

**Elementary Education Teachers' Perceptions on Knowledge and Instructional Strategies to  
Support Students with Dyslexia**

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## Abstract

The problem addressed in this study was that educators lack the knowledge and instructional strategies to support students with dyslexia in a general education setting to positively impact students' success and achievement. The purpose of this qualitative descriptive case study was to explore how 3<sup>rd</sup>–6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Guided by Bandura's self-efficacy theory, which directly correlates students' achievement with educators' self-efficacy, this study investigated how educators describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. The research study explored how teachers describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Purposive sampling was used to select general education teachers in 3<sup>rd</sup>–6<sup>th</sup> grade within the United States. Data were collected through a questionnaire from 25 participants, through semi-structured interviews with 10 participants, and from a focus group consisting of seven participants. Braun and Clarke's Thematic analysis approach was utilized to analyze the data. NVivo software was used to code and categorize data from the interviews and focus group. Nine themes emerged from the results of the data to include (a) Basic understanding of dyslexia symptoms; (b) Emotional and social impact; (c) Recognition through behavior. (d) Multisensory instruction; (e) Adaptations-accommodations and differentiation; (f) Positive reinforcement and emotional support; (g) Self-directed learning and independent professional development; (h) Collaboration with specialists; and (i) Resource limitation. This study can inform educators about effective strategies for instructing students with dyslexia as well as inform administration surrounding the need for

additional professional development and resources to effectively provide instruction to students with dyslexia.

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## Chapter 1: Introduction

In the United States, elementary students are not meeting state proficiency requirements in reading at significant rates. As released by the National Assessment of Educational Progress (NAEP, 2022), only 33% of all fourth-grade students meet proficiency level or above in reading, based on the 2022 assessment results. Reading proficiency can be impeded by a multitude of challenges. Dyslexia is often associated with the challenge of meeting reading proficiency among children (Al Otaiba et al., 2018; Miciak et al., 2022).

The International Dyslexia Association (2023) defined dyslexia as a neurobiological, specific learning disability. Dyslexia is a neurobiological disorder that represents 80-90% of individuals identified with a learning disability through the appearance of difficulty in the production and comprehension of language (Castillo & Gilger, 2018; Yale, 2022). The difficulties affect accurate and fluent word recognition. Difficulties in word recognition may also present as a deficit in the phonological component of language that may develop into difficulties in reading comprehension and vocabulary development (International Dyslexia Association, 2023). Dyslexia presents itself through deficits in word decoding, reading fluency, and phonemic awareness (Miciak et al., 2022). As more research is conducted on dyslexia, knowledge is gained to provide additional support and education on dyslexia.

The Yale Center for Dyslexia and Creativity (2022) reported approximately 20% of the population exhibits tendencies of dyslexia. Prior empirical and theoretical work has been conducted surrounding teachers' knowledge, and educators' preparation for providing instruction to students with dyslexia, as well as comparative studies on pre-service and in-service training and teacher awareness of dyslexia. Mulliken et al. (2022), concluded that formal training and professional development should focus on explicit learning disabilities and dyslexia, with an

emphasis on recommendations for future studies to explore outcomes of professional development on teacher knowledge and teaching strategies.

As research and advancements in instructional practices evolve, educational policies and legislation supporting student achievement grow. Every state in the United States has legislation protecting students with dyslexia regarding identification practices, interventions, and mandated educator training (IDA, 2022.) There are 35 states that have laws and policy requirements for universal screening to occur based on specific achievement criteria. Twenty-six states require instructional interventions for qualifying students, and 16 states require pre-service training for college students in teacher preparation programs (Gearin et al., 2022). Though legislative efforts are in effect in each state, misconceptions and lack of effective instructional strategies are still prevalent in classrooms across the United States.

Misconceptions regarding the characteristics of dyslexia were reported among research relating to educators' conceptual knowledge of the topic (Ramil et al., 2019). Educator misconceptions can impede affected students from obtaining appropriate instructional interventions (Berent & Platt, 2021). Teachers' knowledge and instructional proficiency correspond to student reading outcomes (Gonzalez, 2021). Given the barriers students with dyslexia experience, understanding dyslexia and instructional strategies to support student growth can provide a greater understanding of the needs and practices of elementary classrooms in the United States.

### **Statement of the Problem**

The problem addressed by this study was that 82% of teachers surveyed in research studies incorrectly identified the basic characteristics of dyslexia (Mullikin et al. 2021). Gonzalez (2021) reported that 30% of educators disclosed not receiving effective training or no

training to support teaching students with dyslexia and a lack of training in understanding dyslexia. Schraeder et al. (2021) reported that as many as 92% of educators indicated they lack the essential knowledge to implement instruction for students with dyslexia. Schraeder et al. (2021) further expressed that 20% of these educators reported not receiving professional development on implementing effective reading instruction (Schraeder et al., 2021).

