment protocol of students with reading disabilities. It will require role restructuring and collaboration to include speech-language pathologists (SLPs). This may create an issue as school-based speech-language pathologists already have busy schedules. They are often responsible for demanding caseloads involving various communication disorders, serving two or more schools in their district. According to the American Speech-Language-Hearing

Association (ASHA), the average monthly caseload size of school-based SLPs working full time is 48. “Large caseloads limit the time available to the SLP for collaboration with teachers and other professionals” (ASHA, 2016). Another issue is that including SLPs in the protocol may cause resentment by specialists who already work in this domain such as reading interventionists, school psychologists, and special education teachers.

A focus on collaboration will be imperative to elicit role identification. Research suggests that a collaborative approach in assessment and remediation is deemed most successful with students with dyslexia (Berninger et al., 2015; Lindstrom, 2018). This collaboration will involve school psychologists, speech-language pathologists (SLPs), and special education teachers. Administrators will also need to provide professional development to assist the team members in the transition. Additionally, administrators must allow ample time for collaboration between specialists and teachers. However, before collaboration can begin, a reformed way of thinking needs to occur. A changed mindset starting with the use of the term *dyslexia*, the responsibility of the school in identification and remediation, and the role of the SLP in the process.

Investigations were necessary to adopt these new roles into a functioning collaborative system to be most effective. This research was justified to develop what is necessary and practical to put this new dynamic of dyslexia identification and remediation into action in the secondary school setting. With the added responsibilities, speech-language pathologists may have trepidation and reluctance to their new role. Other specialists and teachers may resist perceived intrusion on their territory. These

issues are relevant and required study to make for a smooth transition and a team approach to best suit the needs of the students. The first step in this change process was to increase knowledge and awareness about dyslexia with key professionals that would eventually be part of this team approach. The training provided in this research study aimed to increase knowledge to affect attitudes about the ability and the importance of identifying, assessing, and remediating dyslexia in the school setting with integral secondary level specialists, and the role of the speech-language pathologist in this process.

Theoretical Framework

Grant & Osanloo (2014) point out that “the theoretical framework is the blueprint to the entire dissertation...it serves as the guide on which to build and support your study...the foundation from which all knowledge is constructed... for a research study” (p.13). The selection of the theoretical framework should be purposeful as it is a reflection of the author’s individual beliefs and knowledge. Three theories will guide this action research study: the phonological model of dyslexia, neurodiversity, and the change theory.

Phonological Model

The phonological theory of dyslexia states that dyslexic individuals have a particular deficit “in the representation, storage, and evocation of speech sounds” resulting in the inability “to attend and manipulate linguistic sounds” which is crucial for encoding and decoding (Prestes & Feitosa, 2017, p.2). The central characteristic of most

studies on dyslexia is the deficit in phonological awareness, defined as the cognizance of speech sounds and the ability to reflect and manipulate the language structures (Baker et al., 2018). Catts et al. (2017) found that kindergarten students with a phonological deficit were five times more likely to be diagnosed with dyslexia in the second grade.

Neuroimaging studies have shown that dyslexics have a deficit in brain regions that affects their ability to process phonological interpretations of speech (Goswami, 2008; Sela et al., 2014).

Neurodiversity Paradigm

Recent neuroscience research has advanced our perception of dyslexia as an alternate circuitry in brain organization resulting in positive and negative attributes (Milne, 2005; Rentenbach & Prisolovsky, 2016). Dyslexics process language differently in the brain than typical readers (Xia et al, 2016). Neuroimaging of dyslexic children that have been provided intensive phonological remediation have documented changes in neural activity in the left hemisphere of the brain (Goswami, 2008). This strengthens the hypothesis that dyslexics require an alternative instructional approach with greater intensity (Goswami, 2008; Ferrer et al., 2015). The neurodiversity paradigm encompasses this research by embracing what is thought to be natural human variations. This theory does not underscore that weaknesses are present and need to be addressed. Rather the thought is to accentuate the positive versus the negative (Armstrong, 2015). By viewing dyslexia through this lens, the stigma of the “difference” will be decreased and alleviate the fears of using the term when identifying the students’ needs and providing the accommodations and instruction necessary to promote success.

Change Theory

Collaboration between the educational specialists (school psychologists, speech-language pathologists, and special education teachers) will be necessary to implement a successful transformation of the current assessment system of students with reading disabilities to include a specification of dyslexia and the treatment of those that qualify for services. This is a protocol change that involves many stakeholders that have become comfortable and content in their current roles. The protocol will involve a change in management and organization. Kurt Lewin, considered a pioneer of action research and site-based management (Herr & Anderson, 2015), proposed the three stages of the change theory: unfreeze, change, and refreeze (Lewin, 1951; Schein, 1999). The stakeholders will need to move from their comfort zones, change to a new way of thinking, and end with a new norm of reestablished comfort.

Using these theories, the professionals involved with the changes necessary to implement a new dynamic to include identifying, assessing, and treating students with dyslexia can transform the current system with the ultimate goal of increasing student performance and overall well-being.

Purpose of the Study

The purpose of this action research study was to determine the impact of a dyslexia training on the participant's knowledge and awareness of the school's role in the identification, assessment, and remediation of the impairment. This was accomplished by delivering a PowerPoint training on dyslexia and highlighting the SCDE dyslexia

handbook. Secondly, the role of the speech-language pathologist as a valuable member of the protocol will be included. Lastly, an investigation into how to implement a protocol to identify, assess, and remediate dyslexic students in a secondary setting will be discussed. By doing this research, I hope to help students identified with dyslexia in my setting receive the instruction and accommodations necessary for them to be successful readers.

Research Questions

The research questions guiding this study are as follows:

1. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' knowledge about identifying, assessing, and remediating students with dyslexia in schools?
2. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' attitudes about identifying, assessing, and remediating students with dyslexia in schools?
3. What are the secondary school specialists' perceptions about the speech-language pathologists' involvement in the protocol of identification, assessment, and remediation of dyslexia in schools?
4. What are the secondary school specialists' perceptions of how to implement a protocol to identify, assess, and remediate dyslexia in a secondary school setting?

Research Design

Action research allows the researcher to implement theory into their daily practice while using research to answer relevant questions arising from their setting. Mertler (2017) states that action research is composed of four steps: identifying a problem, data collection, data analysis, and developing an action plan. The findings can be directly applied to the researcher's setting "by understanding their students, solving problems, or developing new skills" (Efron & Ravid, 2013, p. 4).

This action research is based on a convergent mixed-methods approach (Creswell & Plano Clark, 2018) using pre-and post-surveys and follow-up interviews. The mixed methods approach was chosen to attempt to balance objectivity and subjectivity. This investigation first used a pre-survey to assess the secondary school psychologists', special education teachers', and speech-language pathologists' knowledge and attitudes about dyslexia in the schools. Second, a PowerPoint training about dyslexia with the SCDE Dyslexia handbook highlighted was given to the secondary school professionals. Following the training, a post-survey was administered. The pre-and post-surveys revealed the training's impact on the participant's knowledge and attitudes about dyslexia, including the role of the SLP and the schools in the identification and remediation of the impairment. Last, semi-structured interviews with the participants who volunteered for the task were utilized to gain further insight. After the results of the surveys had been disclosed with the interviewees, they answered the following questions:

1. What impact, if any, did the training have on your knowledge about the identification, assessment, and remediation of dyslexia in the schools?

2. How do these results affect your thoughts about the identification, assessment, and remediation of dyslexia in the schools?
3. How do you feel about SLPs being involved in the identification, assessment, and remediation of dyslexia in the schools?
4. How might we implement a dyslexia protocol in secondary schools?

Creswell & Plano Clark (2018) state that “qualitative data provide a detailed understanding of a problem while quantitative data provide a more general understanding” (p.8). The two research types have limitations separately, but in combination with each other can work effectively to bring a clearer understanding of the problem of practice.

Researcher Positionality

Positionality in a research study is the researcher’s relation to the individuals in the study and the setting. Positionality is a distinct aspect of the research study with difficult tasks such as deciding upon taking the stance of being an insider or outsider (Herr & Anderson, 2015). Positionality involves self-awareness and “taking into account the potential of one’s values, worldview, and life experience and their influence on the decisions made and actions taken during the research process” (Efron & Ravid, p. 57).

Currently, my role is that of an itinerant speech-language pathologist working in two middle schools and one high school in the city where I reside. Despite working as an itinerant speech-language pathologist, I have had the same base school for 13 of my 15 years in this school district. This means the majority of my time has been at this school. I have watched it transition to another location and change from an intermediate to a middle school. I have a history with most of the faculty and staff as many of them have

made the transition with me. Because I have worked with the participants in this study, I am an insider collaborating with other insiders (Herr & Anderson, 2015).

I also have a deep understanding of a speech-language pathologist's (SLP's) scope of practice, workload, and possible concerns with additional responsibilities being added. Although I am the only SLP at my base school, I have relationships and interactions with the other SLPs in the district. We have common experiences although our work environments may be quite different. Often when I have been assigned to other schools over the years, it has been to assist an SLP who has a large caseload. My assignment this year of working in all secondary settings has provided me the opportunity to collaborate and build a trusting relationship with the other secondary SLPs who work in the district. We have an implicit bond because our experiences are unique from those of the elementary and preschool SLPs.

Having an undergraduate degree in early childhood education, I know what is taught about literacy from a teacher's perspective. It provides me the opportunity to compare that knowledge to what I learned in my speech-language pathology graduate program. I realize the specialized instruction I have received in communication areas, including language, and acknowledge that this provides a unique aspect that a speech-language pathologist can contribute to students with literacy delays. This may lead to an implicit bias regarding the importance of the SLP in a future dyslexia protocol. Including another secondary SLP and other professionals was important in this research to mitigate this hidden bias.

I have always felt duplicity in my roles as a school-based speech-language pathologist. On the one hand, I am viewed as a teacher and required to hold a teaching certificate by the state department of education. Conversely, I am viewed as a specialist and required to earn and maintain a certificate of clinical competence by the American Speech-Language-Hearing Association and a license from the South Carolina Department of Labor, Licensing, and Regulation board. This role duality of teacher and SLP often manifests the feeling that I am an outsider in my base school as I am the only one in my position in the building. A recent example of this was the classification of SLPs in the “1a” group of COVID-19 vaccinations. Despite working in a school setting, I was able to get vaccinated before my teaching colleagues. I also follow a different evaluation system, adhere to separate guidelines for virtual services provided during the pandemic, and have an alternate schedule than the teachers. One educator, in particular, has remarked a few times, “You’re one of the office people so you get [advantages].” Even though she laughs as she says it, it makes me realize that at least in her eyes I am different.

Being a white, middle-class female originally from the northeast brings forth a variety of potential values, beliefs, and biases to be noted. I have had seen and unseen privileges and opportunities due to my circumstances. With these characteristics, I may bring preconceptions that affect my relationship with the research. Although my community has included more transient residents from other regions of the United States and countries in recent years, being from the northeast has made me an outsider in many ways. When I have questioned attitudes, behaviors, and procedures, one colleague and friend native to my current community has remarked, “Girl, you are in the deep South

now! That's the way things are done." My dialect also separates me from the majority and is something I consciously try to monitor as not to use regional vernacular.

Positionality is an important part of the process as Bourke (2014) revealed "The research by which I engage is shaped by who I am...I will be shaped by it, and by those with whom I interact" (p.7). I foresee that my personal, academic, and professional background will have a significant impact on my research study as both an insider and an outsider. I have a strong desire to provide evidence-based instruction for students who have been struggling with reading for years as they are now in middle school. I have witnessed their low self-esteem and defeated attitude towards reading and it saddens me deeply. By assisting these students, my school and community will reap the benefits as well. I want these students to find joy in reading as I have had the privilege to do.

Significance of the Study

This study aimed to increase dyslexia awareness of key personnel as a result of the recently published SC dyslexia handbook. Speech-language pathologists, special education teachers, and school psychologists may increase their knowledge about the prevalent reading disability and feel more comfortable in the expectations set forth by the SC State Department of Education. Action research was selected for this study due to my search for answers in my setting. This practitioner research is personal but may be transferable to other speech-language pathologists and specialists working with this student population.

Limitations

This research was conducted in one school district and primarily focused on a single school. Another limitation is the conciseness of the pretests/posttests, the PowerPoint training, and the semi-structured interviews. The brevity of the pre-survey and post-survey administered to the participants was to get a quick overview of general knowledge about dyslexia before and after the training. The training itself was brief because its' purpose was to give an introductory overview of dyslexia and possibly increase awareness and knowledge. The interviews with the sample of specialists that would be direct participants in a new protocol to assess and provide services to students with dyslexia were brief due to time constraints in their schedules. It is not intended to be generalizable or have external validity. Last, the researcher being an employee of the school district is noted as a limitation as this positionality may have affected the answers of the teachers and specialists.

Organization of Study

In this research study, the impact of a training on the identification, assessment, and remediation of dyslexia, including the role of speech-language pathologists, will be investigated in a secondary school setting. Chapter 2 will review current research on dyslexia, including the significance, reluctance to use the term, studies to support collaborative efforts in assessing and treating it, and specifics about testing and learning strategies. Chapter 3 will discuss the methodology, study design, and procedures for the research. Chapter 4 will describe the data analysis of the surveys and the semi-structured

interviews, including tables and graphs. Interpretation of the results and how they relate to the current literature will be discussed in Chapter 5.

Glossary of Terms

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 the growth of vocabulary and background knowledge. (International Dyslexia Association, 2017, p. 3).

Neurodiversity: a social justice model with a foundation that there is not one normal; embraces the differences of brain variations (Armstrong, 2011).

Phonological awareness: the awareness of the sound structure of a language and the ability to consciously analyze and manipulate this structure via a range of tasks, such as speech sound segmentation and blending at the word, onset-rime, syllable, and phonemic levels. (ASHA.org)<https://www.asha.org/Practice-Portal/Clinical-Topics/Written-Language-Disorders/Phonological-Processing/>

Phonology: the sound structure of a language including the rules of patterns, sound combinations and their mental representations (ASHA, n.d; Moats, 2000.)

Secondary schools: middle and high schools (U.S. Department of Education, 2008).

Specific Learning Disability: is “a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations.” It “does not include learning problems that are primarily the result of visual, hearing, or motor disabilities; of intellectual disability; of emotional disturbance; or of environmental, cultural, or economic disadvantage. <https://www.specialeducationguide.com/disability-profiles/specific-learning-disabilities/>

Speech-Language Pathologist: professionals who “work to prevent, assess, diagnose, and treat speech, language, social communication, cognitive-communication, and swallowing disorders in children and adults”. (<https://www.asha.org/Students/Speech-Language-Pathologists/>)

CHAPTER 2

LITERATURE REVIEW

Dyslexia is a prevalent learning disability that affects approximately 20% of the worldwide population (Adlof & Hogan, 2018; Shaywitz & Shaywitz, 2020). It is estimated that dyslexia constitutes 80% of all learning disabilities, involving about two million children receiving special education services (Shaywitz & Shaywitz, 2020; White et al., 2020). However, the incidence may be significantly higher due to the differences in how schools and research studies identify dyslexia (Shaywitz & Shaywitz, 2020). Without federal laws mandating how and even if to assess and remediate dyslexia, many states are not addressing the disability at all.

The reluctance to use the term when defining a reading impairment was exemplified in a policy statement issued by the U.S. Department of Education in 2015 in response to stakeholders expressing concerns that the term was not being used in IEPs (Individualized Education Program) and other documents. The four-page statement was issued to ensure that there was no exclusion of the terms dyslexia, dysgraphia, or dyscalculia in the IDEA (Individuals with Disabilities Education Act) and that these terms should be used accordingly when discussing the special educational needs of students. In my school district, dyslexia is not targeted specifically, and in most cases not even mentioned as a possible cause of a student's reading difficulties. With only 34% of

students reading at grade level by the fourth grade, South Carolina school districts need to make some significant changes in their approach to teaching literacy skills (Greenho, 2016).

The Read to Succeed program was initiated in 2015 due to low literacy rates in the state of South Carolina. Teacher preparation programs have created new classes in literacy development to ensure future success with this program. Practicing educators must take professional development that is literacy-related over ten years as part of the initiative. Another requirement as stated on the SC State Department's website is "a student must be retained in the third grade if the student fails to demonstrate reading proficiency at the end of third grade as indicated by scoring at the lowest achievement level on the state summative reading assessment SC READY" (p. 2). Causes of this failure on the state-wide testing include children having reading disabilities that impede success.

Dyslexia is defined as a language-based learning disorder with a neurobiological origin that can affect reading and writing due to a deficit in phonological skills (Adlof & Hogan, 2018; Shaywitz & Shaywitz, 2020). Speech-language pathologists are professionals who specialize in, among other areas, all domains of language including phonology (ASHA, 2004; Hogan, 2018). The Simple View of Reading is a theoretical framework that comprises word recognition and listening comprehension as the basis for successful reading (Catts & Hogan, 2003; Gough & Tunmer, 1986). The Simple View of Reading (Gough & Tunmer, 1986) is written as a mathematical equation (Figure 2.1):

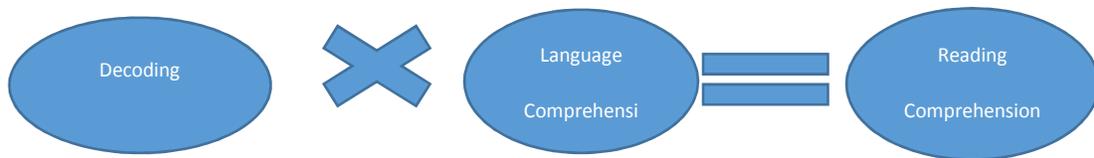


Figure 2.1 *Simple View of Reading*

Assuming 1 is a perfect score, examine the following:

$$1 \times 1 = 1 \text{ (Reading comprehension is successful)}$$

However, if one component is not achieved, the answer is 0 (reading comprehension is not achieved). In the case of the individual with dyslexia, decoding would be the issue and the equation would read; $0 \times 1 = 0$. The reading comprehension will only be as strong as the weakest link in the equation. Over-teaching one of these domains to make up for the weaker domain will not work (Gough & Tunmer, 1986; Nation, 2019).