Lack of effective pedagogical reading training can negatively impact students' achievement (Hindman et al., 2020). Educators must apply their knowledge of fundamental pedagogical concepts surrounding learning styles, types, and disabilities. Utilizing fundamental pedagogical concepts, educators can then employ instructional strategies to support student learning. If educators fail to employ appropriate instructional strategies to support students with dyslexia based on misconceptions, this can negatively impact reading achievement (Berent & Platt, 2021). This study explored how teachers describe their knowledge and instructional practices to support students with dyslexia to provide a greater understanding of educators' success and professional needs to benefit the overall student body.

The body of literature surrounding the topic of dyslexia is not adequate to address teachers' misconceptions and perceptions of instructional strategies for students with dyslexia (Jones et al., 2019). Jones et al. (2019) suggested that future studies analyze the types of instructional strategies that prove beneficial to teachers to acquire a deeper level of knowledge about dyslexia and what training to provide to general education teachers to assist struggling readers. A deeper understanding provides an advantage to what types of instructional strategies prove beneficial to general education teachers. Knowing that effective teacher preparation directly impacts student achievement and that approximately 20% of the population exhibits dyslexia tendencies (Yale, 2022), understanding teachers' perceptions of instructional strategies

to support students with dyslexia can influence student achievement. Without understanding what instructional strategies prove beneficial to support students with dyslexia, 67% of fourth-grade students in the United States may continue to read below the proficiency level (NAEP, 2022).

### **Purpose of the Study**

The purpose of this qualitative descriptive case study was to explore how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. There is ample evidence demonstrating the lack of knowledge and instructional practices for students with dyslexia; however, there is still a need to understand at a deeper level the perceptions of knowledge and instructional strategies to support students with dyslexia (Gonzalez, 2021; Mullikin et al., 2021; Jones et al., 2019). Educators' use of effective instructional strategies to support students with dyslexia can directly impact student success (Hindman et al., 2020). Self-efficacy is a conceivable factor in teacher's perception of their knowledge and instructional strategies for supporting students with dyslexia.

A purposive sampling method was used to recruit 42 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers to participate in the study. This study explored how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers across the United States describe their knowledge and instructional practices to overcome training gaps to support students with dyslexia, no specific site was utilized. Participants were recruited from the Facebook site Science of Reading-What I Should Have Learned in College. Sources of data included a questionnaire, semi-structured interviews, and a focus group. A questionnaire was sent electronically to 25 elementary teachers in the United States to assess knowledge of the characteristics of dyslexia. Interviews and focus group were

conducted using Zoom. Approximately 10 interviews were conducted via Zoom to explore how elementary educators described their experiences relating to instructional strategies used to support students with dyslexia. As most datasets achieve saturation utilizing between 9 and 17 interviews, 10 interviews were conducted for this study (Hennink & Kaiser, 2022). A focus group via Zoom of approximately seven teachers was established to better understand concepts and themes identified from the interviews. Bryan and Graham (2022) stated that a focus group consisting of two to 12 participants is typical for a dissertation researcher, as sufficient data can be gathered as well as the novice researcher can achieve data saturation through effectively structuring and moderating a focus group. The focus group participants were different from the interviewees. Data collected from the interviews and focus groups were analyzed using a thematic analysis approach (Braun & Clarke, 2022). NVivo was utilized to enhance data trustworthiness and allowed the researcher to import, categorize, and investigate data. Upon completion of interviews, member checking was utilized to enhance the accuracy of transcripts. This study helped identify teachers' knowledge base as well as instructional strategies to support students with dyslexia.

### **Introduction to Theoretical Framework**

Bandura's (1977) social cognitive theory established the framework for this study, as it focuses on exploring how elementary teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Foundational learning theories stem from the concept that behavior is perceived as a result of a response or consequence. Bandura's (1977) social cognitive theory is based on individuals learning from interactions or response consequences. Furthermore, social cognitive theory dictates that individuals learn through others in social interactions through observation, modeling, and

imitation (Bandura, 1977). Imitation is demonstrated when the behavior is replicated based on the observed behavior(s) (Bandura, 1977). Self-efficacy is embedded in Bandura's social cognitive theory. Self-efficacy signifies an individual's tendency to regard themselves positively or negatively (Bandura, 1977). Self-concept and self-efficacy concerning educators are directly related to the social learning theory as teachers strive to provide effective instructional practices to promote learners' successes. Bandura (2020) affirmed that factors that influence behavior directly affect personal development. Thus, solidifying the relationship regarding the lack of knowledge and training to support dyslexic learners in general education classrooms.

### ***Self-Efficacy Theory***

Bandura's (1977) self-efficacy theory is a construct from the social cognitive theory. Self-efficacy signifies an individual's tendency to regard themselves positively or negatively (Bandura, 1977). There are four key sources of self-efficacy: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal (Bandura, 1997). Self-efficacy is embedded in social learning theory, as individuals, strive to prove achievement and effectiveness to themselves and others. The greater the level of self-efficacy an individual has in a specific skill or area, the greater the likelihood of redirecting behaviors or thoughts to successfully achieve the goal or desired outcome (Bandura, 1997; Cansoy et al., 2020). Educators' high self-efficacy is associated with an educator's desire and willingness to seek out new instructional strategies to support their students (Ozokcu, 2017). Teacher self-efficacy refers to teachers' beliefs in their ability to influence and improve student achievement (Cansoy, 2020). The results of this study aimed to assist in advancing the understanding of teachers' self-efficacy and the need for in-depth knowledge and instructional strategies for providing instruction for students with dyslexia.

In previous studies, teachers' self-efficacy was related to teachers' professional development preparedness, as teacher education and professional development significantly impact teacher efficacy by enhancing knowledge and skills utilized in the classroom (Tortorelli et al., 2021). High self-efficacy impels individuals to set challenging goals (Helsin et al., 2017). Therefore, educators with high self-efficacy continue to grow in their craft to develop their knowledge base and instructional practices to support all learners, including those identified with dyslexia tendencies. Further knowledge of elementary teachers' experiences regarding knowledge and instructional practices for students with dyslexia through completion of this study can contribute to the education field of research in identifying specific instructional practices to address the gap in current practices, promoting academic success within the education system. Self-efficacy concerning educators is relevant as teachers strive to provide effective instructional practices to promote learners' success. Students' success can be attributed to the instructor's effectiveness, thus, to the teacher's self-efficacy (Hindman et al., 2020). Thus, this highlights the need for a deeper understanding of teachers' perceived knowledge and instructional strategies to support students with dyslexia.

Bandura's self-efficacy theory formed the theoretical framework that drove the exploration of the extent to which teachers' self-efficacy surrounds their knowledge and instructional strategies for students with dyslexia. Self-efficacy was the guiding framework for this research study, as the premise that students' success can be attributed to the instructor's effectiveness and self-efficacy (Hindman et al., 2020). The problem statement, purpose statement, and research questions were supported by the guiding framework of educators' self-efficacy, as educators with high levels of self-efficacy tend to have higher levels of student achievement. The information gathered in this study provided an understanding of how educators

describe their knowledge and instructional strategies to support students with dyslexia will potentially allow for a greater understanding of educational practices to support students with dyslexia.

### **Introduction to Research Methodology and Design**

A qualitative methodology was the most appropriate method for this study. A qualitative descriptive case study design was the most appropriate choice for this proposed research study, as the intent is to provide an in-depth exploration with the primary purpose of describing their experience and behaviors (Yin, 2018). In this study, the researcher intended to provide an in-depth exploration of educators' experiences with details describing their knowledge and instructional strategies used for teaching students with dyslexia. This study provided a detailed account of 3rd – 6th-grade general education teachers' knowledge of instructional strategies to support students with dyslexia. Stakeholders may implement instructional strategies for use with additional students to promote academic success. Previous research quantified the experiences of pre-service training as well as professional development, but does not provide insight as to how teachers describe their knowledge of dyslexia or the strategies they use to support students with dyslexia in their class.

Qualitative research methods support the researcher's ability to understand the meaning participants make of an experience (Merriam & Grenier, 2019). A case study supports a deeper understanding. The research study explored how teachers describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. The target population for this study was 3rd – 6th-grade general education teachers in the United States. Site permission was received to post a recruitment flyer and conduct this research. In addition, IRB approval was required before recruiting participants. Once IRB approval was received, a

recruitment letter was posted on social media in the Facebook group, Science of Reading – What I Should Have Learned in College, to reach the target population. Participants assured they met the required recruitment criteria and provided the researcher with their contact information. Then the researcher sent each participant a notice of the study and an informed consent form to sign. The first 25 respondents were assigned to the questionnaire, the next 10 respondents were assigned to interviews, and the next seven were assigned to the focus group. Most data sets reach saturation between 9 and 17 interviews (Hennink & Kaiser, 2022). Data collection occurred through three different sources: questionnaires, interviews, and a focus group. Interviews supported the researcher’s purpose of exploring the participants’ perceptions of their knowledge and instructional strategies to support students with dyslexia (Yin, 2018). All interviews were transcribed to identify relevant themes using deductive thematic analysis (Braun & Clarke, 2022). The results were coded and analyzed utilizing NVivo software.

### **Research Questions**

The problem that this study addressed is that 82% of educators surveyed in research studies incorrectly identified the basic characteristics of dyslexia and 30% of educators reported not receiving effective training or no training at all to support teaching students with dyslexia, as well as lacking training in understanding dyslexia (Mullikin et al., 2021; Gonzalez, 2021). The purpose of this study explored how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. The research questions for this descriptive case study were created based on a review of literature and alignment with the problem of the study and the purpose of the study.

The following research questions guided this study:

***RQ1***

How do 3<sup>rd</sup> - 6<sup>th</sup> grade general education teachers describe their knowledge of dyslexia characteristics?

***RQ2***

How do 3<sup>rd</sup> - 6<sup>th</sup> grade general education teachers describe the strategies they use to support students with dyslexia in their class?

***RQ3***

How do 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers describe how they overcome training gaps to support students with dyslexia?