Currently, in my school district, the school psychologist assesses and determines if a student has a reading disability and then remediation services are provided by the special education teachers. The student is defined as having a specific learning disability with no further distinction made. The problem of practice is that despite the elevated occurrence of dyslexia, there is a reluctance to use the term when describing the learning impairment in school documentation. There is much confusion over how and if tests should be used to determine a diagnosis and who should administer them. Since there is no federal law regarding this, individual states have begun issuing mandates regarding these concerns (International Dyslexia Association, 2018). Restructuring in the school's procedures will need to be implemented for this to work, including collaboration between

the school specialists and classroom teachers. My study will involve surveys and interviews with the participants to begin this process.

This literature review will begin with the rationale for this research study. Next, the theoretical framework behind this research will be outlined followed by the history of dyslexia. The goals of identification and remediation of dyslexia to help increase the literacy rate in South Carolina Next will be introduced. Following will be a discussion of how to identify, assess, and remediate dyslexia highlighting the speech-language pathologists' importance in the process. The chapter will conclude with current dyslexia laws and the consequences of not identifying and remediating dyslexia impacting social justice.

Literature Review Methodology

Literature reviews examine reliable sources of information (journal articles, databases, books, personal communications) in pursuit of presenting an articulate scenario for your research (Machi & McEvoy, 2016). Discussing applicable theories will assist with the framework of this study. Investigating current laws at the federal and state level will highlight the confusion of the dyslexia debate and lead to a discussion of the consequences of not identifying and remediating dyslexia. Explorations into identification, assessment, and remediation protocols will provide information as to the “who, what, where” of services for students with dyslexia. The result will be a platform for the research study to investigate the implementation of a collaborative team in my school district to identify and remediate students with dyslexia. Many data gathering strategies were implemented in this literature review including searching databases

(ERIC and EBSCO) for peer-reviewed articles and books relating to the topic. Textbooks owned by the researcher were also utilized. Personal communications using social media, my phone, and emails helped in the collection of information about dyslexia.

Theoretical Framework

The concepts of neurodiversity (Milne, 2005; Rentenbach & Prisolovsky, 2016), the phonological theory (Shaywitz & Shaywitz, 2020; Szenkovits et al., 2016), and the change theory (Havelock & Hamilton, 2004; Kaminiski, 2011; Lewin, 1951) all comprised the theoretical framework for this study. The models of neurodiversity and phonology describe the complexities of dyslexia and the impact that it has on the individual. Additionally, the theories demonstrate the need to understand the importance of dyslexia knowledge for the identification of students to provide appropriate instruction, support, and remediation. The change theory demonstrates how this researcher's school district will begin to consider a proposed protocol implementation of identifying and remediating students with dyslexia.

Neurodiversity Model

Neurodiversity is defined as the biological fact that there are differences in human minds. It is the infinite distinction in neurocognitive performance (den Houting, 2019). The neurodivergent model is a social justice movement that seeks to embrace the differences and strengths of the neurodivergent learner including dyslexics (Armstrong, 2012; Walker, 2012).

Recent neuroscience research has advanced our perception of dyslexia as a difference in brain organization resulting in positive and negative attributes (Milne, 2005;

Rentenbach & Prislowsky, 2016). Difficulty in reading is offset by an increase in divergent thinking and creativity. The reading impairment is not caused by intellectual deficits; it is a result of a difference in brain circuitry. Persons with dyslexia differ in how they process language in comparison to a typical reader (Xia et al., 2016). Decoding is the weakness in the dyslexic brain but it is accompanied by many strengths that are often used as compensatory strategies (e.g. reasoning, vocabulary, empathy, general knowledge) (Armstrong, 2012; Shaywitz & Shaywitz, 2020).

Eide and Eide (2012) have linked four advantages of individuals with dyslexia; material reasoning, inter-connected reasoning, narrative or story-based reasoning, and dynamic reasoning (MIND). Material reasoning is spatial reasoning (skills used in building, engineering, architecture). Inter-connected reasoning pertains to causal relationships, analogies, and using multiple perspectives which is useful in interdisciplinary fields. Narrative reasoning allows the individual to remember experiences and learn from them. The fourth advantage cited by the authors is dynamic reasoning; the ability to work in a setting with moving parts and change is ongoing (e.g., business, finance). The scholars do not discount the difficulties with learning foundational skills like decoding and spelling but rather embrace the positivity of the dyslexic brain.

Retenbach et al. (2017) state that educators have a vital role in ensuring that the strengths of the neurodivergent learners are emphasized and celebrated. They recommend four strategies for professionals to utilize when working with dyslexic individuals: make print valuable, provide accommodations to access materials, implement strategies that use

their strengths and demonstrate progress, and “assign tasks that emphasize creativity and reasoning” (pp. 62-63).

Individual education programs (IEPs) are written for students who qualify for special education services. IEPs are legal documents with many components including a narrative section for academic strengths and weaknesses. However, many IEPs are written from a deficit model focusing on the shortcomings of the student. Using a strength-based approach not only ensures that the IEP meets the legal standards to uphold the student’s educational rights, but it also highlights the individual and promotes socially just practices by increasing inclusion in the general education setting (Elder et al., 2018).

Phonological Model

The language system is composed of different compartments, each dedicated to a certain facet of language. The system’s functions are quick, automatic, and performed without the individual being aware (Dehaene, 2020; Shaywitz & Shaywitz, 2020).

Phonology is defined as “the speech sound (i.e., phoneme) system of a language, including the rules for combining and using phonemes” (AHSA, n.d.). Phonology is at the bottom of the language hierarchy. Dyslexia is defined as a language-based learning disability characterized by a breakdown in the phonological system (Das, 2009; Mills & Clark, 2017; Shaywitz & Shaywitz, 2020). Disruption at the phonological level of language interferes with mastery of the alphabetic principle, the connection of sounds to letters that is necessary to be successful in reading and writing (Baker et al., 2018; Shaywitz & Shaywitz, 2020). Mastery of the alphabetic principle requires alphabetic

understanding (comprehending that words are composed of letters that represent sounds) and phonological recoding (translating letters into sounds) (Baker et al., 2018).

Research shows that the major difficulty with the dyslexic individual involves delays with phonological skills (e.g. segmenting words into smaller units, discriminating sounds) (Siegel, 2006; Shaywitz, 2020; Ward-Lonergan & Duthie, 2018). The phonological impairment causes difficulty in understanding letter-sound correspondences and progresses to delays with decoding, spelling, and writing (Navas et al., 2014; Ward-Lonergan & Duthrie, 2018). The phonological deficit impedes word decoding affecting reading comprehension as a secondary consequence. This distinguishes dyslexia from other reading impairments such as a specific comprehension deficit which is characterized by good word recognition but poor language comprehension (Ward-Lonergan, 2018). Effective intervention for dyslexic individuals is phonologically based with an emphasis on phoneme-grapheme knowledge in conjunction with structured practice (Snowling et al. 2020).

Incorporating the phonological model into this study was important for two reasons. First, the aforementioned information describes how the phonology component of language is affected by the dyslexic individual (Navas et al, 2014; Snowling et al., 2020). Secondly, incorporating speech-language pathologists into the proposed implementation of dyslexia identification and remediation protocol is a key role in this research. Having strong background knowledge in phonology qualifies and underscores the rationale for speech-language pathologists to be vital members of the new system (Colenbrander et al., 2018; Hogan, 2018).

Change theory

Kurt Lewin, a social psychologist, has been noted as one of the pioneers of change theories, as many modern theorists have used many of the same principles (Lewin, 1951). The theory consists of three stages (unfreeze, change, and refreeze) that are used to identify the elements that influence a situation (Kaminski, 2011). Rejecting prior concepts and substituting them with new ideas is the basis of the theory. *Unfreezing* is the initial step that involves letting go of a behavior pattern or idea and helping persons repress resistance. The next step is *change*; a movement in thoughts, ideas, and/or behaviors. Lastly, stage three is *refreeze*; establishing the reform as a new way of thinking. Refreezing is essential in “cementing” the idea and creating a new norm (Havelock & Hamilton, 2004).

Unfreezing my district’s current non-use of dyslexia identification and remediation was the first stage of my action research study. Secondly, moving toward change by encouraging conversation took place. Both stage one and stage two were accomplished by administering a pre-survey of dyslexia knowledge, a post-survey after a PowerPoint presentation highlighting the SCDE dyslexia handbook, followed by interviews involving volunteering participants. The thought process was that by introducing the topic of dyslexia and encouraging conversation, reform will start to take place. The last stage of refreezing will be followed up after the study with an action plan presented to administrators.

History of Dyslexia

Dyslexia dates back to the late nineteenth century in England and Scotland when physicians described in their medical journals children who were intelligent and could not read. Dr. W. Pringle Morgan (as cited in Shaywitz & Shaywitz, 2020) documented a case study in 1896 about a fourteen-year-old boy as follows:

...the boy is bright and of average intelligence in conversation. His eyes are normal...and his eyesight is good. The schoolmaster who has taught him for some years says that he would be the smartest lad in the school if the instruction were entirely oral. (p.15)

This is the basic definition of dyslexia today but was referred to as word-blindness back then. Before Morgan, word-blindness was only recognized in adults who had experienced brain injury (Shaywitz & Shaywitz, 2020). A German physician, Professor Rudolf Berlin was the first to use the term “dyslexia” when describing adults who developed word-blindness after brain injury (Tønnessen & Uppstad, 2015). The word dyslexia originates from two Greek words: *dys* meaning difficult and *lexis* meaning word (difficult word) (Milne, 2005).

In 1895, an ophthalmologist named Dr. James Hinshelwood worked with adults who had acquired word blindness before turning his focus to children who could not learn to read. He was the first to make firm connections that the children with dyslexia, despite having cognitive strengths, demonstrated difficulty with reading. Hinshelwood made concerted efforts to publicize his findings through lectures and written reports so that other physicians could start making the diagnoses (Tonnesan & Uppstad, 2015). Progression of dyslexia awareness moved from Europe to the United States in 1905.

Ophthalmologists were the professionals who took notice of individuals with reading difficulties, even though no ocular causes could be found for the word-blindness (Shaywitz & Shaywitz, 2020).

In 1925, an American neurologist named Dr. Samuel T. Orton concluded there was a brain hemisphere connection to language development. Orton's research was much more expansive than his predecessors with studies including at least 1000 individuals (some estimates are as high as 3000). He concurred with Hinshelwood's concept that the reading difficulty was due to a visual component, but his thought was that there was a distortion of letters and words (now labeled "letter reversals"). Orton considered the disability to be hereditary and dominant in males (Shaywitz & Shaywitz, 2020). Although this letter/word distortion has since been acknowledged as a normal part of development, the Orton Dyslexia Society, now known as the International Dyslexia Association (IDA), was named in his honor (Tønnessen & Uppstad, 2015).

A change in the domain of study moved from the medical to the educational field in the 1960s with cognitive psychologists and educators taking a lead role in research. During this time, it became common to decipher between poor readers and dyslexics by degree rather than type and to use the term "delay" rather than "deficit" (Tønnessen & Uppstad, 2015). The significance of phonology as a cause of the most severe and long-lasting reading difficulties was made prominent at this time. Alvin Liberman, Isabella Liberman, and Donald Shankweiler were among the first researchers to begin focusing on dyslexia's main deficit to be the inability to discriminate and identify individual phonemes (Snowling et al., 2020; Tønnessen & Uppstad, 2015).

After more than 100 years of research, there remains controversy over the definition of dyslexia and how to remediate it. New theories that it “is a gift” have recently been introduced. However, there has been agreement that the focus of dyslexia management should remain in the educational domain even when other professionals have performed the assessments (Lawrence, 2009).

Goals of Identification and Remediation of Dyslexia

Despite the implementation of the Read to Succeed legislation in 2015, South Carolina did not make any significant improvements in reading according to the Nation’s Report Card with 32% of fourth graders rated at or above proficiency level (NAEP, 2019). However, due to the comprehensiveness of the legislation’s programs, the effects may not have been realized as yet. Developing new strategies to increase literacy rates are needed to make our students more successful readers. Identifying and providing remediation services to students with dyslexia is a plausible way to achieve this. Ferer et al. (2015) found that dyslexic students in the first grade demonstrated lower reading grades than typical readers and this gap continued into adolescence suggesting that early intervention is vital. There is a causal link between phonological awareness (sensitivity to word sound structure) and early reading. A child with poor phonological skills in kindergarten is likely to have decreased reading success in second grade (Hogan et al., 2005).

Increasing dyslexia awareness for school specialists and general education teachers is a key component in early identification. Dispelling misconceptions of common characteristics (i.e.- letter reversals, visual problems) is an essential first step

(Gonzales & Brown, 2019). Clarification of what it isn't will facilitate the recognition of risk factors that are indicative of dyslexia. There have been perpetual myths about who can and cannot diagnose and treat dyslexia if schools can use the term, and if it can be remediated (Shaywitz & Shaywitz, 2020). Providing information to teachers is necessary to discount preconceived ideas that are limiting our ability to help these students.

Teacher knowledge of the five main language constructs recommended by the National Reading Panel (phonological awareness, phonemic awareness, alphabetic phonics, and morphology) was found to be lacking in some schools (Fallon & Katz, 2020; Pitman et al., 2019). Knowledge of structured literacy instruction would also be beneficial, not only to students with dyslexia but to all students as a tier one intervention (Spear-Swerling, 2019). Learning effective literacy instruction strategies that promote success will reduce the frustration of both teachers and students (Memis & Kandermir, 2019).

Dyslexia Identification and Assessment

Ideally, initial foundations for reading and writing should start long before students begin to independently decode words or read for comprehension, using techniques such as academic talk (AT), during infancy and the preschool years (van Kleeck, 2020). van Kleeck (2020) differentiates between casual talk, language used for everyday living, and AT defined as the language used in school to promote academic skills (e.g. - reasoning, inferencing, and meta-language). Incorporating AT is one way to increase oral language skills. Deficits in oral language abilities in the preschool years have been shown to predict later developing reading impairments (Fallon & Katz, 2020;

Hulme & Snowling, 2016). In particular, speech sound disorders have been linked to reading difficulties (Cabbage et al., 2018).

Speech sound disorders (SSD), formally referred to as articulation or phonological disorders, are characterized by the impairment of developmentally appropriate speech sound productions (Lewis et al, 2006). More than half of children with SSD experience difficulties with reading (Cabbage et al., 2018). Children with SSD and dyslexia have underlying phonological deficits with skills such as phonological awareness, phonological memory, and word reading (Hogan et al. 2005; Lindstrom, 2019). It is, therefore, not surprising that “individuals with dyslexia exhibit a spectrum of speech production deficits, spanning the gamut from more severe impairments that are properly characterized as a speech delay or speech sound disorder to subclinical deficits involving word-specific deficits” (Cabbage et al., 2018, p.775).

Berninger et al. (2015) have categorized learning disabilities into three categories: dysgraphia, dyslexia, and oral and written language learning disabilities (OWL LD). (OWL LD is often referred to as speech-language impairment, SLI, in the schools). Their research demonstrates differences in these three types of learning disabilities using brain imaging and genetic studies. The researchers state that they are all language-based disorders: dyslexia defined as an impairment with word decoding, dysgraphia as an impairment with letter formation, and OWL LD as an impairment of aural and oral language. Based on their findings, the significance of differentiation in assessment and instruction is emphasized for the impairments to be remediated. Notably, speech-language pathologists are among the professionals mentioned in the recommended assessment protocol.

Dyslexia Symptoms

The International Dyslexia Association (IDA, 2017) states the following are early identifying characteristics of dyslexia: difficulty with remembering simple sequences (e.g.-counting to 20, naming the days of the week, reciting the alphabet), difficulty understanding the rhyming of words, trouble recognizing words that begin with the same sound (for example, that bird, baby”, and big all start with b), pronunciation difficulties, trouble with clapping hands to the rhythm of a song, difficulty with word retrieval (frequently uses words like “stuff” and “that thing” rather than specific words to name objects), trouble remembering names of places and people, and difficulty remembering spoken directions (pp-5-6).

The importance of early identification of dyslexia has been emphasized in recent studies (Andrade et al., 2015; Ferrer et al., 2015; Lindstrom, 2019). Ferrer et al. (2015) conducted longitudinal research to investigate if reading achievement gaps between dyslexic and typical readers determined in the first grade persisted into adolescence. Results indicated that although the dyslexic readers made gains, the gap continued into the twelfth grade. The authors concluded that interventions need to be implemented in kindergarten, or possibly even preschool, to close the gap in reading achievement levels.

Unfortunately, as Shawyitz & Shaywitz (2020) report, most dyslexic individuals are not identified until the third grade and frequently not until adolescence and beyond. The authors state the signs to look for in older children are difficulty reading single words, poor phonological skills, difficulty decoding nonsense or unfamiliar words, difficulty reading single words when speed is involved, lack of reading fluency and

prosody, difficulty reading function words (is, as, etc.), poor spelling, and reading comprehension higher than decoding capabilities (p.164).