**Significance of the Study**

According to the National Center for Education Statistics (2022), students with disabilities, including children diagnosed with dyslexia, who spend 80% or more of their school day in a general education classroom had increased to 66% in the fall of 2020. With significant numbers of students identified with dyslexia remaining in general education classrooms, it is necessary to understand educators' perceptions of knowledge and strategies to support students with dyslexia. Knowing educators' perceptions of knowledge and strategies to support students with dyslexia can contribute to the field of study by providing a deeper understanding and allowing educational stakeholders to identify areas for improvement in the overall quality of education provided to students. A qualitative exploration of educators' perceptions of knowledge and strategies to support students with dyslexia contributes to the knowledge base on this topic and inform practice in general education classrooms.

Educators' self-efficacy impacts the instructional practices and overall effectiveness in the classroom. According to Torterelli et al. (2021), educators' self-efficacy is directly related to

professional development. By increasing and enhancing teacher knowledge and skills utilized in the classroom, students can receive the necessary support and effective pedagogical strategies to support students with dyslexia. Elevating teacher knowledge and strategies may allow for necessary improvements across academia and potentially improve the overall quality of education provided to students and pre-service educators.

The results of this study benefit district leaders, educators, and curriculum developers as educators in the field provide descriptions of the strategies they use in classrooms to support students with dyslexia. By understanding educators' experiences, district leaders, educators, and curriculum developers can implement strategies into practice within future classrooms, providing academic success to additional students. Parents of students with dyslexia also benefit, as the results of this study provide a greater understanding of successful strategies for parents to implement at home to support their students.

## **Definitions of Key Terms**

### ***Dyslexia***

Dyslexia is a specific learning disability that is neurobiological in origin and characterized by struggles with accurate and/or fluent word recognition, lack of spelling and decoding abilities, in addition to a deficit in the phonological component of language acquisition (International Dyslexia Association, 2023).

### ***Learning Disability***

A learning disability relates to a disorder in one or more of the foundational psychological processes that contribute to understanding or using spoken or written language. This disorder may impede the ability to listen, speak, read, write, or compute stemming from

perceptual disabilities, traumatic brain injury, minimal brain dysfunction, dyslexia, and/or developmental aphasia (IDEA, 2018).

### ***Least Restrictive Environment (LRE)***

The least restrictive environment is the maximum extent appropriate, where children with disabilities are educated with children who are nondisabled (IDEA, 2017).

### ***Professional Development***

Professional Development (PD) is an opportunity for educators to grow within the profession and remain relevant in practices (Ravindran et al., 2023).

### ***Response to Intervention (RTI)***

Response to Intervention (RTI) is an alternative, research-based, multi-step process implemented and regulated by schools to support the identification of students struggling with specific academic achievements (Zhang et al., 2023). Student progress is monitored through specific data collection methods and merges data and instruction to maximize student achievement from a strengths-based perspective to determine if additional services are needed in addition to potential special education evaluations to identify any specific learning disabilities (Zhang et al., 2023).

### **Summary**

The purpose of this qualitative descriptive case study was to explore how 3<sup>rd</sup> – 6<sup>th</sup> grade educators describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Dyslexia is a specific learning disability that is neurobiological and appears in the production and comprehension of language challenges of approximately 20% of the population (Castillo & Gilger, 2018; Yale, 2022). Mullikin et al. (2021) reported 82% of teachers surveyed in research studies inaccurately identified basic characteristics of dyslexia.

Through the exploration of teachers' perceptions of knowledge of dyslexia and instructional strategies to support students with dyslexia, a deeper understanding of educators' success and professional needs can be attained to support students' academic progression.

Bandura originally defined self-efficacy as an individual's belief in the individual's ability to complete a task or attain a specific goal (Bandura, 1977). Previous research have reported the relevance of self-efficacy in determining the success of instructional practices (Gibbs et al., 2020; Ozokcu, 2017; Tortereli et al. 2021). By exploring teachers' perceptions of instructional strategies for students with dyslexia, additional contributions can be made to the current body of literature on teachers' misconceptions and perceptions of instructional strategies for students with dyslexia (Jones et al., 2019). Thus, a qualitative case study was an appropriate method to obtain specific knowledge of dyslexia and instructional strategies to support students with dyslexia.

To gain a deeper understanding of this topic, 42 educators were recruited utilizing a purposive sampling method. Data were collected through a questionnaire, semi-structured interviews, and a focus group. Data collected were analyzed using Braun and Clarke's (2022) inductive thematic analysis approach. NVivo was utilized to manage, organize, analyze, and visualize data. In doing so, the results from this study provided a greater understanding of educators' knowledge of instructional strategies to overcome training gaps to support students with dyslexia. A thorough review of the literature surrounding this topic and the theoretical framework are detailed in the following chapter.

## Chapter 2: Literature Review

The purpose of this qualitative descriptive case study was to explore how 3rd– 6th-grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. In the United States, 33% of all fourth-grade students meet proficiency level or above on reading assessments (NAEP, 2022). The specific problem that was reviewed for the focus of this study is that educators lack the knowledge and instructional strategies to support students with dyslexia (Hindman et al., 2020; Gonzalez, 2021; Hindman et al., 2020; Mullikin et al., 2021). Therefore, through the exploration of how teachers describe their knowledge and instructional practices to support students with dyslexia, a deeper understanding of educators' success, self-efficacy, and professional needs to benefit overall student academic achievement. The review begins with a discussion of Bandura's self-efficacy theory as the theoretical framework and continues with an exploration of topics such as an overview of inclusive education, dyslexia, identification of dyslexia, strategies that support dyslexia, dyslexia legislation, and education misconceptions in relation to providing support and instructional strategies for students with dyslexia.

The literature review presented in this chapter was used to concentrate on academic sources, comprised of articles from education experts and researchers that were published in content-based peer-reviewed journals. Articles and journals were sourced from the National University Library database. An extensive search was performed across the following: EBSCOhost, ERIC, ProQuest, ProQuest Education, and Google Scholar. The key terms used to identify relevant literature included *dyslexia*, *teacher knowledge and dyslexia*, *teacher perception and reading disability*, *general or inclusive education and dyslexia*, *teacher self-efficacy* and

*dyslexia, and instructional strategies and dyslexia*. Search results were limited to publication dates from the past five years, ranging from 2019-2023.

### **Theoretical Framework**

Albert Bandura's (1977) self-efficacy theory was the guiding framework for this qualitative case study. This theory offers insight into identifying methods to improve 3<sup>rd</sup>-6<sup>th</sup> grade teachers' knowledge and understanding of dyslexia to assist them in supporting students with dyslexia in their classrooms. Educators' self-efficacy is derived from Bandura's social cognitive theory. Bandura's self-efficacy theory is derived from the social cognitive theory (Bandura, 1986).

With Bandura's social cognitive theory (Bandura, 1977) as the foundation, educators' self-efficacy can be defined as educators' personal beliefs in their ability to promote academic success in students. Bandura's (1977) social cognitive theory states that individuals learn through observation, modeling, and imitation. This theory is based on the concept that individuals learn from social interactions. Through the observation of behaviors, modeling and imitation can occur if an individual observes desired outcomes from the first observation stage (Bandura, 1986). Imitation is demonstrated when the behavior is replicated based on the observed behavior(s) (Bandura, 1977).

Social cognitive theory relates to teachers as they attend their degree and credentialing programs, professional development, and peer observations to hone their craft of providing effective instructional practices in their classrooms. Gibbs et al. (2020) stated that teachers' beliefs in their pedagogical abilities have the potential to be influenced and fundamental in their professional educational ability, both pre-service and professional development. Therefore, educators' self-efficacy can be associated with their experiences from coursework and training.

Self-efficacy relates to teachers' perceptions of their knowledge and pedagogical skills and directly impacts students' academic success in the teachers' ability to apply instructional methods and classroom engagement (Vansteelandt et al., 2020).

Bandura's self-efficacy theory was the foundation for the theoretical framework for this qualitative case study on how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Self-efficacy was the guiding framework for this proposed research study because students' achievement can be attributed to the teacher's instructional effectiveness and self-efficacy (Hindman et al., 2020). The problem statement, purpose statement, and research questions are supported by Bandura's self-efficacy theory as the theoretical framework because educators with high level self-efficacy tend to have higher levels of student achievement (Hindman et al., 2020). By gaining a deeper understanding on how teachers describe their knowledge and instructional strategies to support students with dyslexia, there is a potential to enhance knowledge on dyslexia and instructional practices to support students with dyslexia.

Self-efficacy as the theoretical framework relates to this study's research problem as it explores teachers' perceptions of knowledge of instructional strategies to support students with dyslexia as teacher self-efficacy can support student success. Teachers' self-efficacy can be described as teachers' beliefs about their ability to produce student achievement (Bandura, 1977). The level of an individual's self-efficacy can be determined by the psychological procedures experienced by the individual (Bandura, 1978). For instance, when teachers have high self-efficacy about their knowledge and ability to meet a student's instructional needs, they are more likely to seek and develop instructional strategies to support that student's academic progress.

Bandura's self-efficacy theory supports the identification of how an individual is motivated (Bandura, 1977). Bandura (1994) expressed that an individual's self-efficacy level may influence their ability to achieve. Self-efficacy theory as the theoretical framework for this study supports this study as self-efficacy impacts teachers and student achievement. Primary factors cause increase in self-efficacy to include personal mastery (Karim et al., 2021). An example of personal mastery is an educator completing professional development or a course to further their understanding and instructional practices to support students with dyslexia. An additional method of increasing self-efficacy is through observation (Karim et al., 2021). A third method to promote self-efficacy is through verbal discourse (Karim et al., 2021). Further sources of developing self-efficacy are mastery of skills through lived experiences, working with colleagues, encouragement, or praise regarding skillsets, reduction or eliminating stress, and reduction of negativity (Bandura & Wessels, 1994).