Professionals' Awareness of Dyslexia Characteristics

Teacher awareness of indicators is essential in the early identification of students with dyslexia. Research suggests that teachers are unprepared to identify the indicators (Gonzales & Brown, 2017; Washburn et al., 2017; White & Mather, 2020). Gonzales and Brown (2017) conducted a study with Head Start teachers from New Jersey (a state with dyslexia screening mandates) and Pennsylvania (a state without mandates) to investigate the educators' knowledge of identifying factors. The authors discovered that the Head Start teachers held some common misconceptions about dyslexia (primarily that is a visual processing disorder). The teachers recognized the risk factors of delays in alphabet knowledge and oral language but did not recognize phonemic awareness as a major indicator of the disorder. They also displayed limited knowledge in literacy development. Most of the educators had no dyslexia professional development or training from college classes. Interestingly, there were no differences discovered between the two states despite New Jersey requiring dyslexia screenings.

Washburn et al. (2017) conducted a study to examine if various certifications, grade level, and/or exposure to literacy coursework affect the amount of educator knowledge about dyslexia. The participants in the study had 0-5 years of teaching experience. The results revealed that certification type and literacy coursework were not predictors of teachers' literacy knowledge or teachers' misconceptions about dyslexia. However, the certification level did have an influence. Secondary teachers had a higher

percentage of misconceptions about dyslexia. Novice teachers in all areas associated the literacy-related impairment characteristics with reading disabilities rather than with dyslexia.

Research into college preparation programs has explored reasons for this lack of teacher awareness about dyslexia. White et al. (2020) studied 243 college students majoring in general education, special education, and school psychology (EM-Education Majors) with a comparison group of students with majors in architecture (NEM-Noneducational Majors) to investigate both their knowledge and responsibility perceptions of dyslexia using the *Knowledge and Insights of Dyslexia Survey (KIDS)*. No significant differences were noted between EM and NEM participants, or within EM subgroups, concerning dyslexia knowledge. The area that the participants knew the least about was dyslexia treatment. They also demonstrated confusion about appropriate instruction, identifying characteristics, and EM participants rated themselves as moderately responsible for teaching students with dyslexia. The EM participants believed that special education teachers were primarily responsible. These results suggest that teacher preparation programs need to expand the existing dyslexia information of characteristics, interventions, and prevalence presently disseminated in their classes.

Dyslexia Screening

South Carolina law currently requires that schools administer universal screening measures to students in kindergarten and grade one three times yearly to help identify students with reading difficulties (SCDE, 2020). Some screening tools that have been

approved by the Learning Disorders Task Force are Acadience Reading, Dibels (6th and 8th editions), MAP reading fluency, and STAR CBM (SCDE, 2020).

It is important to remember that screening tools are not comprehensive; they do not ensure a diagnosis and should not be used to identify any strength and weakness patterns or level of impairment (Petscher et al., 2019). There are two types of screeners; performance-based (which assesses skills) and ratings-based (which score according to characteristics and behaviors). (Petscher et al., 2019). Using a hybrid approach (a combination of both screening types) with a two-step method provides increased reliability (Andrade et al., 2015).

Another important factor is that early intervention needs to continue even after mastery of some isolated skills, such as rhyming or grapheme-sound correspondence. Continued student support may be necessary to keep up with the increasing demands of the curriculum (Colenbrander et al., 2018).

Dyslexia Assessment and Diagnosis

Dyslexia diagnosis requires clinical judgment by a trained practitioner using a student's history, symptoms, observations, and test scores (Shaywitz & Shaywitz, 2020). A key element in the diagnosis is the factor of unexpected underachievement; the student's reading ability is below what is expected with intelligence scores (Lindstrom, 2019; Shaywitz & Shaywitz, 2020). Responding "yes" to the following questions will help determine a diagnosis:

- Does the student perform significantly below peers on measures of letter-sound knowledge, word decoding, reading fluency, and/or spelling?

- Has the student had sufficient instruction?
- Has it been determined that the difficulties identified earlier are not due to another factor, such as intellectual disability, ADHD, or emotional disturbance?
- Does the student have a deficit in phonological processing, phonological memory, orthographic awareness, rapid naming, processing speed, or working memory?
- Does the student have broad oral language abilities within the average range?

(Lindstrom, 2019, p. 200)

Testing IQ is needed to determine if there is a discrepancy between reading ability and intelligence scores. The Wechsler Intelligence Scale for Children 5th edition (WISC-5) is a common assessment for school-age individuals. This test can only be administered by practitioners with particular licensure or certification, like a school psychologist (Shaywitz & Shaywitz, 2020). Other areas to assess are phonological awareness, speech sound productions, working memory, rapid automatic naming, receptive language, expressive language, reading comprehension, phonics, decoding real and nonsense words, oral reading fluency, spelling, and written expression (Lindstrom, 2019; Shaywitz & Shaywitz, 2020).

The *Diagnostic and Statistical Manual of Mental Disorder IV* (DSM-5; American Psychiatric Association, 2013) criteria include the term “neurodevelopmental disorder” and requires a minimum of six months' intervention to rule out other contributing factors, such as psychosocial adversity. The DSM-5 states similar dyslexia characteristics previously listed; difficulty with decoding, word reading, reading fluency, and spelling.

Reading is a complicated task involving multiple skills resulting in abilities falling on a spectrum. This means that criteria points can be difficult to determine

(Bishop, 2015), and finding appropriate assessments for younger children before they have had formal instruction may be difficult (Colenbrander et al., 2018).

SLP's Role in the Identification/Assessment Process

The school-based speech-language pathologists' caseload consists primarily of students with speech sound disorders and language disorders (ASHA, 2018). The American Speech-Language-Hearing Association (ASHA) released a position statement in 2001 including;

“(a) preventing written language problems by fostering language acquisition and emergent literacy; (b) identifying children at risk for reading and writing problems; (c) assessing reading and writing; (d) providing intervention and documenting outcomes for reading and writing; and (e) assuming other roles, such as assisting general education teachers, parents, and students; advocating for effective literacy practices, and advancing the knowledge base”. (p.2)

Hogan (2018) affirms that many speech-language pathologists (SLPs) do not feel confident to test and remediate students with dyslexia. She adds that SLPs should have confidence in their expertise, educate themselves on dyslexia with facts including the relationship to other speech-language impairments, promote the use of the dyslexia term, and guide intervention decisions. Dr. Sally Shaywitz (2020), co-director of the Yale Center for Dyslexia and Creativity, states about spoken language, “I often turn to a speech-language-pathologist to carry out this type of assessment. These specialists are

quite knowledgeable about early language development and are extremely helpful in assessing phonological skills” (Shaywitz & Shaywitz, 2020, p.149).

SLPs are potentially one of the first professionals to interact with students with dyslexia in the early years due to links with spoken language difficulty. Dyslexia is known to often be co-morbid with communication deficits (Hogan, 2018). Their knowledge in language skills (i.e.-phonology, syntax, morphology), and the acquisition age of these skills, contribute to the rationale for SLPs to be intricately involved in the dyslexia identification and assessment protocol (Al Otaiba et al., 2018; Spracher, 2001). School-based SLPs are familiar with or have the potential to be familiar with, many of the tests recommended in the assessment process as they are often used in our speech-language evaluations (ASHA, 2004).

Remediation Strategies for Dyslexic Students

The reading wars date back more than 200 years, with a pendulum of focused approaches including phonics and whole-language (Castles et al., 2018). Guided reading and balanced literacy are two approaches that have been utilized in recent years. Guided reading encompasses word study that is embedded in leveled texts and does not follow a specific scope or sequence (Denton et al., 2014). Balanced literacy relies on exposing children to print and using pictures, context clues, and whole-to-part phonics to determine unknown words (Spear-Swerling, 2019) and is closely aligned to what is occurring in classrooms today (Spear-Swerling, 2019; Wilson & Falcon, 2018).

Reading recovery is an early intervention program in our district that provides instruction to first-grade children identified with reading and writing difficulties. It is part

of the MTSS framework described in the SCDE dyslexia handbook. Although my district website does not specify that guided reading or balanced literacy is the approach the reading recovery teachers use, it does affirm that the teachers' training is provided by Clemson University. The Clemson University website explicitly states guided reading is the approach used in the teachers' instruction (Clemson University, n.d). The SCDE dyslexia handbook specifies that guided reading and balanced literacy programs "have not been effective for teaching struggling readers. These approaches are especially ineffective for students with dyslexia because they do not focus on the phonological awareness and decoding skills these students need..." (SCDE, 2020, p. 56). Using the Simple View of Reading model (Figure 1-2), if decoding skills are not realized then neither will reading comprehension (Gough & Tunmer, 1986). The International Dyslexia Association (2015) has determined that approaches such as guided reading and balanced literacy are not successful with individuals with dyslexia because the intensity of decoding skills instruction is not included.

Kilpatrick (2015) reveals that all successful reading remediation strategies consist of three core elements: phonological/phonemic awareness, phonic decoding, and connected textual reading opportunities using an explicit and systematic approach. Kilpatrick determined that students who are taught these skills with this approach scored 11 points higher on standardized tests than those taught with non-systematic approaches. Kilpatrick also notes that "phonological awareness continues to develop in typical readers beyond first grade even though most programs and assessments discontinue training...at the end of first grade", despite its importance (p.66).

Intervention programs should include structure, proper sequencing, and organization with repetition and daily practice (Al Otaiba et al., 2018; Mather et al, 2011). The instruction should be structured, systematic, and explicit. Explicit pertains to both the design and delivery of instruction (Spear-Swerling, 2019). The content is planned with an intended focus in mind incorporating the multiple skills needed for reading using a gradual release of responsibility (I do/we do/you do) (Liuzzo, 2017).

Often the term structured literacy is used to describe evidence-based instruction for struggling readers, including the International Dyslexia Association (IDA) (Fallon & Katz, 2020; Cowen, 2016). IDA states that structured literacy includes phonology, sound-symbol association, syllables, morphology, syntax, and semantics in a systematic and cumulative approach. Explicit instruction is again emphasized, not leaving the student to deduce concepts on their own. Diagnostics is another key component of structured literacy. This includes individualizing instruction by utilizing informal and formal data that ensures each step has been mastered before moving on (Cowen, 2016). Structured literacy depicts a vital shift in acknowledging the relationship between spoken and written language (Fallon & Katz, 2019).

Using a multisensory approach is a component of many popular reading programs such as Orton-Gillingham (Liuzzo, 2017; Shaywitz & Shaywitz, 2020). IDA states “While multisensory teaching lacks the extensive research that validates structured literacy’s other teaching principles, decades of clinical results support the efficacy of the simultaneous association of auditory, visual, kinesthetic-motor modalities for enhancing memory and learning in students with dyslexia” (Cowen, 2016, p. 3). Shaywitz &

Shaywitz (2020) agree there is no solid evidence in using multisensory strategies but suggest future research may increase its credibility.

Professionals' Unawareness of Strategies

There is a clear disconnect between what scientists have learned about reading and what is being applied in schools (Seidenberg, 2017). The National Reading Panel has stated that there are five main components to adequate reading instruction: phonemic awareness, phonics, vocabulary, fluency, and comprehension (Drake & Walsh, 2020). The National Council on Teacher Quality (NCTQ) published a report in 2018 stating that only 23% of teacher preparation programs provide adequate instruction in their early reading courses (Cochran-Smith et al., 2018). Another NCTQ report found that the national average of the suggested reading components included in teacher preparation programs was three out of five (60%), with only 51% including phonemic awareness (Drake & Walsh, 2020). This report also found that nontraditional programs (alternative routes), which are on the rise, failed to provide overall reading instruction, and often when literacy classes were given, the teachers were already in the classroom. This demonstrates “The Peter Effect”, derived from a New Testament story of a beggar who asks St. Peter for money and he responds that he “cannot give what he does not have” (The New Testament, in Applegate et al., 2014, p.190). In this case, you cannot teach what you do not know.

SLPs Role in Remediation

The ability to talk comes long before the ability to read. We are biologically wired for oral language but reading print is a cognitive skill created by man that needs to be

taught (Dehaene, 2020; Seidenberg, 2017; Shaywitz & Shaywitz, 2020). However, whether we say it or read it, it is all language. SLPs have extensive knowledge and training in all areas of language.

Because many students who qualify for speech-language support also demonstrate significant reading and writing difficulties, the role of the SLP is vital in the selection of effective intensive interventions, determining ways to monitor progress or response, and collaborating to further intensify as needed. (Al Otaiba et al., 2018, p. 830)

Fallon and Katz (2019) concur with this natural assumption of the speech-language pathologists' (SLPs') role in providing these services adding that these professionals frequently have the most vigorous coursework in the language areas required (phonology, semantics, syntax, and morphology). Professionals working with struggling readers, such as those with dyslexia, need to understand the "indirect relationship between speech and print", have knowledge of "which stimuli to use, how to interpret student errors, and how to give corrective feedback" (Moats, 2000, p.42). These skills are foundational in communication disorders programs.

The importance of the speech-language pathologist's role in dyslexia is illustrated by the implementation of these professionals in specialized schools, such as the Windward Teacher Training Institute, to provide teacher instruction (Shaywitz & Shaywitz, 2020). SLPs are even clinic directors of facilities that focus on dyslexia. The

importance of SLPs in the field of dyslexia has grown with the realization that their expertise is in conjunction with the increased knowledge of dyslexia itself.

Secondary Students and Dyslexia

As previously mentioned, often dyslexia is not identified until adolescence or even adulthood (Shaywitz & Shaywitz, 2020). Ferer et al. (2015) found that the achievement gap between typical and dyslexic students begins in first grade and persists into high school. Secondary students are expected to read to learn but may still be at the learning to read stage of development causing them to fall further behind. These students often become discouraged by continual failure, suffer embarrassment, and feel hopeless (Saletta, 2018).

Nippold (2017) reports “To comprehend [an Earth science] passage independently, an adolescent would need to possess word reading skills sufficient to allow for accurate, efficient, and rapid recognition or decoding of numerous abstract and morphologically complex terms that occur in nearly every sentence” (p. 126). Vocabulary skills become more crucial by middle school and have demonstrated a higher correlation to reading comprehension (Florit & Cain, 2011). Morphological knowledge skills have been reported to assist comprehension in adolescent students who struggle with reading (Goodwin et al., 2020). Morphology incorporates etymology study including base words and affixes (Luizzo, 2019). “Morphological instruction may be especially helpful for students with learning disabilities, because morphological skills may help compensate for the phonological processing difficulties that characterize reading disability” (McCutchen

et al., 2014, p. 86). Unfortunately, teachers have been found to have little knowledge of how to teach morphological skills (Washburn et al., 2019).

Dyslexia Laws

In recent years there has been an increase in policy and practices concerning dyslexia. On the national level, President Obama signed the Research Excellence and Advancements for Dyslexia Act (READ Act) in 2016 which required the National Science Foundation to allot five million dollars for research in all facets of dyslexia including professional development, curricula, early intervention, and models of intervention (Gov.us., 2016; Youman & Mather, 2018).

Youman and Mather (2018) reported in a published update that 42 states now have dyslexia-specific legislation, an increase from 22 determined in 2013. This legislation expansion can in part be attributed to parent groups, social media, and individuals dedicated to the cause for dyslexia awareness. However, the states with dyslexia-specific laws do not have uniformity in procedures for identification and remediation. Even in the states providing universal screenings, they often do not clarify who is involved in the process.

Youman and Mather (2018), in *Dyslexia laws in the USA: A 2018 update*, provide suggestions for parents that may help implement a protocol for the identification and remediation of students with dyslexia. Some of these same suggestions may also be especially effective for school personnel in a proposed protocol: (1) make sure universal screeners are appropriate, (2) if dyslexia is suspected, ensure that other areas associated are assessed, (3) advocate for a dyslexia specialist to address training, (4) develop a

system for daily instruction by trained personnel, (5) become familiar with effective accommodations and monitor progress, and (6) develop a dyslexia handbook for the district to follow.

The South Carolina Department of Education (SCDE) published a dyslexia handbook in September 2020 to act as a guide for educators to utilize when working with students determined to have reading difficulties. The handbook's introduction includes a letter from Molly Spearman, State Superintendent of Education, "[w]e hope this handbook will spur a renewed focus on educating students with dyslexia and will offer teachers across South Carolina a guide for implementing effective literacy instruction and interventions" (SCDE, 2020). Before and since this handbook in the school district where this researcher works, the term dyslexia has not been used in any faculty meetings, and very few IEP or district meetings, while she was in attendance.

Consequences of Non-identification and Remediation

Being able to read and write are essential components for complete participation in society. Inadequacies in these areas can have devastating educational outcomes (Ferrer et al, 2015; McLaughlin et al., 2014). I have witnessed social media posts with messages reporting these issues either from parents of children with dyslexia or from individuals with the disability. The consequences of non-identification and remediation of dyslexia can have long-lasting negative effects. The achievement gap that is seen with dyslexic students and their typical reading peers often creates the Matthew Effect; the "rich get richer" or in this case, the gap continues or gets even greater (Ferrer et al, 2015). This can translate to reduced high school graduation rates, higher unemployment rates, and

lower earnings because of fewer occupational choices (Ferrer et al, 2015). Reports of low self-esteem and mental health issues have been associated with individuals with dyslexia (Mather & Wendling, 2011; Shaywitz & Shaywitz, 2020) as well as homelessness, substance abuse, and a high incidence in prison populations (Seigel, 2019).

Summary

Dyslexia is a lifelong learning disability that affects reading but can also attribute to difficulties in spelling, writing, and spoken language. Children with dyslexia can achieve success in these areas, especially when there is early identification and remediation. Secondary to the acquisition of academic success, these students may be spared from the emotional effects that can accompany years of battling with learning to read using inappropriate and ineffective strategies.

Dispelling dyslexia myths and misconceptions of school professionals by providing science-based research is an important initial step. Using evidence-based instruction will assist students in accessing the curriculum more quickly and thoroughly, leaving more time for educators to teach higher-level skills. By achieving this, test scores, teacher morale, parent approval, and most importantly student self-confidence will increase, making a more successful school and community environment.