Previous studies demonstrated that educators' self-efficacy is directly related to teachers' preparedness to provide meaningful instruction. Torterelli et al. (2021) reported that preservice education and professional development impact teachers' self-efficacy by strengthening knowledge and instructional skills for classroom use. This further supports the concept that teachers with higher perceived self-efficacy continue to grow in their knowledge and instructional methods to support students with dyslexia and all learners. Gibbs et al. (2020) reported that educators demonstrating high levels of self-efficacy can be associated with their beliefs to affect the academic success of all students, including those with specific learning disabilities and dyslexia.

Another theoretical framework considered was Malcolm Knowles' adult learning theory. Knowles' adult learning theory (1984) was considered an alternative framework for this study as

it focuses on andragogy and suggests that adults prefer to learn about specific topics that they believe will be most beneficial to enhance their performance in the workplace. While Knowles' adult learning theory does pertain to teachers learning about dyslexia and instructional practices to support students with dyslexia, it does not meet all aspects of this study. Bandura's self-efficacy theory best applies to this study, as teachers with high self-efficacy are associated with perceived willingness and desire to explore instructional strategies to support their students (Ozokcu, 2017).

In summary, Bandura's self-efficacy theory as the theoretical framework for this study provides a perspective through which this study of exploring how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Bandura (1977) explains teachers' self-efficacy as educators' beliefs about their ability to address students' academic outcomes. This proposed study explores how teachers describe their knowledge and instructional practices to overcome training gaps to support students with dyslexia. The results of this study aim to provide a deeper understanding of teachers' success, self-efficacy, and professional needs to benefit student academic achievement. There is a potential to enhance knowledge on dyslexia and instructional practices to support students with dyslexia through gaining a deeper understanding of how teachers describe their knowledge and instructional strategies to overcome training gaps to support students with dyslexia.

### **Inclusive Education**

Inclusive education refers to the right of students with disabilities to access the general education curriculum and classes and receive high-quality instruction with appropriate accommodations to support academic success (Alsarawi & Sukonthaman, 2023). Providing an

inclusive education ensures that learning occurs for all learners, both with and without special needs (Thwala et al., 2020). Students with specific learning disabilities may be placed in the general education classroom based on their IEP or 504 to ensure they are in their least restrictive environment. Since dyslexia is considered a specific learning disability, general education teachers need to be knowledgeable about dyslexia and provide effective instructional strategies to support learners with dyslexia in their classrooms.

Okechukwu et al. (2023) describe dyslexia as a specific learning disability in students who despite being in a traditional, inclusive classroom, fail to demonstrate proficiency in the language skills of reading, writing, and spelling equivalent to their intellectual abilities. Since dyslexia can impede academic progression, inclusive education allows teachers to provide accommodations that meet the needs of every learner (Thwala et al., 2020). Therefore, as students with dyslexia are placed in general education classes, general education teachers must be knowledgeable of dyslexia and provide instructional strategies for students with dyslexia within their inclusive classroom. Additionally, as classrooms become more inclusive, it is imperative to gain a better understanding of teachers' perspectives and beliefs on inclusion.

### ***Teachers' Beliefs on Inclusion***

Understanding educators' beliefs and viewpoints on inclusive education provides an overview of how students with dyslexia will be perceived in general education classrooms. With many students with dyslexia placed in their least restrictive environments within the general education room, teachers with high self-efficacy can provide more effective instructional strategies and learning opportunities (IDEA, 2017; Ozokcu, 2017). Dymock and Nicholson (2023) surveyed elementary teachers, resulting in high self-efficacy. The researchers further discuss that educators surveyed tended to agree that some factors regarding identification and

support for students with dyslexia were beyond their control; however, the respondents perceived themselves as confident in providing support (Dymock & Nicholson, 2023). To fully comprehend teachers' perceptions of inclusive education, it is vital to understand what influences teachers' perceptions of inclusive education.

Teachers' perceptions of inclusive education are suggested to be influenced by experiences, training, and perceived teaching efficacy (Bolourian et al., 2022). Teacher experience has been associated with greater acceptance of an inclusive classroom, meaning as educators gain insightful experience in diverse classrooms, there is an association to higher acceptance rates to inclusive classrooms (Alsarawi & Sukonthaman, 2023). Dymock and Nicholson (2023) reported teachers' self-ratings in a strong sense of responsibility for students with dyslexia with a positive affect towards supporting them in the classroom. A study from Australia reported that 47% of participants believed that inclusive education is an effective way to teach all students, including those with a specific learning disability, including dyslexia (Woodcock & Nicoll, 2022).

In contrast to a perceived positive association between inclusive education and teacher experience, Schraeder et al. (2021) reported that as many as 92% of educators reported insufficient knowledge to implement effective instruction for students with dyslexia. In this study, 20% of these educators reported they had not received instruction on the implementation of effective reading instruction (Schraeder et al., 2021). Additionally, Ahmad et al. (2018) expressed that providing reading instruction to students with dyslexia can challenge educators as their lack of effective teaching methods in an inclusive classroom can limit their success at meeting individual student needs. This further supports the relationship that teacher perceptions of inclusive education are suggested to be influenced by training (Bolourian et al., 2022). Yakut

(2021) suggested that a relationship exists between teachers' self-efficacy and beliefs toward inclusion. Given that teachers' perceptions of self-efficacy can affect the successful integration of students with dyslexia, it is important to explore the background of dyslexia and teachers' perceptions of knowledge and instructional strategies to support students with dyslexia to support academic growth and effectively increase the nation's 33% reading proficiency (NAEP, 2022).

### ***Background on Dyslexia***

There are several characteristics and definitions of dyslexia presented in literature related to dyslexia. The International Dyslexia Association (2022) defined dyslexia as a specific learning disability that is neurobiological and can be characterized by difficulties resulting in reading skill mastery as well as categorized as a learning disability (Elliot, 2020). The International Dyslexia Association (IDA) further defines dyslexia as a specific learning disability with tendencies of issues related to decoding, spelling, accuracy, and word recognition (International Dyslexia Association, 2022). The specific areas of concern related to dyslexia are associated with phonological deficits and may include additional concerns in reading comprehension (International Dyslexia Association, 2022).

This specific learning disability is estimated to affect 20% of the general population (Castillo & Gilger, 2018; Yale, 2022). Collaborative efforts among educators, students, and the broader learning community are essential to create an inclusive environment where students with dyslexia can thrive academically. Since students with dyslexia tendencies are represented within the classroom population of general education students, teachers need to be equipped with the knowledge, instructional strategies, and self-efficacy to support the academic growth of readers within their general education classrooms. Understanding characteristics, proper identification, and appropriate instructional strategies to support academic growth for students with dyslexia

will promote success for students' underperforming proficiency on reading proficiency exams as well as contribute to the overall well-being and prospects of these students. (NAEP, 2022).

### ***History of Dyslexia***

According to Shaywitz and Shaywitz (2020) conditions surrounding reading difficulties have been observed as early as the 1600s. Dating back to 1877, a German neurologist, Adolf Kussmaul reported the phenomenon of “word-blindness” that challenged people with errors in deciphering text as well as reading a series of words in the appropriate order (Shaywitz & Shaywitz, 2020). This was reported to not be a vision discrepancy but neurobiological in origin. The terminology was later changed to dyslexia, by Rudolf Berlin, a German ophthalmologist, to explain the phenomenon related to specific reading difficulties after German ophthalmologist Oswald Berkan described the symptoms of dyslexia in 1881 (Kirby, 2020 & Werth, 2023).

In 1896, the first report of development dyslexia was published by Dr. W. Pringle Morgan (Shaywitz & Shaywitz, 2020). This report addressed the identification and characteristics of a 14-year-old male observed by Dr. W. Pringle Morgan. By 1905, a recommendation to screen school aged children for dyslexia was introduced by Dr. Hinshelwood, a Scottish ophthalmologist, to ensure students with dyslexia tendencies received the appropriate instructional methods (Shaywitz & Shaywitz, 2020). Additionally, in 1905, the first published report by W.E. Bruner's report on childhood reading challenges in the United States was published.

Dyslexia has evolved from its first identification in the 1870s to being considered “word-blindness” in the 1960s, to its modern form today (Kirby, 2020). According to Kirby (2020), by the 1960s, the foundation for five main themes had emerged: dyslexia was not fully defined and was unable to be identified or differentiated from other reading difficulties, dyslexia was an

inventive term created by “over-anxious” parents who sought a justification for their child’s learning difficulties. Dyslexia was a “middle-class” myth simply because the phenomenon was most common with students from higher socioeconomic status. dyslexia correlated with intelligence, despite the lack of scientific evidence.

In the 1960s, the research on the topic of dyslexia shifted from the medical to the educational field. Cognitive psychologists and educators focused specifically on phonological awareness deficits, or the inability to discriminate and identify individual phonemes (Snowling et al., 2020). A phonological awareness deficit creates a challenge in learning to decode, thus creating a challenge in spelling, as well as challenging the framework for learning to read (Snowling et al., 2020; Werth, 2019). As dyslexia is still evolving in terms of terminology, research, and identification, educators, parents, and stakeholders in education continue to remain current on research and information pertaining to the identification, intervention, and instructional practices to support students with dyslexia.

There are several theories that have been researched to determine the origin and cause of dyslexia. The magnocellular theory of dyslexia, the temporal summation theory, and the foveal and parafoveal processing of letters have resulted in researchers providing an explanation of how dyslexia could be perceived as a visual perceptual disorder (Werth, 2019). Additional researchers have suggested that dyslexia is the result from an impaired ability to process auditory stimuli or the impaired control of reading eye movements (Werth, 2019). Additional researchers have reported that the phonological awareness theory is the cause of dyslexia (Werth, 2019). The phonological awareness theory includes different areas of concern, such as phoneme identification, rhyming, naming letters, objects, and colors, as well as segmenting syllables

(Werth, 2019). As researchers have varying reports of the causes of dyslexia, there are also a variety of characteristics identified as a result of dyslexia.