Despite the high prevalence of dyslexia, there is a reluctance to use the term in this researcher's school district. To appropriately identify, assess, and provide effective instruction and accommodations for these students, a collaboration of teachers and specialists, including speech-language pathologists, will be necessary. Therefore, a study

exploring the knowledge, awareness, and attitudes of key personnel regarding dyslexia in this researcher's district was deemed necessary

CHAPTER 3

METHODOLOGY

A simple comment made by my district Medicaid coordinator at a monthly speech therapy interaction meeting about a possible dyslexia mandate that would include SLPs and the aghast response of my colleagues lead me to the questions of “should SLPs be involved in dyslexia?” and “how would we fit into the current protocol of testing for reading disabilities?” After a literature review on the topic, further questions arose such as “why isn’t my district saying dyslexia at all?” and “what do my colleagues think about incorporating a new protocol if issued a state mandate to do so?” In my work experience, if a student is suspected of learning disabilities, testing in the areas of reading and writing is administered by the school psychologist, and the instruction for students who qualify for special education services in these areas is provided by the resource teacher. It is considered their domain with everyone set in their roles. Individual states have begun issuing mandates (IDA, 2018) and some, including South Carolina, have published dyslexia handbooks to provide guidelines for identifying, assessing, and treating students (SCDE, 2020). To accomplish these goals, a restructuring in the school’s procedures will need to be implemented for this to work, including collaboration between the school specialists.

The purpose of this action research was to determine the impact of a training session on the secondary school psychologists', special education teachers', and SLPs' knowledge and attitudes about identifying, assessing, and remediating dyslexia in schools, perceptions of the SLPs involvement in a dyslexia protocol, and how to implement a protocol in the secondary setting. Using a convergent mixed methods design, the findings will assist school personnel in the formation of guidelines for dyslexia identification, assessment, and remediation. This chapter will outline the methodology including the research design, participants, and data collection methods. The research questions that guided this study are as follows:

1. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' knowledge about identifying, assessing, and remediating students with dyslexia in schools?
2. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' attitudes about identifying, assessing, and remediating students with dyslexia in schools?
3. What are the secondary school specialists' perceptions about the SLP's involvement in the protocol of identification, assessment, and remediation of dyslexia in schools?
4. What are the secondary school specialists' perceptions of how to implement a protocol to identify, assess, and remediate dyslexia in a secondary school setting?

Action Research Design

Action research is “constructivist, situational, practical, systematic, and cyclical” (Efron & Ravid, 2013, p. 7). The research is usually performed by educators to improve their practice and consequently enhance their student’s knowledge. Action research is informal, dynamic, and incorporates participants in the natural setting (Duesbury & Twyman, 2020). A key element to action research is to collaborate with others who share in the focused problem (Herr & Anderson, 2015). The researcher starts with a question concluding with knowledge application that may lead to additional questions and a new course of research using a reflective process (Herr & Anderson, 2015).

This action research is based on a convergent mixed methods approach (Creswell & Plano Clark, 2018). A mixed methods study utilizes the strengths of both quantitative and qualitative approaches in an attempt to balance objectivity and subjectivity (Efron & Ravid, 2013). Creswell and Plano Clark (2018) explain that this approach may shift the research from a postpositivist worldview to a constructivist perspective and “the researcher may then bring a dialectal perspective when interpreting the two phases together” (p. 42). This study design intended to converge the results of the quantitative and qualitative data to enhance understanding. Comparing the data results of the surveys and semi-structured interviews assisted in gathering a more complete picture of the research problem.

Setting

The setting of this research study was in a city located in the Southeast with a population of approximately 38,000 residents. The researcher is an itinerant speech-

language pathologist working primarily in Creekview Middle School (pseudonym) serving 6th, 7th, and 8th grade students. This school was the primary focus of the study. The school has a student population of 965 students and a student/teacher ratio of 22:1. It is a Title 1 school with 48.1% of the students receiving free or discounted lunch. The current student population demographics are as follows: African American 46.1%, Caucasian 43.2%, Hispanic 4.2%, Asian 3.1%, two or more races 3.0%, Pacific Islander 0.2%, and American Indian 0.1%.

Pseudonyms were used in this research study to protect the identity of the participants and the setting.

Participants

The participants involved in this research were specialists at the secondary school level (school psychologists, special education teachers, and a speech-language pathologist). This nonrandom purposive sampling was based upon the participant's particular experience in special education, their knowledge of special education, and their willingness and availability to participate in the research (Etikan et al., 2016). One school psychologist and three special education teachers are based in the researcher's school. Since the researcher-practitioner is the only speech pathologist at the school of primary focus and therefore could not participate in the surveys and interviews, one district secondary SLP was added to the study. (The other secondary SLP in the school district was willing but unable to participate due to family circumstances that arose at the onset of the study.) The participants represent specialists that would identify, assess, and

remediate students with dyslexia in a secondary school. The following list describes the current general job descriptions of the participants:

1. **Secondary School psychologists:** The school psychologists administer a battery of tests to every student being evaluated for special education services. They test IQ, math, and reading skills. If there are communication concerns brought up during the evaluation planning meeting or beforehand by the parent or teacher, then I am asked to screen and/or evaluate the students.
2. **Secondary Special Education Teachers:** If the student qualifies for services in reading, writing, or math, the special education teachers write the IEPs and implement services. Reading remediation usually involves comprehension and reading fluency skills.
3. **Secondary Speech-Language Pathologist:** SLPs screen and evaluate students with suspected voice, language, articulation, and fluency delays. They provide hearing screenings if needed and interventions for all voice, fluency, articulation, and language skills. Language skills worked on cover a large range of skills including assistive technology, social skills, oral language, auditory processing, and writing.

Because of the secondary school setting of this research study, general education teachers were not included. In the secondary school setting, most students with reading delays have been identified and are receiving some level of support services. Therefore, dyslexia awareness of the secondary general educators is not critical at this initial stage of investigation into dyslexia identification, assessment, and remediation.

Table 3.1 *Participant Profiles*

| Participants (pseudonyms) | Profile |
|---|---|
| 1. Sally (school psychologist) | Sally has been working in this school district for most of her career. She is reserved and soft-spoken but still friendly. Sally is very thorough, conscientious, and detail oriented. |
| 2. Paola (school psychologist) | Paula has recently transferred to this school district. She is cautious, reserved, and soft-spoken. |
| 3. Juanita (school psychologist) | Juanita has worked in the school system for 25+ years. Juanita has worked in the district for most of her career serving the same two schools. She is quick thinking, a fast-talker, and very decisive. |
| 4. Monique (special educator) | Monique has worked in the school system for 25+ years. Monique is adaptable, quick-minded, and conscientious. She has had several positions during her career in both general and special education settings. |
| 5. Sasha (special educator) | Sasha has worked in the public school setting for her entire career. She has worked in several school districts. Sasha is a confidant to many in our school. She is patient, insightful, and knowledgeable. |
| 6. Kelly (special educator) | Kelly has worked in the school system for 25+ years. Kelly has worked in several schools in the district. She is hard-working, caring, and sensitive. |
| 7. Rosalie (SLP) | Rosalie has worked in hospital and school settings. Rosalie is knowledgeable, opinionated, and unafraid to ask questions. |

The participants in bold print in the table above were the interviewees in the study. They were selected because they volunteered for the additional task of being interviewed.

Intervention

This action research case study investigated the implementation of a protocol to assess and provide remediation for students with dyslexia. In assisting these students, the aim is to increase the literacy rates in this South Carolina school district. A 60-minute training session on dyslexia was administered to the secondary school participants in the study. The purpose of the training session was to increase awareness and knowledge about dyslexia, assess attitudes towards implementing a dyslexia protocol and assess the attitudes of including SLPs in the protocol. The training session was provided via Google Meet after school hours at a time convenient to the participants. The training session began with a pre-survey. The pre-survey (Appendix B) was administered at this time to decrease the probability of the participants researching the answers and increase the accurate measurement of the training's effectiveness. A 60-minute interactive PowerPoint training presentation was then be provided about dyslexia highlighting the SCDE dyslexia handbook. Immediately following the presentation, a post-survey was given to assess the impact of the training session.

Data Collection Instruments

This research study used multiple sources of data to determine the impact of a training session on the knowledge and attitudes about the identification, assessment, and remediation of dyslexia in schools, including the SLP's role in the process. Data were collected from April to June of 2021. Using different sources of data ensured that I could create a broader view of the secondary school participant's attitudes, perceptions, and knowledge about dyslexia in a school setting.

Survey: This mixed methods research began with Respondents' Expertise and Attitudes Dyslexia Survey (READS) (Appendix B) administered to professionals (3 special education teachers, one speech-language pathologist, and 3 school psychologists) in my school district, primarily from my base school. This pre-survey consisted of one definition and eight multiple-choice questions assessing knowledge and awareness of dyslexia, and five Likert questions to assess the participant's attitudes towards assessing and remediating dyslexia in the secondary school setting.

A pilot test of READS (Appendix B) was performed by two district speech-language pathologists that were not part of this research study to ensure the accuracy and preciseness of the instrument. Information for the survey came from my research and the SC dyslexia handbook. This handbook was developed by a committee of experts from SC universities, SC school districts, and the SC State Department of Education.

Interviews: Semi-structured interviews were conducted with one district secondary speech-language pathologist, two school psychologists, and three special education teachers. The purpose of the interviews was to ask follow-up questions and/or answer questions by interviewees. The individual interviews were conducted in-person and on Google Meet, depending upon the preference and convenience of the participants. These interviews lasted approximately 30 minutes long. Responses were recorded and later transcribed. The interviewees will remain anonymous: the researcher used only job titles and pseudonyms. The school and school district were not disclosed during this research.

The following questions were used in the interviews:

1. What impact, if any, did the training have on your knowledge about the identification, assessment, and remediation of dyslexia in the schools?
2. How do these results affect your thoughts about the identification, assessment, and remediation of dyslexia in the schools?
3. How do you feel about SLPs being involved in the identification, assessment, and remediation of dyslexia in the schools?
4. How could a dyslexia protocol be implemented in secondary schools?

A pilot test of these interview questions was performed by two district speech-language pathologists that were not involved in the study to assess the clarity and increase validity.

Observations: Observations were made during the interviews. Descriptive notes were taken immediately following each interview while the observations were still fresh. The observations included nonverbal behaviors, body language, unusual background activity in the participants' setting, and any background activity during the interviews. Since Google Meet was used during two of the interviews and my base school was used for the other four, background activity was deemed important information to assess the participants' attention, behaviors, and possible interference to complete responses.

Table 3.2 *Research Questions, Method, and Type*

| | Research Questions | Data Collection Instrument | Data Collection Type |
|------------------------|--|---------------------------------------|---------------------------------|
| Research Question 1 | What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' knowledge about identifying, assessing, and remediating students with dyslexia in schools? | READS Pre and Post-surveys | Quantitative |
| Research Question 2 | What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' attitudes about identifying, assessing, and remediating students with dyslexia in schools? | READS Pre and Post-surveys | Quantitative |

| | | | |
|---------------------|---|----------------------------|-------------|
| Research Question 3 | What are the secondary school specialists' perceptions about the SLP's involvement in the protocol of identification, assessment, and remediation of dyslexia in schools? | Semi-structured interviews | Qualitative |
| Research Question 4 | What are the secondary school specialists' perceptions of how to implement a protocol to identify, assess, and remediate dyslexia in a secondary school setting? | Semi-structured interviews | Qualitative |

Data Collection Methods

This research study began with the collection of quantitative data from a pre-survey (Appendix B). A dyslexia training was then be provided to the participants followed by a post-survey. The calculations from the pre and post-surveys were then be compared. Qualitative data was taken from the follow-up interviews.

Quantitative data: A Google classroom labeled “Dyslexia” was established and each participant was asked to join the week before the training. The morning of the training session, I sent a message for the participants to complete the Respondents’ Expertise and

Attitudes Dyslexia Survey (READS) (Appendix B) which was posted in the Google classroom. The link to the Google Meet training session was also posted on the Google classroom page with a reminder message. The READS (Appendices B/C) was administered again as a post-survey immediately following the training.

Statistical data (percentages) were taken from the multiple-choice responses retrieved from the pre and post-surveys and represented in tables. These tables include the total participants' percentages correct and the changes in accuracy from pre to post-survey. The Likert questions are represented in bar graphs displaying pre and post data.

Qualitative data: The individual semi-structured interviews were conducted in-person and on Google Meet depending upon the preference and convenience of the participants. These interviews lasted approximately 30 minutes long. All interviews were recorded and transcribed using the Voice Pro application on my password-protected personal phone. I reviewed the transcriptions and recordings making corrections as some words and phrases were not transcribed accurately. All participants were given the option of reviewing the transcriptions to ensure accuracy but declined.

The transcriptions were then printed, read, and highlighted to begin using open coding. Notes were taken in the margins to begin the initial coding process. In vivo codes were used to detect patterns (Saldaña, 2009). In vivo coding places significance on the participant's actual words. An example of this process was using one participant's quote, "cause that's like the trying to implement the whole RTI in general in middle school and high school. I mean, it's just not happening" along with similar quotes from other participants to develop a theme.

The interviewees will remain anonymous: the researcher only used job titles. The school and school district will not be disclosed during this research.

Data Analysis

The results of the READS (Appendices B/C) administered to the participants were analyzed using descriptive analysis. Percentages for each survey question were calculated and represented in tables. Pre and post-survey responses were compared to determine the impact of the dyslexia training session. The additional comments of the survey were also represented in a table. Likert question responses from the pre and post-survey were represented using bar graphs.

The quantitative results were given to six participants: one secondary speech pathologist, three special education teachers, and two secondary school psychologists in the researcher's district. The researcher interviewed each of these participants using a semi-structured approach. The recordings were transcribed and the constant comparative method was used to develop themes of information (Mertler, 2017). After constructing categories of the data, analytical coding was then used to further interpret and reflect on common themes. Relationships between the participants' responses emerged from this continued analysis. This mixed methods approach first provided statistical data to help generate qualitative responses in the interviews.

Rigor and Trustworthiness

“Rigor refers to the quality, validity, accuracy, and credibility of action research and its findings” (Mertler, 2017, p. 25). For the study to be considered rigorous, the researcher must establish that the data collection instruments, procedures, and analysis of

the findings are accurate (Efron & Ravid, 2013). By verifying credibility, transferability, dependability, and confirmability this can be achieved (Creswell & Poth, 2018).

Credibility was sought in this study by using the triangulation of data. Qualitative and quantitative data were collected and provided equal attention and importance. Several data sources were converged and compared to understand the problem of practice (Mertler, 2017). To achieve transferability, thick rich description was used in the semi-structured interviews so the reader could have a clear picture of the setting. This qualitative data allowed the participants' perspectives to be heard and increased the study's trustworthiness (Efron & Ravid, 2013). Dependability and confirmability were achieved by using an auditing process. This auditing process began with offering member checking with the participants (Merriam & Tisdell, 2016). All participants reviewed the interview transcripts. I then shared my findings with my dissertation advisor to review the data results.

To ensure the validity of the self-made survey (the READS) used in this study, the primary source of information was derived from the SC dyslexia handbook. This handbook was developed by a team of experts from SC universities, the SC Department of Education, and SC school district personnel. This collaborative publication, along with peer-reviewed information gathered by the researcher, were the foundations for the dyslexia training session and survey used in this study. A peer review of the READS (Appendix B) was also made by two speech-language pathologists not involved in this study to ensure accuracy and clarity.

Ethical Considerations

Research ethics are an important part of the research process, particularly studies involving human participants. Treating the participants with honesty and sincerity and adhering to the view of “doing no harm” (Mertler, 2017, p. 40).

The first step in adhering to ethical standards was achieved by obtaining permission from the university’s IRB to proceed with the study. After this was granted, permission was sought and granted by the district administration with written consent to perform the research. An informed participation form was given to each participant assuring their anonymity as well as that of the school district with the use of pseudonyms (Efron & Ravid, 2013).

Mertler (2017) discusses three important principles in conducting research: the principle of beneficence, the principle of honesty, and the principle of importance. The principle of beneficence states that the research should be beneficial. This study’s purpose was to increase awareness of dyslexia in the pursuit of helping students develop increased literacy skills. The principle of honesty was achieved in this study by the researcher’s openness with the purpose, data collected, and reporting of the results with the participants. Lastly, the principle of importance was adhered to with the potential relevance of the research contributing to the researcher’s and participants’ setting and practice. By increasing their awareness of dyslexia, the participants can help current and future students receive the remediation and accommodations necessary to be successful.

Reflection of the researcher’s subjectivity and bias is key to ethical considerations. Efron and Ravid (2013) discuss reflexivity as “self-awareness and taking into account the

potential impact of one's values, worldview, and life experience" (p. 57) in the research process including the collection and interpretation of data. My belief in the importance of dyslexia awareness and the role that SLPs can play in the identification, assessment, and remediation process was outlined in chapter one. Using methods described in the 'Rigor and Trustworthiness' section of this chapter, including peer reviews of quantitative instruments, I hoped to balance any subjectivity. I also used reflection notes throughout the research process to monitor my subjectivity.

Summary

This convergent action research study was designed to investigate the impact of a training session on the knowledge and attitudes of key professionals about the identification, assessment, and remediation of dyslexia in secondary schools, including the role of speech-language pathologists. The participants of this study were secondary special education teachers, school psychologists, and a speech-language pathologist. This is a new concept as dyslexia is not currently identified in this school district nor are speech-language pathologists generally included in the remediation of reading disabilities. Surveys and semi-structured interviews were utilized to obtain data for this study. A mixed methods approach was conducted using quantitative data from the survey results of the specialists to be reflected upon in interviews with an SLP, two school psychologists, and three special education teacher participants using qualitative measures. The district and participants were not be identified by name.

CHAPTER 4

FINDINGS

The goal of this mixed methods action research study was to determine the impact of a dyslexia training with key school personnel in a district that is not specifically addressing dyslexia. With only 34% of fourth-grade students in South Carolina reading at grade level (Greenho, 2016) and statistics of dyslexia affecting approximately 20% of the population and comprising 80% of all learning disabilities (Shaywitz & Shaywitz, 2020), this topic was deemed important for me to investigate. Since dyslexia is a reading impairment and reading involves language, investigating the role of speech-language pathologists (SLPs) in the identification, assessment, and remediation of dyslexia was explored. SLPs have expertise in all areas of language, including phonology, a primary weakness of dyslexic individuals (Prestes & Feitosa, 2017). However, there is a reluctance by SLPs to get involved in what is viewed as “reading areas”, and an absence of regard from other educators as professionals who are trained to work with students requiring reading interventions. Another added dynamic of this research was the secondary school setting. This added component was important because students are expected to read to learn by this age, not learn to read. Unfortunately, many students have not mastered the literacy skills taught in the early grades such as phonemic awareness, an area of phonology critical in the area of reading. Therefore, this study focused on the

speech-language pathologists' role in the identification, assessment, and remediation of dyslexia in a secondary school setting.

The research questions directing this study were:

1. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' knowledge about identifying, assessing, and remediating students with dyslexia in schools?
2. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' attitudes about identifying, assessing, and remediating students with dyslexia in schools?
3. What are the secondary school specialists' perceptions about the SLP's involvement in the protocol of identification, assessment, and remediation of dyslexia in schools?
4. What are the secondary school specialists' perceptions of how to implement a protocol to identify, assess, and remediate dyslexia in a secondary school setting?

Seeking answers to these research questions, a convergent mixed methods action research study as discussed in chapter three was utilized. Both quantitative and qualitative data were merged to determine if a dyslexia training would impact the knowledge and attitudes of the secondary school research participants (school psychologists, special education teachers, and a speech-language pathologist) about addressing dyslexia in the schools as our district does not currently do so.

The quantitative data consisted of pre and post results of the Respondent Expertise and Attitudes Survey (READS) (Appendices B/C) which was created for this research. Nine of the questions pertained to knowledge about dyslexia and five were Likert questions to assess attitudes of addressing dyslexia in the schools. The data of the pre and post-survey were compared to assess any changes in the participants' knowledge and attitudes about dyslexia. The qualitative data consisted of semi-structured interviews with six of the seven training participants and observations made during the interviews. These six participants were selected to be interviewed based on their volunteering for the task. Observations during the interviews and descriptive notes were taken immediately following were also included in this research. The triangulation of data sought to develop a richer understanding of the results to present a more complete representation of the participants' knowledge and attitudes about addressing dyslexia in the schools.

Data Analysis Results

As stated, both quantitative and qualitative data were collected for this research. Quantitative data was collected using the READS (Appendices B/C) developed specifically for this research, and qualitative data was derived from semi-structured interviews with the majority of the secondary school participants and general observations made during the interviews. First, the quantitative and qualitative data were analyzed independently. Second, I used triangulation of both sets of data to seek a richer understanding and clearer answers to my research questions.

Quantitative Results

Quantitative data were derived from the pre and post-survey results of the READS (Appendices B/C). The results of the pre and post-surveys were compared to determine the impact of the dyslexia training on the knowledge and attitudes of the secondary-level participants about addressing dyslexia in the schools. The READS consists of nine questions (eight multiple-choice and one short answer question) on dyslexia knowledge and five Likert questions to ascertain attitudes about addressing dyslexia in the schools. The following tables (4.1-4.10) and figures (4.1-4.5) explain the comparative results of each question on the pre and post-administration of the READS. The first question on the READS was to define dyslexia. Table 1 displays the responses and demonstrates the participants' broadening understanding of the definition. Tables 4.2-4.9 are listed in order of the READS post-survey accuracy level from highest to lowest. The percentages range from 42.9% to 100% accuracy on the post-survey. The positive change in accuracy levels from pre-survey to post-survey range from 14% to 100%. There were no negative changes in percentages correct from pre-survey to post-survey. This suggests that the participants increased their knowledge about dyslexia after the training.

Table 4.1 *READS Results: Definition of Dyslexia*

| Question | Pre-survey themes | Participant number (N=7) | Post-survey themes | Participant number (N=7) |
|---|---------------------|--------------------------|----------------------|--------------------------|
| How would you define dyslexia? (short answer) | Letter confusion | 4 | Neurobiological | 2 |
| | | 4 | Learning disability | 6 |
| | Reading difficulty | 2 | Reading difficulty | 4 |
| | Learning disability | | Decoding difficulty | 3 |
| | | | | 1 |
| | | | Phonological deficit | 1 |
| | | | Writing difficulty | 1 |
| | | | Spelling difficulty | 1 |
| | | Word recognition | | |

There was a definite expansion of concepts between the pre and post-survey definitions of dyslexia with the addition of neurobiological, writing, spelling, decoding, and word recognition themes. The myth of letter confusion as a component of dyslexia was eradicated and noted by the exclusion of it in the post-survey responses.

Table 4.2 *READS Results: Dyslexia Percentage*

| Question | Pre-survey percentage correct | Post-survey percentage correct | Change in accuracy |
|---|----------------------------------|--------------------------------------|-----------------------|
| Dyslexia comprises __ % of all learning disabilities | 0% | 100% | +100% |
| a. 20 | | | |
| b. 50 | | | |
| c. 75 | | | |
| d. 80 | | | |

Note: the boldly printed answer is the correct response.

Participants were quite surprised by this number during the presentation. Some comments made during the training and the interviews were, “Wow, I can’t believe it’s that many!” and “If there are that many students with it, we need to do something”. A “quick check” slide was also included in the PowerPoint slideshow inquiring about this. (Quick check slides were true/false questions placed throughout the slideshow to aid in comprehension and recall). This statistic appeared to resonate with the participants as reflected in the high accuracy rate in the post-survey (100%) and the high growth from pre to post-survey (0-100%).

Table 4.3 *READS Results: Comprehensive Evaluation*

| Question | Pre-survey percentage correct | Post-survey percentage correct | Change in accuracy |
|--|-------------------------------|--------------------------------|--------------------|
| Some areas of a comprehensive evaluation for identifying dyslexia are: | 71.4% | 100% | +28.6% |
| a. parent input, phonological awareness, oral reading fluency | | | |
| b. listening comprehension, indirect teacher observations, spelling | | | |
| c. decoding, rapid automatized naming, and verbal reasoning skills | | | |
| d. all of the above | | | |

Note: the boldly printed answer is the correct response.

Three of the participants are school psychologists whose major job responsibility is to evaluate students who are struggling academically. This may account for the high accuracy rate in the post-survey (100%). This may also explain the participants' pre-survey accuracy of 71.4% thus the low growth increase (28.6%) shown.

Table 4.4 *READS Results: Early Signs*

| Question | Pre-survey percentage correct | Post-survey percentage correct | Change in accuracy |
|-------------------------------------|----------------------------------|--------------------------------------|-----------------------|
| Early signs of dyslexia include: | | | |
| a. speech delays | 28.6% | 85.7% | +57.1% |
| b. difficulty rhyming words | | | |
| c. difficulty clapping hands | | | |
| d. a and b | | | |
| e. all of the above | | | |

Note: the boldly printed answer is the correct response.

This information was presented in the training with an emphasis on the link of speech delays to dyslexia which may explain the high percentage correct (85.7%) and the remarkable growth increase of 57.1% from pre to post-survey. Additionally, the difficulty of rhyming words was mentioned at two different points in the training; when discussing the early signs of dyslexia and when discussing phonological awareness.

Table 4.5 *READS Results: Components of Language Comprehension*

| Question | Pre-survey percentage correct | Post-survey percentage correct | Change in accuracy |
|---|----------------------------------|--------------------------------------|-----------------------|
| Components of language comprehension depicted in Scarborough's Reading Rope include: | 42.9% | 57.1% | +14.2% |
| a. phonics and vocabulary | | | |
| b. vocabulary and verbal reasoning | | | |
| c. visual acuity and phonological awareness | | | |
| d. background knowledge and phonological awareness | | | |

Note: the boldly printed answer is the correct response.

One of the participants was a speech-language pathologist with background knowledge of language comprehension and three are school psychologists who perform testing in verbal reasoning and vocabulary. This may account for the high accuracy of the pre-survey of 42.9% and therefore explain the low growth increase of 14.2% from pre to post-survey. Scarborough's Reading Rope has many components to it and has been its own topic of presentations. This complexity may have contributed to the low growth increase as well.

Table 4.6 *READS Results: Components of Dyslexia*

| Question | Pre-survey percentage correct | Post-survey percentage correct | Change in accuracy |
|--|----------------------------------|--------------------------------------|-----------------------|
| Which of these statements are true about dyslexia (check all that apply) | | | |
| neurobiological origin ✓ | | | |
| specific learning disability ✓ | 29% | 43% | +14% |
| often due to a phonological deficit ✓ | | | |
| individuals have low IQ | | | |

Note: 3 checked counted as the correct response.

This information was presented in one of the first slides of the training. Retention may have been limited due to the extensive amount of information that followed. Furthermore, a correct response required all 3 components to be checked which increased the complexity of the question. Despite the limited growth of the overall response change, three additional participants recalled the fact that dyslexia has a neurobiological origin and one additional participant remembered the phonological component.

Table 4.7 *READS Results: Secondary Consequences*

| Question | Pre-survey percentage correct | Post-survey percentage correct | Change in accuracy |
|--|----------------------------------|--------------------------------------|-----------------------|
| Secondary consequences of dyslexia include: | | | |
| a. reading comprehension deficits | 0% | 42.9% | +42.9% |
| b. poor decoding | | | |
| c. vocabulary deficits | | | |
| d. a and c | | | |
| e. all of the above | | | |

Note: the boldly printed answer is the correct response.

The information for this question was presented on its own slide and had a “quick check” question slide in the PowerPoint presentation to assist in recall. The answer choices included “poor decoding” which some participants chose in part by selecting “all of the above”. *Poor decoding* is a primary consequence of dyslexia, not a secondary consequence as the question specified. Participants may have concentrated on the term *consequence* and thereby not determining the difference between the two categories of primary and secondary. This is a possible explanation for the low accuracy rate in the post-survey.

Table 4.8 *READS Results: RTI Steps*

| Question | Pre-survey percentage correct | Post-survey percentage correct | Change in accuracy |
|---|----------------------------------|--------------------------------------|-----------------------|
| How many steps are in the RTI process to determine the need for the identification of students with dyslexia? | 0% | 42.9% | +42.9% |
| a. 4 | | | |
| b. 5 | | | |
| c. 6 | | | |
| d. 7 | | | |

Note: the boldly printed answer is the correct response.

Although there was a high change in accuracy from pre to post-survey, the final percentage of only 42.9% may be explained by the information being presented near the end of the training when participants were tired. The data was also provided by showing the SC dyslexia handbook to the participants rather than displaying it on a PowerPoint slide. This was the only question on the READS (Appendices B/C) to not have the information directly on a slide. Additionally, all of the participants are secondary specialists. Response to intervention (RTI) is generally not conducted at the secondary level in our school district so this information may not have been a priority to remember.

Table 4.9 *READS Results: Effective Reading Instruction*

| Question | Pre-survey percentage correct | Post-survey percentage correct | Change in accuracy |
|--|----------------------------------|--------------------------------------|-----------------------|
| Effective reading instruction for students with dyslexia include(s): | | | |
| a. balanced literacy | 0% | 42.9% | +42.9% |
| b. guided reading | | | |
| c. explicit and systematic instruction | | | |
| d. a and c | | | |
| e. all of the above | | | |

Note: the boldly printed answer is the correct response.

Information about effective and ineffective instruction was presented both by referring to the SC dyslexia handbook and using multiple PowerPoint slides. However, three of the participants are school psychologists who do not provide instruction as part of their job. This may account for the post-survey accuracy being only 42.9%. One of the choices for this question was “balanced literacy”. The term *structured literacy* was discussed in conjunction with the correct response of “explicit and systematic instruction” in the PowerPoint. Structured literacy uses explicit and systematic instruction whereas balanced literacy uses techniques like shared reading without skill sequencing. Although “structured literacy” was not a choice on the READS (Appendices B/C), the idea is that the word “literacy” resonated with the participants and resulted in the incorrect addition of *balanced literacy* as a correct response.

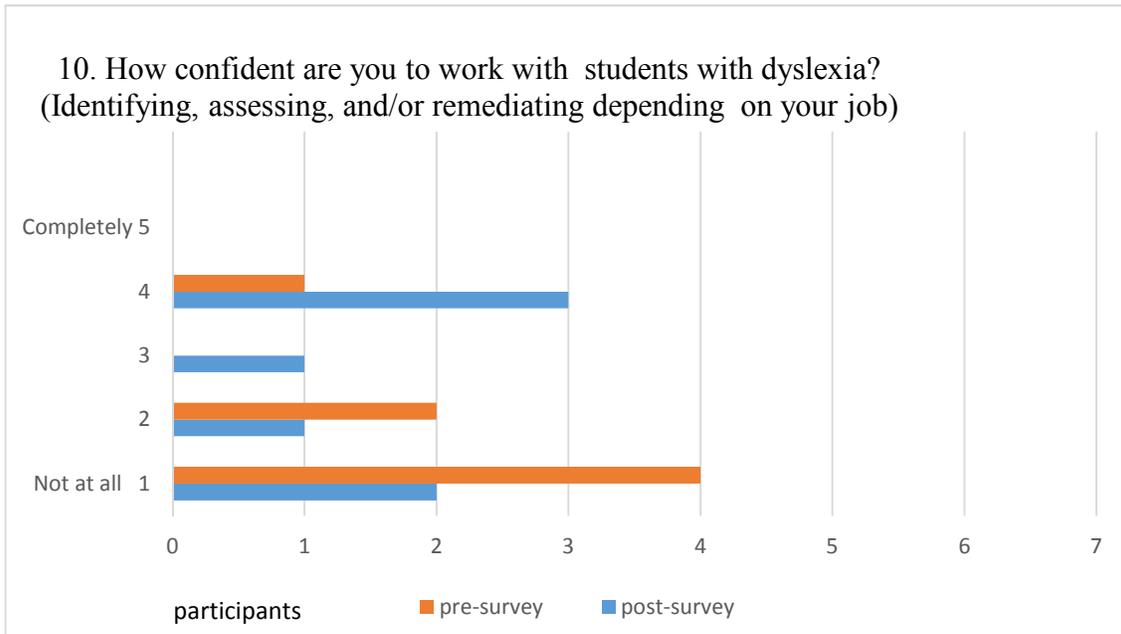


Figure 4.1 *READS Results: Participants’ Confidence Level in Themselves*

The confidence level rose but perhaps not as high as it may have if the question had not included all three components of “identifying, assessing, and/or remediating” students with dyslexia. The participants choosing “1” (not at all confident in working with students with dyslexia) decreased from 57.1% to 28.6% (4 to 2 participants). Two additional participants chose “4” on a scale of 1-5 confidence levels increasing from 14.3% to 42.9%, suggesting they had gained knowledge. Participants might have increased confidence in one or two of the areas (identifying, assessing, and remediating dyslexia) but not all three and therefore were hesitant to select a higher level. Some participants did comment at the end of the session and in follow-up interviews that additional training is needed. This also may be reflected in confidence levels not being higher in the post-survey.

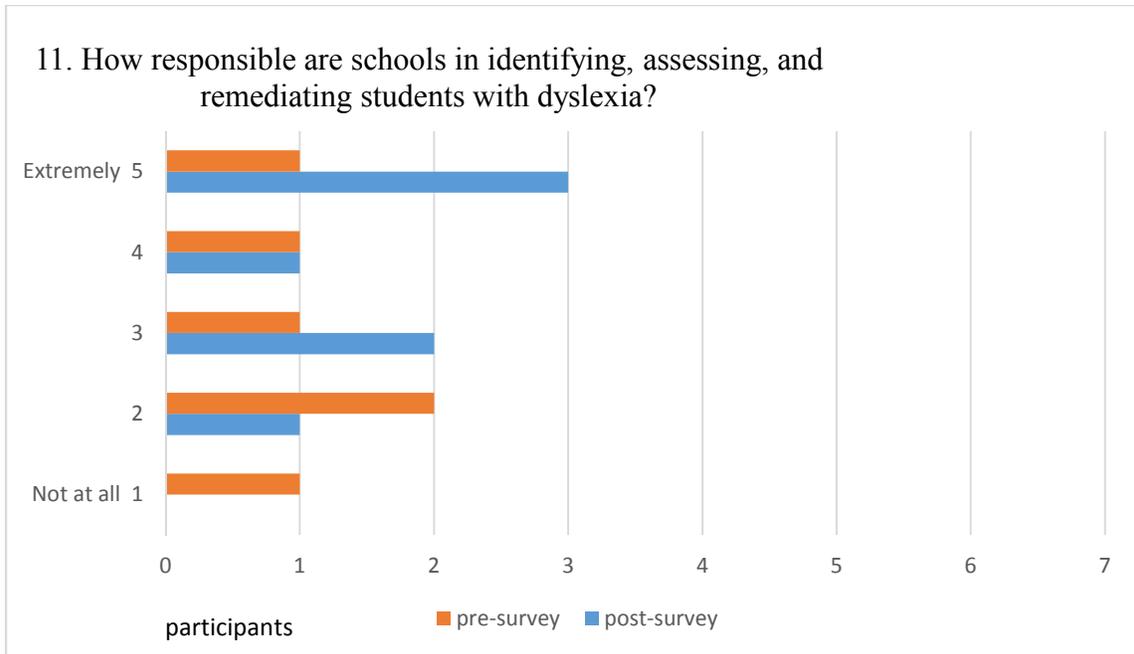


Figure 4.2 *READS Results: Responsibility of the Schools*

The participants judge the schools to be responsible in some capacity after this training with three participants rating “extremely” responsible. The hesitancy of some participants to select a higher level may have been due to the inclusion of all three components “identifying, assessing, and remediating” students with dyslexia. One of the school psychologists commented after the training that she would be hesitant to write *dyslexia* in a report and followed that statement with “we need more training”.

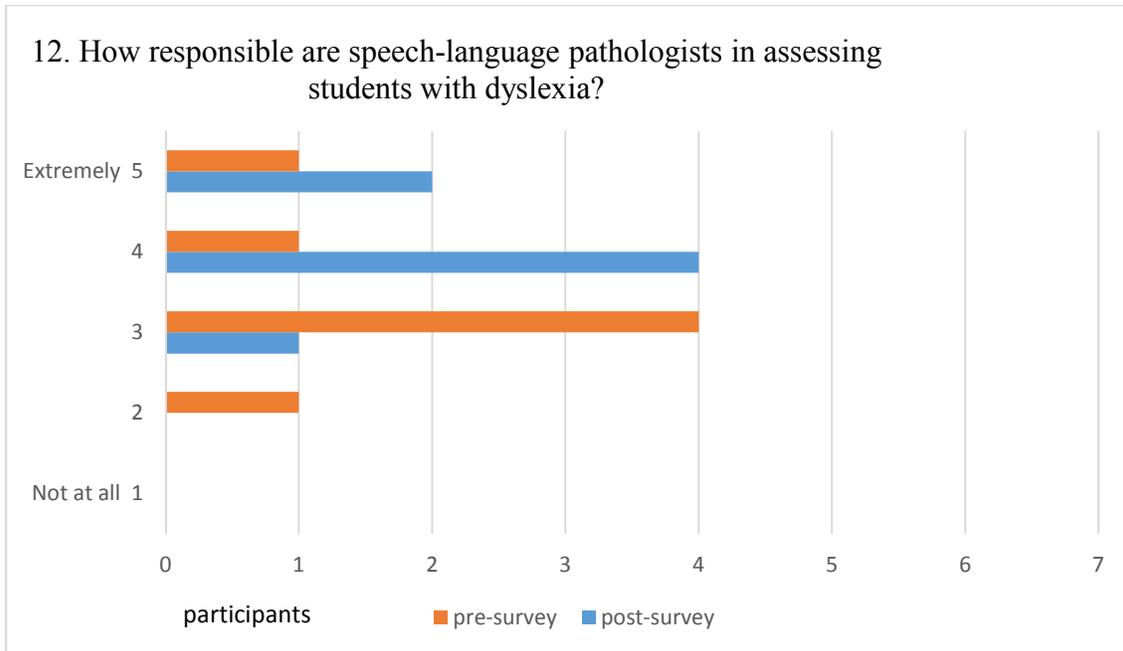


Figure 4.3 *READS Results: Responsibility of SLPs in Assessing Dyslexia*

This graph depicts that the participants feel that speech-language pathologists play a significant role in the assessment process to determine if dyslexia is present. This may be because SLPs have a strong knowledge of phonology, the primary deficit area of dyslexic individuals. As one participant remarked, “Y'all know more about this than we do.” The one participant who rated this question with a “3” may feel that the school psychologists can do all the testing if they had some additional training in dyslexia.

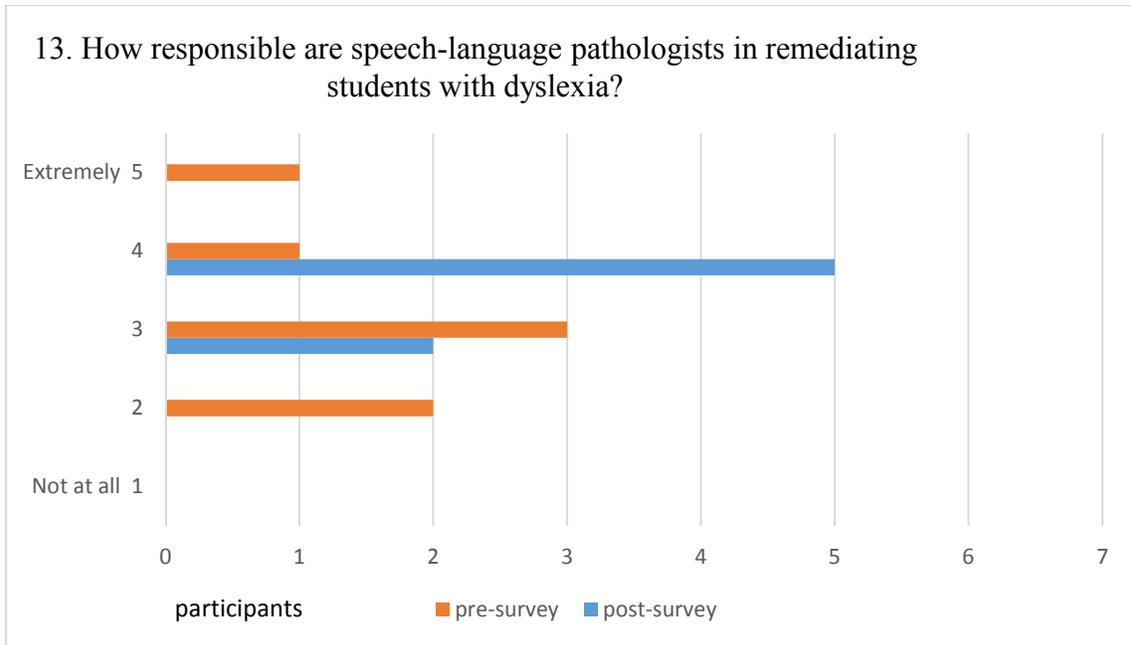


Figure 4.4 *READS Results: Responsibility of SLPs Remediating Dyslexia*

The responsibility level of the speech-language pathologists increased as it did in question 12 (Figure 3) from pre to post-survey. However, zero participants selected “extremely” as a response to this question. The hypothesis for this is the participants’ roles in the schools. One is a speech-language pathologist who clearly stated her concerns for “caseload numbers skyrocketing” during her follow-up interview if SLPs are held responsible for working with dyslexic students. Three are special education teachers who may feel capable of providing these services since they already serve students with reading disabilities.

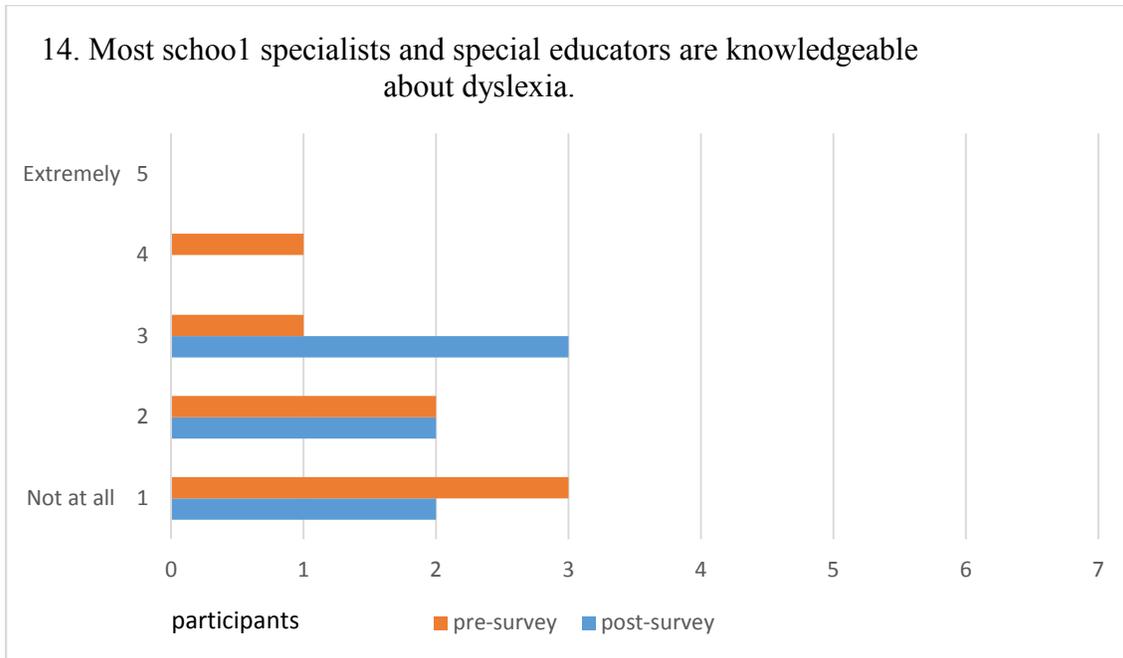


Figure 4.5 *READS Results: Confidence of Other’s Knowledge*

The responses to this question suggest that the participants have less confidence in other school professionals’ knowledge about dyslexia after the training. The hypothesis for this is if these participants didn’t know much of the information provided, then neither would other professionals. One participant stated in an informal conversation with the researcher after the training, “We never learned any of this in school.”

Table 4.10 *READS Post-Survey Comments*

| Question (Post-survey only) | Comments |
|---|---|
| 15. Please write any comments about what you heard today. | Thank you. This is so relevant. Great presentation. Excellent presentation. Can you share the slides so I can review them? Enjoyed your presentation. I enjoyed the presentation. You did a great job! Thank you for this teaching. It was very eye-opening and truly shows that we do need more training!!! |

This question was presented in the post-survey only to allow the participants the opportunity to make written comments about any aspect of the presentation. Six of the seven participants responded. One participant had an appointment to attend and most likely was the one who did not write a comment. The comments suggest that the participants have a definite interest in the topic of dyslexia. Three out of the six comments imply the participants see the importance of dyslexia knowledge in their jobs.

Summary of Quantitative Results

The READS (Appendices B/C) was composed of questions to assess the knowledge and attitudes of the participants regarding dyslexia. Tables 4.1-4.9 demonstrate an increase in dyslexia knowledge. With all questions, there was growth in learning about the identification, assessment, and remediation of dyslexia. All responses had a positive change in accuracy from pre to post-survey. The Likert questions (depicted in Figures 4.1-4.4) which assessed the participants' attitudes showed significant increases in the school's responsibility in the identification, assessment, and remediation of dyslexia, the participants' confidence levels with dyslexia knowledge, and the roles of speech-language pathologists in assessing and remediating dyslexia. However, Figure 4.5 demonstrated an overall decrease in the participants' confidence level of other school specialists' knowledge about dyslexia. The comments written in response to question number 15 (Table 4.10) suggest that this is a relevant topic that needs to be addressed further.

Qualitative Results

Qualitative data were derived from semi-structured interviews with six of the seven professionals who participated in the dyslexia training and observations made during the interviews. These six participants volunteered to be interviewed following the training presentation. The following questions guided the interviews:

1. What impact, if any, did the training have on your knowledge about the identification, assessment, and remediation of dyslexia in the schools?

2. How did the training change your personal thoughts, if at all, about the identification, assessment, and remediation of dyslexia in the schools?
3. How do you feel about speech-language pathologists being involved in the identification, assessment, and remediation of dyslexia in the schools?
4. How can we implement a dyslexia protocol in secondary-level schools?

Four out of the six interviews were conducted in-person at my base school and the remaining two interviews utilized Google Meet due to the participants' preference.

The analysis of the qualitative data began with in vivo coding which led to the development of categories and themes. The five prevalent themes found were:

1. Realization of the need to address dyslexia
2. Increased knowledge about dyslexia after the training
3. Concern of no RTI at the secondary school level
4. Speech-Language Pathologists' importance with dyslexia
5. Dyslexia specialist(s) needed in the schools

Theme 1: Realization of the need to address dyslexia

The first theme that emerged from the coding process was the realization of the need to address dyslexia. The initial stage of unfreezing in Lewin's change theory begins with realizing there is a need for change. Rejecting prior concepts and substituting them with new ideas is the basis of this theory (Kaminski, 2011). This mindset change was

exemplified by Monique, a special education teacher, who was very engaged during the interview as demonstrated by her asking questions and quickly responding to my questions and remarks. She stated, “I think this [dyslexia] is a big concern and nobody’s addressing it.” This theme was also indicated by such comments as “If it’s 80% of the learning disabilities, it is really, really important” provided by Paola, a school psychologist. Rosalie (SLP) stated, “This needs to be tackled early on, especially if they're trying to retain kids at third grade if they're not reading at a certain level” and Sasha, a special education teacher commented, “I think we need to start addressing it if so many kids have it.” Kelly, another special education teacher, stated “The training solidified my view that dyslexia needs to be tested and remediated systematically” indicating that she already had some knowledge that was confirmed by the training. Out of all of the participants, Kelly demonstrated the strongest passion for helping students with reading difficulties before my study began. Kelly continued our discussion even after the interview ended until her next class arrived.

The realization of the importance to address dyslexia by key personnel is crucial for change to occur. The participants in this study are some of the professionals who will be working with students who have reading difficulties; from the school psychologists who currently test students that are struggling to the special educators who provide instruction to those identified with reading delays. Providing the information from multiple sources, including the SC dyslexia handbook, that dyslexia can be identified and remediated in the school system to provide the impetus for change was a primary focus of this research study.

Theme 2: Increased knowledge about dyslexia after the training

The increase in knowledge about dyslexia was directly noted by five out of the six interview participants. This theme, like the first, can be linked to the unfreezing stage of Lewin's change theory (Havelock & Hamilton, 2004; Lewin, 1951). Increasing the participants' knowledge may substitute their previous misconceptions with dyslexia, replacing them with facts that can translate to a new way of thinking. Juanita (a school psychologist) stated, "It certainly increased my knowledge and made me want to learn more. It kind of showed me how much more I need to know". Rosalie (SLP) alluded to increased knowledge by answering:

Well, it certainly made me consider my students a little differently and it certainly will make me think in the future, Hmm, I wonder if anybody has looked at this as a component of a possible deficit as to why a student is not performing academically like they should be.

Sasha was quiet during the training and later told me privately that she was hesitant to answer my questions because she didn't want to look stupid. She laughed as she said this but I did notice during her interview that she gave short responses until the close of the interview, as if she may not have been comfortable until then. However, I did not observe any physical signs of discomfort. She appeared attentive with good eye contact and tilted of her head as if interested. One of her last comments during the interview was the following:

The dyslexia population gets kind of pushed to the curve and we don't get a lot of training or classes or anything. It's just like a small section in a book about it. But yet we get these kids who are usually unidentified and we're having to work with them. I wish they had a better system of identifying these kids in the school system so that we can get them the help they need and not wait until they're in the sixth, seventh, eighth grade. I think it [the training] definitely opened my eyes to some things,

Other participant comments that developed this theme were:

Kelly: Your training helped me to be aware of more indicators of dyslexia than I previously knew.

Paola: Your training was a lot more informative [than a previous training received] and it made sense.

The previous training that Paola referred to was discussed by the three school psychologists after my PowerPoint training. The three of them stayed on the Google Meet after the other participants had left and discussed a speaker who had come two years ago to provide professional development to the district's school psychologists. They all agreed his training was confusing and did not provide the information as clearly as mine did. One of the psychologists even asked me if she could have a copy of my slides so she could review the information.

Increasing the participant's knowledge about dyslexia was a primary focus of this research study. Starting with a small group of key secondary school professionals, all of whom I currently work with as a traveling SLP in the district, was important to me to begin a change of mindset about identifying, assessing, and remediating dyslexia.

Theme 3: Concern of no RTI at the secondary school level

Although the topic of Response to Intervention (RTI), or Multi-Tiered Systems of Support (MTSS) as it is now referred to in our district, was only briefly discussed in the training when highlighting the South Carolina Dyslexia Handbook, this was a recurring theme in the interviews. The fact that RTI is not being implemented at the secondary level was mentioned by three participants. Rosalie (SLP) stated, "They don't do RTI at [named secondary school]." Rosalie mentioned RTI at another point in the interview when discussing a recent situation when she was asked to screen a student. She asked the teacher making the request, "What about RTI?" and the teacher responded, "We don't do that in high school." I had a similar situation and when asking my district supervisor about it she stated, "I don't think they do RTI or MTSS in middle or high school" and she suggested I ask a school psychologist. Juanita remarked about RTI "Well, that's like right now I know [named secondary school] as a middle school's not doing it." A third participant, Paola remarked:

Like when you were talking about RTI, how can we catch them there?

We no longer have an RTI director so we don't have anybody over it.

Some schools aren't doing anything.

Paola later stated, “That’s like trying to implement the whole RTI in general in middle and high school. I mean, it’s just not happening.”

Paola continued with more comments about RTI throughout her interview developing a sub-theme of the effects of having no RTI director:

Comment 1: We no longer have an RTI director so we don’t have anybody that’s over it trying to make sure that everybody’s doing it the way it should be done, getting up and going to some schools. Some schools aren’t doing anything.

Comment 2: The whole system is shutting down (referring to RTI). I think until we get an RTI director and somebody that is over it, nothing will change.

RTI, or MTSS as it is now referred to, is a major component of the South Carolina Dyslexia Handbook. There is even an MTSS guidance document that outlines the system even further. The handbook states, “Every South Carolina local educational agency and state-operated program will implement and sustain the components of an MTSS framework so that all students will achieve...” (SCDE, 2020, p.8). The fact that it is not being implemented with uniformity at all schools, and not being utilized at all at the secondary level in my school district, is an important area that needs to be addressed to benefit all students who may need extra assistance to be successful, including those with dyslexia.

Theme 4: Speech-Language Pathologists’ Importance with dyslexia

The importance of the SLPs’ role in a dyslexia protocol was explicitly noted in the interviews. As the role of the SLP with dyslexia in the schools was a

significant aspect of the research, this theme was of great importance. Part of the theoretical framework of this study was the Phonological Model which highlights the fact that dyslexics have a weakness in the area of phonology (Navas et al, 2014; Snowling et al., 2020). Since SLPs have a strong background in phonology, including them in a dyslexia protocol would be a natural solution (Colenbrander et al., 2018; Hogan, 2018). However, in my experience, SLPs are not included in reading assessment or remediation.

This theme was developed by five of the six interview participants who commented:

- “Yeah, I do think ya’ll (SLPs) play a role.” (Monique, school psychologist)
- “I definitely want mine involved. I think ya’ll have a background base that we don’t have.” (Juanita, school psychologist)
- “The SLP has valuable information to share concerning all aspects of dyslexia.” (Kelly, special education teacher)
- “I think they should be involved somewhere in the process. They have skills that can help identify and test these students.” (Sasha, special education teacher)
- “And I think that a lot of times the speech therapist isn't part of the thing that they need to be. It sounds like y’all play an important piece.” (Paola, school psychologist)

The one participant who did not remark that SLPs play an important role was Rosalie, the SLP interviewed. Rosalie appeared attentive during our Google Meet interview, making good eye contact and sitting upright and close to the camera. Rosalie mentioned increasing caseloads that I stated in Chapter 1 as a possible deterrent to SLPs wanting to get involved with dyslexia. She stated:

I think that would make our numbers for our caseload skyrocket and that would make the numbers for special ed skyrocket and so I don't want to sound like a lazy speech therapist, but that concerns me. I feel like our national organization and our state organization think that we can solve everything and that it all needs to be us. I think they will push for that and I completely disagree.

She later further explained:

It needs to be done early. This is not something that needs to pop up in middle and high school.

The majority of the participants realize the importance of the SLP in working with dyslexia. Rosalie's reluctance to this thought was not a surprise since as mentioned in chapter 1, there was a collective gasp from the district SLPs when our district coordinator first brought up the subject of our possible involvement with dyslexia two years ago. Including the other secondary level SLP in the district may have added another perspective but as mentioned previously, she was unable to participate in the training.

Theme 5: Dyslexia Specialist(s) needed in the schools

The theme of needing a dyslexia specialist was an especially interesting one uncovered since it was never mentioned in the training PowerPoint presentation. This may be a result of the participants' feeling that they need more training themselves as mentioned in some of the interviews. Or it could be their awareness of specialized schools and clinics for dyslexics. Shaywitz (2020) recommends thirty-nine specialized schools in *Overcoming Dyslexia* and then devotes an entire chapter to the finest of these listed.

This theme of needing dyslexia specialists was suggested by four out of the six interview participants:

- “You need a specialist.” (Monique, special education teacher)
- “It would be nice if we had a specialist.” (Kelly, special education teacher)
- “...there needs to be somebody specifically trained to do this and, and probably more than one person in each school because the numbers are going to skyrocket. So whoever's in charge of this needs to research and know what they're doing and what works.” (Rosalie, SLP)
- “Each school, they've got to have somebody that's there at the school.” (Paola, school psychologist)

Employing specialists in the schools is an interesting point brought up by the participants. Having someone in each building that specializes in the remediation of students with decoding delays, including dyslexia, to teach an elective course in secondary schools is one solution to overcoming the number of students who are reading well below grade level. These specialists would utilize explicit, systematic instruction that incorporates the

structure, proper sequencing, and organization with repetition and daily practice that students with decoding delays need, including those with dyslexia (Al Otaiba, Rouse, & Baker, 2018; Mather et al, 2011).

The five themes that emerged from the semi-structured interviews collectively signify the secondary-level professionals' learning from the PowerPoint dyslexia training. The realization of the need to address dyslexia and the increase in participant knowledge is part of the unfreezing stage of Lewin's change theory. Replacing dyslexia misconceptions with facts, including a third theme of the speech-language pathologists' important role in a dyslexia protocol, is significant in creating a new dynamic in the schools. A fourth theme that emerged from the qualitative data was the participants' concern of no RTI at the secondary level. Since RTI (or MTSS as it is now referred to) is included in the South Carolina dyslexia handbook as the system for helping struggling students, this theme is relevant to making changes as well. The last theme of needing dyslexia specialists in the schools was especially interesting since it was not mentioned in the PowerPoint training. This theme may have developed as some of the participants perceived they needed more training in dyslexia.

Other considerations

Other categories developed from the interviews that were not as prevalent. The first was about dyslexia remediation. Two participants suggested that dyslexia instruction could be an elective class. Another participant noted that there should be some kind of pull-out specialized instruction. Paola noted that "in middle school, it might go over easier than high school." Kelly stated, "There needs to be a discussion with

administration and guidance because they do the scheduling...and say, okay, I need these four kids in the same group, same period.”

Student embarrassment was another category that two participants, both special education teachers, commented on. Sasha remarked, “They [students] are embarrassed to do the, you know, for me the awareness and sound blending at this age. They don’t want to do it in front of their peers.” Monique, speaking about students learning specialized instruction of basic skills noted, “They would do it and don’t care and then the next group could come in and they could be like, this is baby stuff and not want to do it. I mean, I can see different groups that it could work with. It just depends on the kids.”

Lastly, a few of the interview participants commented that they did not have much training on dyslexia with comments such as “It’s just like touch and go from a small section in a book about it”, “it [this study’s training] showed me how much more I need to know”, and “we were never taught that.”

Triangulation of Findings

Triangulating data in mixed methods research seeks to develop a richer understanding of the results. Allowing equal emphasis on the qualitative and quantitative data provides a comparison that creates validity and trustworthiness of the findings (Creswell & Creswell, 2018; Mertler, 2017). This convergence of data in addition to participant observations substantiates the results discovered (Creswell & Clark, 2018).

Analysis in this study began with examining the quantitative data. A pretest was administered before the dyslexia training, and a posttest was given immediately following. These results were compared to determine what impact the training had on the

participants' knowledge and attitudes concerning dyslexia in the school setting. All of the questions targeting knowledge of dyslexia showed a positive change in accuracy from pretest to posttest. The confidence level of the participants themselves working with students with dyslexia increased but the confidence in other specialists doing so did not increase overall. The results indicated that the participants increased their feeling that schools and speech-language pathologists have a responsibility in identifying, assessing, and remediating students with dyslexia after the training.

Semi-structured interviews with six of the training participants provided qualitative data for this study. The themes generated from the interviews were the realization of a need to address dyslexia in the schools, an increase in participant knowledge about dyslexia, concern that RTI is not being done in secondary schools, the importance of speech-language pathologists with dyslexia, and the desire for dyslexia specialists in the schools. These results largely support the quantitative results while adding a few more components.

Descriptive notes were taken immediately following the interviews while my observations were still fresh. These notes described the setting and the participants' behaviors. Most of the interviews, whether conducted in-person or using Google Meet, were in relatively quiet environments free from major distractions. The participants were judged to be attentive and interested, answering questions without hesitation or repetitions needed. Some asked questions seeking to gain more knowledge and most elaborated on the discussion of dyslexia instead of only answering the research questions posed. These observations corroborate the quantitative and qualitative data suggesting the

participants feel addressing dyslexia in the schools is an important issue and that speech-language pathologists play an important role.

Research Questions Answered

Research Question 1: What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' knowledge about identifying, assessing, and remediating students with dyslexia in schools?

Both the quantitative and qualitative data of this research study suggest an increase in the participant's overall knowledge of dyslexia. The first nine questions on the READS (Appendices B/C), a survey created for this study, assessed dyslexia knowledge. There was a positive accuracy level change from pre to post-survey with all of the questions. The qualitative data, elicited from semi-structured interviews with six of the participants who volunteered for the task, corroborated this with the emergence of the theme of increased knowledge after the training.

2. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' attitudes about identifying, assessing, and remediating students with dyslexia in schools?

Collectively, the quantitative and qualitative data of this study demonstrate a change in attitudes toward addressing dyslexia in schools, including the role of speech-language pathologists. The READS (Appendices B/C) was composed of five Likert questions to assess the participants' attitudes about dyslexia. The first four questions showed significant increases in the participants' perception of the school's responsibility

in the identification, assessment, and remediation of dyslexia, the participants' confidence levels with dyslexia knowledge, and the importance of the roles of speech-language pathologists in assessing and remediating dyslexia. However, the last Likert question assessing the participants' confidence in other professionals' knowledge about dyslexia decreased after the training. The qualitative data, emerging from semi-structured interviews, revealed a theme of the participants' new belief that there is a need to address dyslexia in the schools, corroborating the quantitative data results.

3. What are the secondary school specialists' perceptions about the SLP's involvement in the protocol of identification, assessment, and remediation of dyslexia in schools?

Two Likert questions on the READS (Appendices B/C) addressed the participants' perceptions about the responsibility of SLPs in working with dyslexic students (assessment and remediation). On both questions, there was an increase in most participants from a score of 3 to 4 on a scale of 1 (not responsible) to 5 (extremely responsible). The theme of the importance of SLPS with dyslexia that emerged from the interviews substantiates the quantitative findings. An interesting finding from this question was that the only participant who did not support the SLPs involvement was the SLP who fears the caseload increase this may cause. This was addressed in chapter 1 as a possible hindrance to SLPs wanting to get involved in a dyslexia protocol.

4. What are the secondary school specialists' perceptions of how to implement a protocol to identify, assess, and remediate dyslexia in a secondary school setting?

This question was answered by the six participants involved in the interviews in two ways. The theme of the need for dyslexia specialists in the schools was the first

possible solution to implementing a dyslexia protocol. These responses were not specifically targeting the secondary schools but were enveloping all school levels. This theme was significant because having dyslexia specialists was not brought up during the PowerPoint training.

Some categories that emerged from the interviews also answered this research question. One was the inclusion of administrators in a discussion about scheduling for dyslexic students so that they can be grouped for instruction. Another category was that the remediation could take place as an elective class. Lastly, one participant mentioned specialized pull-out instruction was necessary.

Summary

Using a mixed methods action research study, answers to the following questions were sought to determine the impact of dyslexia training with secondary school participants:

1. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' knowledge about identifying, assessing, and remediating students with dyslexia in schools?
2. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' attitudes about identifying, assessing, and remediating students with dyslexia in schools?

3. What are the secondary school specialists' perceptions about the SLP's involvement in the protocol of identification, assessment, and remediation of dyslexia in schools?
4. What are the secondary school specialists' perceptions of how to implement a protocol to identify, assess, and remediate dyslexia in a secondary school setting?

Quantitative data from the pre and post administration of the READS

(Appendices B/C) was used to answer the first two research questions. The results of the pre and post-surveys were compared and analyzed to reveal changes in the participants' knowledge and attitudes about dyslexia after the training. With all the knowledge-based questions, there was growth in learning about the identification, assessment, and remediation of dyslexia. All responses had a positive change in accuracy from pre to post-survey. The first four Likert questions which assessed the participants' attitudes showed significant increases in the participants' opinions of the school's responsibility in the identification, assessment, and remediation of dyslexia, the participants' confidence levels with dyslexia knowledge, and the participants' view of the importance of speech-language pathologists in assessing and remediating dyslexia. The final Likert question, however, demonstrated an overall decrease in the participants' confidence level of other school specialists' knowledge about dyslexia. The comments written in response to the training suggest that the participants feel dyslexia is a relevant topic that needs to be addressed further.

The qualitative data was derived from the semi-structured interviews with six of the seven training participants who volunteered for the task. These interviews revealed

four themes: the realization of a need to address dyslexia in the schools, an increase in participant knowledge about dyslexia, concern that RTI is not being done in secondary schools, the importance of speech-language pathologists with dyslexia, and the desire for dyslexia specialists in the schools. The descriptive notes of observations regarded during the interviews were taken immediately following were judged to reveal the participants were attentive and interested in the topics discussed.

The triangulation of all of the data suggests the secondary-level participants feel addressing dyslexia in the schools is of significant importance and that speech-language pathologists play a vital role in the identification, assessment, and remediation protocol. The quantitative and qualitative data collectively suggest that these participants have increased awareness and knowledge after participating in the dyslexia training with many commenting that they would want or need to know more about dyslexia in the schools to better serve the students.

CHAPTER 5

IMPLICATIONS AND RECOMMENDATIONS

This chapter includes a review of this action research study’s purpose, the research questions that guided the study, the methodology used, and the results. Following the review and findings, an action plan and future research implications will be discussed. Concluding this chapter will be a description of limitations and a reflection of the study.

Overview of the Study

Reading is an essential skill to not only facilitate learning, but to participate in everyday activities such as cooking a new recipe, driving, and knowing how much medicine to take. The first few years of school are centered on learning to read and after third grade the focus changes to reading to learn. Unfortunately, not all students are prepared for this focus change for reasons including learning disabilities such as dyslexia. It is estimated that dyslexia comprises approximately 80% of all learning disabilities (Shaywitz & Shaywitz, 2020). Research shows that students with dyslexia require an explicit, systematic approach to reading that focuses on phonological skills (Hulme & Snowing, 2017; Lindstrom, 2019; Shaywitz & Shaywitz, 2020). Therefore, addressing dyslexia specifically would be a natural solution to help a majority of students who are struggling with reading. However, my school district does not use the term “dyslexia” or

implement targeted interventions designed to remediate the particular delays these students require to achieve reading success. This situation becomes even more exacerbated in secondary level schools when the academic load and requirements increase.

Research Questions

To facilitate change in my school district, this action research study sought to determine the impact on awareness and knowledge about dyslexia, determine the perceptions about the speech-language pathologists' role in dyslexia, and determine the perceptions of how to implement a dyslexia protocol in secondary level schools with key secondary level educators and specialists primarily from my base school. The research questions guiding this research were:

1. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' knowledge about identifying, assessing, and remediating students with dyslexia in schools?
2. What impact does a training session have on secondary school psychologists', special education teachers', and speech-language pathologists' attitudes about identifying, assessing, and remediating students with dyslexia in schools?
3. What are the secondary school specialists' perceptions about the SLP's involvement in the protocol of identification, assessment, and remediation of dyslexia in schools?

4. What are the secondary school specialists' perceptions of how to implement a protocol to identify, assess, and remediate dyslexia in a secondary school setting?

Research Methodology and Results

Using a mixed methods action research study, the answers to the research questions concerning the impact of a training session on the participants' knowledge and attitudes about dyslexia, and their feelings about the role of speech-language pathologists (SLPs) were sought. Determining the awareness of school specialists and educators is a key component of dispelling myths of common characteristics (Gonzales & Brown, 2019) and combating misconceptions of who can diagnose dyslexia, if schools can use the term, and if it can be remediated (Shaywitz & Shaywitz, 2020). Including SLPs in a dyslexia protocol (Berninger et al., 2015) due to their expertise and knowledge of language development (Hogan, 2018; Shaywitz & Shaywitz, 2020; Spracher, 2001). Using secondary-level participants was of increased importance due to studies like Washburn et al. (2017) conducted that discovered these educators had a higher percentage of misconceptions about dyslexia. Increasing awareness and discounting preconceived ideas is the first step to helping these struggling students.

Quantitative data was derived from the administration of a pre and post-survey developed specifically for this study called the Respondents' Expertise and Attitudes about Dyslexia Survey (READS). The administration of the READS (Appendices B/C) before and after the dyslexia training revealed positive changes in the accuracy level of all knowledge-based questions. The questions determining the participants' attitudes demonstrated significant increases in the participants' opinions of the school's

responsibility in the identification, assessment, and remediation of dyslexia, the participants' confidence levels with dyslexia knowledge, and the participants' view of the importance of speech-language pathologists in assessing and remediating dyslexia, but a demonstrated an overall decrease in the participants' confidence level of other school specialists' knowledge about dyslexia. The comments written in response to the training suggest that the participants feel dyslexia is a relevant topic that needs to be addressed further.

Qualitative data from the semi-structured interviews with six of the seven training participants who volunteered for the task revealed five themes: the realization of a need to address dyslexia in the schools, an increase in participant knowledge about dyslexia, concern that there is no RTI (response to intervention) in secondary schools, the importance of speech-language pathologists in a dyslexia protocol, and the desire for dyslexia specialists in the schools. The theme of realization of a need to address dyslexia is important beginning with reducing teacher and student frustration (Memis & Kandermir, 2019) to reducing low self-esteem and mental health issues have been associated with individuals with dyslexia (Mather & Wendling, 2011; Shaywitz & Shaywitz, 2020).

Regarding the theme of the importance of speech-language pathologists (SLPs) in a dyslexia protocol, this corroborates the research that SLPs should be involved in dyslexia identification and assessment (Al Otaiba, Rouse, & Baker, 2018; Spracher, 2001) due to their knowledge of language development and tests recommended for diagnosis (ASHA, 2004), and in their natural role of providing remediation as they have a deep

understanding of the speech to print relationship and they know “which stimuli to use, how to interpret student errors, and how to give corrective feedback” (Moats, 2000, p.42).

Overall, the research study results suggest the secondary-level participants feel addressing dyslexia in the schools is of significant importance, speech-language pathologists play a vital role in the identification, assessment, and remediation of dyslexia protocol, and the participants increased their awareness and knowledge after participating in the dyslexia training. Many participants remarked that they want or need to know more about dyslexia which will be addressed in my action plan that follows.

Action Plan

The major advantage of action research is its approach for educators to analyze problems in the learning environment to improve the quality of educational practice (Mertler, 2017). By studying their practice, the researcher increases their learning to facilitate student growth (Efron & Ravid, 2013). Critical analysis of the data is an important step in action research to facilitate change in the perceived problem of practice (Mertler, 2017). Using professional reflection, the final step in my research is to develop an action plan.

Using the transformational leadership theory, I hope to produce changes by persuading key personnel that implementing a dyslexia protocol is necessary to help these struggling students. The transformational leadership theory “describes leadership as a process that changes people and organizations” (Northouse, 2021, p.3). Transformational leadership incorporates the 4 I’s: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Northouse, 2019). Idealized influence

refers to the leader being a strong role model and demonstrating morals and ethics. I use high standards of ethical conduct every day in my current position, following confidentiality procedures while carrying out my responsibilities. Inspirational motivation encompasses high expectations and inspiration of a shared vision with the followers. One of my goals in my action plan is to motivate other professionals to commit to a united vision of implementing a dyslexia protocol. The third “I” is intellectual stimulation which involves motivating followers to creatively problem-solve. I hope to stimulate my followers to be creative and innovative in organizing a dyslexia protocol. Lastly, individualized consideration is the leader’s ability to listen carefully while helping followers develop through challenges. This action plan will take a collaborative approach that incorporates listening to team members’ ideas and opinions. This transformational leadership approach will be utilized with the personnel in Figure 5.1 in my action plan comprised of four phases to incorporate a dyslexia protocol:

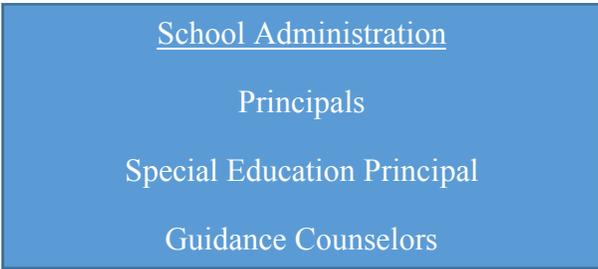


Figure 5.1 *Human Systems of Action Plan*

Phase 1, Collaborating with District Personnel:

First, I intend to set up a meeting with district administrators to discuss my research, my data results demonstrating the participants' increase in knowledge and change in attitudes about dyslexia in the schools, and the need for targeted interventions to help the students struggling with reading as a result of dyslexia. I will highlight the theme from the data that demonstrates the participants' realization of the need to address dyslexia in hopes that these key personnel have the same realization. As part of this discussion with the district administration, I plan to present the PowerPoint presentation that I used with my study participants. I intend to focus more on the South Carolina State Department of Education's dyslexia handbook and relate it to the secondary schools in particular. I will highlight the sections on multi-tiered systems of support (MTSS) which is the dominant topic in the handbook and how it is not being used in secondary schools. A suggestion for uniformity of the implementation of MTSS between all schools with an emphasis on identifying students suspected of having dyslexia will be presented. The terms MTSS and RTI (response to intervention) are often used interchangeably to describe tiered interventions of general education students. RTI was a theme in the qualitative portion of my research. The participants expressed concern with the absence of an RTI director and the lack of the system being used in the middle and high schools.

Second, I will ask district administrators for basic professional development for all K-12 educators in our school district to increase awareness of dyslexia indicators. In the collection of both my quantitative and qualitative data, my research demonstrates the

secondary school participants' desire to learn more about dyslexia and how to implement the knowledge in the schools to help support struggling students. My thought is that this will also be true of elementary professionals. Educators in grades K-3, special educators, reading interventionists, school psychologists, and speech-language pathologists will receive additional professional development as they will be the professionals directly involved in a protocol to identify, assess, and remediate students with dyslexia. The professional development would be ongoing if necessary to ensure that all educators receive adequate training.

Third, a discussion with district administrators on how to implement dyslexia services will take place. Another theme developed from the interviews with the participants was the desire for dyslexia specialists in the district. One participant suggested there should be one in every building. My action plan includes discussing the implementation of reading classes for dyslexic students, particularly in the upper grades where students are no longer learning the fundamentals of reading. In fact, after fourth grade, the emphasis in school is to read to learn, not learn to read. These reading classes would use an explicit, systematic approach to reading that emphasizes decoding skills initially and would be led by special education professionals who are specifically trained. The classes would utilize research and evidence-based curriculum with proven success with dyslexic and other struggling readers. An emphasis on the fidelity of the reading instruction will be of primary importance. At the secondary level, these reading classes would be taken as an elective, and credit would be earned.

Phase 2, Collaborating with Dyslexia Specialists

Many reading programs claim to be effective for dyslexic students and determining which one to use will be essential for effective remediation. During this phase, I will visit two dyslexia schools in my state. I will discuss with the administrators the staff training they provide and the programs they use. I will ask for a tour of the schools in my initial conversations so that I can see firsthand the teaching methods used. If possible, I will interview some teachers to elicit suggestions for program implementation.

Phase 3, Collaborating with School Administrators:

The information gathered from meeting with the district level administrators will be disseminated to the school administrators. This will include a report of my research findings, the need for differentiated instruction that can be provided in a specific reading class for dyslexic students, how these students can be identified and grouped, MTSS, and the benefits of the plan. A team task force will be used to determine the scheduling and designation of a dyslexia specialist in each school. For schools not implementing MTSS, a protocol will be put into place with cohesive guidelines from the district office. Plans to address dyslexia in a faculty meeting with professional staff members will be discussed.

The team task force will also discuss grant writing to pay for materials and training for the specialists. Suggestions provided by the dyslexia school administrators will be used to determine which program to use. Each school will participate in the grant writing process.

Phase 4, Collaborating with School Professionals:

This phase will involve meeting with school professionals, starting with the speech-language pathologists. The important role that speech-language pathologists (SLPs) play with dyslexia was demonstrated in the literature review and as a theme revealed from the data of this study. Leading a monthly speech interaction meeting with the Related Services Coordinator, I intend to present my PowerPoint training to the district speech-language pathologists. We then will discuss how SLPs can be involved in the identification, assessment, and remediation of students with dyslexia. Additional professional development training will be provided to SLPs as mentioned previously. This informational session will emphasize the current role SLPs already play in this process as a secondary result of working with students on literacy skills, in hopes of alleviating some concerns of this adding to their already list of required duties. The possibility of the district implementing dyslexia specialists will be mentioned. This may also alleviate concerns and possibly spark the interest of some SLPs to embark on this pursuit of taking on this role in their schools.

Next, an overview of dyslexia will be presented at faculty meetings in each school. If dyslexia specialists are selected and trained at this point, that designated person will conduct the overview. If not, I will record a presentation that can be shown at the faculty meetings since I cannot physically go to each building while conducting my current position's responsibilities. Professional development in dyslexia discussed with district administration will be provided at a later date so that all educators will gain knowledge in the identification, assessment, and remediation of dyslexia.

Phase 5, Collaborating with College Administrators:

In chapter 2, I discussed research that revealed educators and other professionals such as speech-language pathologists are not being instructed about dyslexia in their college preparation programs (Cochran-Smith, Keefe, et al., 2018; Drake & Walsh, 2020). This is something that needs to be addressed so as not to perpetuate myths about dyslexia such as that it cannot be identified and addressed in the schools. Knowledge about identifying characteristics is vital for all education majors, especially early childhood and elementary levels. SLPs need to be taught that it is in their scope of practice to work on literacy skills that can benefit students with reading difficulties and that they can be part of a protocol to identify, assess, and remediate dyslexia. Understanding what evidence-based instruction works for the students with dyslexia and the fidelity which it requires is important not only for the teachers providing instruction but also for the district and school administrators who select curricula. To help facilitate this, I will meet with my local college administration to consider the importance of disseminating this information. I will discuss my research and ask if dyslexia is being addressed in special education, general education, and speech-language pathology classes. If permitted, I will meet with the department chairs to collaborate on implementing dyslexia information into the current curricula.

Table 5.1 *Phase Timeline for Action Plan*

| Date | Activities |
|---------------------------------|--|
| Phase 1 December 2021 | Meet with District Administrators: Present PowerPoint highlighting SC Dyslexia Handbook/review results of research/Advocate for professional development in dyslexia for K-12 educators/Discuss MTSS uniformity/Dyslexia specialists |
| Phase 2 January 2022 | Interview administrators from dyslexia schools Visit local schools |
| Phase 3 February 2022 | Discuss MTSS with secondary school principals |
| March 2022 | Work with school administrators to assign a dyslexia specialist in each school/person will receive additional training/grant writing |
| April 2022 | Discuss with secondary level administrators how to schedule students (elective classes) |
| Phase 4 May 2022 | Present PowerPoint to SLPs at monthly interaction meeting Provide presentation video for faculty meetings Professional staff will receive professional development in dyslexia |
| Phase 5 June 2022 | Meet with local college administrators to discuss including more dyslexia training in special education and general education classes |

Suggestions for Future Research

The final component of action research according to Mertler (2017) is the reflecting stage which includes future exploration. The cyclical nature of this type of

research leads to additional questions and new research (Efron & Ravid, 2013). Although my data revealed a positive impact on the awareness and knowledge of dyslexia in the school setting, replicating this study to another researcher's environment or a larger setting could be considered. The findings were personal to my setting using a small sample of participants. Generalizing this to other schools and school districts nationwide utilizing a larger sample size is another possibility in the future.

As noted in chapter two and previously in this chapter, many college preparation programs are not preparing future teachers and specialists to identify and remediate dyslexia. White & Mather (2020) noted no difference in dyslexia knowledge between education majors and non-educational majors suggesting that teacher preparation programs are not explicitly educating teacher candidates. This will perpetuate the lack of knowledge and awareness necessary to assist students with dyslexia. Therefore, investigating how higher institutions of education are preparing teaching and specialist candidates about dyslexia is an important course for the future.

With the sample of seven participants in this study, the importance of the speech-language pathologist (SLP) in the identification, assessment, and remediation of dyslexia was established. Determining the specific ways SLPs can be a part of dyslexia protocols can be investigated in those districts that do not presently utilize their expertise. The literature review of this dissertation outlined the SLPs' knowledge and possible contributions for the identification, assessment, and remediation process that could be implemented. These implications could be used in the future to study how best to utilize the SLP expertise and foundational knowledge.

This research focused on the secondary school level since that is my setting. However, the importance of the early identification of students with dyslexia has been documented in research (Ferrer et al., 2015; Lindstrom, 2019; Shaywitz & Shaywitz, 2020; Spear & Swerling, 2019). Determining the awareness, knowledge, and attitudes of professionals in early childhood and elementary settings could be instrumental in other school districts. Broadening the knowledge about dyslexia in all states has increased but as noted in my study, is not disseminated in all schools and districts.

Professional development is an essential component to educating current educators and specialists about dyslexia. Several of my research participants stated their desire and need for additional training. Understanding the most effective method to conduct professional development to identify, assess, and remediate dyslexia in conjunction with a collaborative approach to the multi-tiered systems of support (MTSS) or response to intervention (RTI) process could improve the education of our students. Lastly, a recommendation would be to conduct a quantitative research study of the effectiveness of MTSS and RTI on students' literacy skills.

Study Limitations

The limitations of this study begin with the small sample size of the research participants. The participants were chosen because most were chosen for specific reasons which were outlined in chapter three. Conducting a study that incorporated a larger sample including special educators from other schools, general educators, administrators, and district personnel might have generated a broader view of the problem of practice in my district. However, my goal was to increase dyslexia awareness of special educators at

my base school, other secondary-level SLPs (although only one of the two was able to participate), and the district's secondary-level school psychologists.

Another limitation of this study may have been providing the dyslexia training via Google Meet. Due to COVID-19, this was judged to be the best and most convenient format for the participants. At the time of this study, there were enforced restrictions on in-person group meetings (i.e. staying six feet apart, wearing face masks). There was also much general anxiety by school personnel at this time about meeting in large groups. It was difficult for me to make observations during the training because my focus was on the PowerPoint presentation on my computer screen, and I did not have a full view of the participants as I would have with in-person training. Also, some participants had their cameras off. Although this virtual format was judged best during this unprecedented time, it may have hampered the participants' attention, involvement, and overall results.

Summary

This mixed-methods action research study investigated the impact of training on secondary-level school professionals' knowledge and attitudes about dyslexia, including the role of speech-language pathologists. My research was motivated by the frustration of watching students struggle to read and an acknowledgment that my district is not addressing dyslexia, a leading cause of this problem. Initiating the spread of awareness on this important topic with special educators at my base school, and with other key secondary-school professionals who could be influential in a future dyslexia protocol, was one of the reasons for this research. Increasing knowledge and shifting attitudes with professionals that interact with students demonstrating identifying characteristics of

dyslexia was intentional. One of my goals was to plant a seed of inquiry into these participants to propel change at the administrative and district levels. Using this bottom-up approach to improve my practice and professional growth and impact change for these struggling students was my ultimate objective.

My research findings demonstrate that these sample of educators and specialists from my district were unaware of the many key components of dyslexia, most importantly its prevalence and that it can be addressed in the schools. A key development from this study was the participants' acknowledgment of addressing dyslexia in the schools is of significant importance and that speech-language pathologists play a vital role in the identification, assessment, and remediation protocol. Both sets of data suggest the participants increased awareness and knowledge after participating in the dyslexia training but want additional education to help improve their practice.

Moving forward, the information gathered from this research has created an impetus that needs to be nurtured to progress and create change. The participants' desire to learn more about dyslexia may falter with time so activating my action plan of meeting with district personnel to discuss professional development is crucial. With the publishing of the South Carolina Dyslexia Handbook (SCDE, 2020) and the inclusion of a statement by Molly Spearman, State Superintendent of Education, "we hope this handbook will spur a ... focus on educating students with dyslexia", I hope to help create change in my school district. However, with COVID-19 continuing to be at the forefront of teachers, administrators, parents, and students, this may not be a top priority right now. Health concerns take precedence over education matters as we cannot teach if we or the students are not well

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APPENDIX A

INVITATION TO PARTICIPATE IN RESEARCH STUDY

Dear Colleague,

You are invited to participate in a research study conducted by Lisa Alves, MS CCC-SLP/Doctoral candidate at the University of South Carolina in the Curriculum and Instruction Studies Program. The purpose of this study is to investigate identifying, assessing, and remediating dyslexia in a secondary school setting. You are being invited to participate in this study because you are a secondary school specialist with expertise and knowledge in special education.

Participation in this study will involve:

- Taking an anonymous pre-survey using Google forms
- Participating in dyslexia training session on Google Meet that will be recorded and transcribed for research purposes
- Taking an anonymous post-survey using Google forms
- Participating in an individual follow-up interview that will be recorded and transcribed for research purposes.

Participation in this research is voluntary and may be terminated at any time. Your anonymity will be provided throughout this process. Pseudonyms will be used for the school district and participants. All participants may be provided a summary of the findings if requested. Interview transcripts will be reviewed with the participant to ensure accuracy.

This Institutional Review Board at the University of South Carolina approved this study to be conducted. Permission was also granted by district administration.

If you have any questions regarding this study, please feel free to contact me at lalves@fsd1.org.

Participant's name _____

Date: _____

APPENDIX B

READS PRE-SURVEY

Respondent Expertise and Attitudes about Dyslexia Survey (READS) (Pre- Survey)

Please respond to these answers without any use of reference materials (books, websites, etc.). Your responses are anonymous. Thank you!

* Required

1. How would you define dyslexia? *

2. Which of these statements are true about dyslexia? (check all that apply) *

Check all that apply.

- It's origin is neurobiological
- it is a specific learning disability
- it is often due to
- phonological deficit
- individuals have low IQ

3. Dyslexia comprises ____% of all learning disabilities. *

Mark only one oval.

- 20
- 50
- 75
- 80

4. Early signs of dyslexia include(s): *

Mark only one oval.

- speech delays
- difficulty rhyming words
- difficulty clapping hands a
- and b
- all of the above

5. Secondary consequences of dyslexia include(s): *

Mark only one oval.

- reading comprehension deficitspoor
- decoding
- vocabulary deficitssa
- and c
- all of the above

6. Components of language comprehension depicted in Scarborough's ReadingRope include: *

Mark only one oval.

- phonics and vocabulary
 - vocabulary and verbal reasoning
 - visual acuity and phonological awareness
 - background knowledge and phonological awareness

7. How many steps are in the RTI process to determine the need for identification of students with dyslexia? *

Mark only one oval.

- 4
- 5
- 6
- 7

8. Some areas of a comprehensive evaluation for identifying dyslexia are: *

Mark only one oval.

- Parent input, phonological awareness, and oral reading fluency
- Listening comprehension, indirect teacher observations, and spelling
- Decoding, rapid automatized naming, and verbal memory skills
- all of the above

9. Effective reading instruction for students with dyslexia include(s): *

Mark only one oval.

- balanced literacy
- guided reading
- explicit and systematic instruction
- a and c
- all of the above

10. How confident are you to work with students with dyslexia? (Identifying, assessing, and/or remediating depending on your job)

Mark only one oval.

| | | | | | | |
|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Not at all confident | <input type="radio"/> | Completely confident |

11. How responsible are schools in identifying, assessing, and remediating students with dyslexia?

Mark only one oval.

| | | | | | | |
|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Not at all responsible | <input type="radio"/> | Extremely responsible |

12. How responsible are speech-language pathologists in assessing students with dyslexia?

Mark only one oval.

| | | | | | | |
|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Not at all responsible | <input type="radio"/> | Extremely responsible |

13. How responsible are speech-language pathologists in remediating students with dyslexia?

Mark only one oval.

| | | | | | | |
|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Not at all responsible | <input type="radio"/> | Extremely responsible |

14. Most school specialists and special educators are knowledgeable about dyslexia.

Mark only one oval.

| | | | | | | |
|-------------------|---|---|---|---|---|----------------|
| Strongly disagree | 1 | 2 | 3 | 4 | 5 | Strongly agree |
|-------------------|---|---|---|---|---|----------------|

APPENDIX C

ADDITIONAL QUESTION ON READS POST-SURVEY

15. Please write any comments about what you heard today.