### ***Dyslexia Characteristics***

Dyslexia is the most predominant specific learning disability (Anderson, 2021). The International Dyslexia Association (2023) defined dyslexia as the increased challenge with the phonological component of language, including spelling, decoding skills, and reading comprehension. Dyslexia is a specific learning disability that is neurobiological and appears through difficulties in the production and comprehension of language (Castillo & Gilger, 2018). A dyslexia diagnosis does not mean the individual has poor reading skills or low intellectual intelligence but struggles in language production, comprehension, or fluency (Kumas et al., 2021). Difficulties in language production and comprehension impacted by dyslexia present themselves in numerous ways.

Language production and comprehension difficulties as a form of dyslexia manifest through various characteristics. Typical characteristics associated with dyslexia include complications organizing spoken and written language, slow and difficult decoding, complications with spelling and written processes, and struggles mastering phoneme-grapheme associations (Schraeder et al., 2021; Okechukwu et al., 2023). Additionally, characteristics associated with dyslexia include difficulties in visual perception, phonemic awareness, attention and working memory, morphological processing, and text comprehension (Berent & Platt, 2021). According to Berent and Platt (2021), in the English language, orthography, or mapping from letter sounds, is not entirely predictable; phonological decoding while reading tends to be the most common symptom of dyslexia.

As research continues about dyslexia, more focus has been placed on understanding poor language processing, specifically orthographic and phonological processing of words (Peltier et al., 2022). For example, a student without dyslexia, when presented with an unknown word, "mask," may likely decode or sound out the word by associating each letter or combination of letters with each corresponding phoneme and then blending the word together. For a student with dyslexia, they may experience impaired levels of decoding, impeding the process of mapping graphemes and phonemes (Peltier et al., 2022). Due to the wide variety of symptoms, not every individual with dyslexia exhibits all or similar symptoms.

Dyslexia presents itself differently in individuals (Peltier et al., 2022). It is thought that dyslexia functions on a "continuum of severity" (Gonzalez, 2021). This continuum can present itself in various persons individually, presenting various strengths and difficulties across age and time. For example, various individuals may struggle with spelling and decoding, thus impacting their fluency but not being affected in reading comprehension. Individuals may struggle with spelling and decoding, further impacting their fluency and reading comprehension deficits. Phonological deficits are recognized as criteria in determining a reading disability; however, given the complexity of dyslexia, it is notable that not every person with dyslexia has a phonological deficit nor that every person with a phonological deficit has a reading disability (Elliott, 2020). As characteristics of dyslexia are complex as well as multi-factory, teachers in the general education classroom benefit from understanding dyslexia as well as dyslexic tendencies to not only support students with dyslexia but also to effectively recognize tendencies of dyslexia to provide appropriate instructional strategies to students to enhance academic achievement.

### *Dyslexia Comorbidities*

Dyslexia frequently occurs in other areas outside of literacy development, including organization, calculation, and concentration (Kirby, 2020). Therefore, dyslexia often does not exist independently. The most common disorder to correlate with dyslexia is attention deficit hyperactivity disorder (ADHD) and specific language impairments (Mather & Wendling, 2021; Nemmi et al., 2023). ADHD is associated with cases of dyslexia in approximately 50% of diagnoses (Nemmi et al., 2023; Wagner et al., 2020).

Additional comorbidities have been noted to include other learning disabilities, language, and mathematic impairment (Helland, 2022). Children with comorbidities often experience secondary difficulties such as behavioral issues, lower self-esteem, and higher school dropout rates (Hongyao et al., 2023). According to Hongyao et al. (2023), the prevalence of comorbid symptoms and age have a positive correlation. Therefore, as a student ages the likelihood of comorbid symptoms is likely to increase.

As dyslexia is often correlated to other comorbidities, teachers need to understand the cooccurrence of dyslexia with other disorders (Helland, 2022). Educators tasked with teaching general education to students with comorbidities in addition to dyslexia, including ADHD, speech impairments, and other learning disabilities compounding the need for effective identification processes as well as necessitating the use of effective instructional strategies to support students with dyslexia. By gaining a further understanding of the comorbidities, teachers can identify, provide appropriate accommodations, and support students through evidence-based intervention practices to students with dyslexia (Helland, 2022).

### *Identification of Dyslexia*

Though classroom teachers are not responsible or legally able to diagnose dyslexia, it is vital for identification purposes to ensure that teachers have an accurate understanding of dyslexia and are aware of specific characteristics regarding dyslexia. Educators recognizing signs of dyslexia and following district, or state-mandated protocols can promote identifying struggling students, thus further promoting learners' academic success. Knight (2018) concluded that 55% of guardians of children with dyslexia reported that their student's teacher neglected to report a problem with their student's development. This further suggests that a uniform identification process for dyslexia may benefit students needing additional support and interventions.

There are well-known inconsistencies in how school psychologists identify dyslexia. These inconsistencies result in various diagnostic results for students, including identification to receive school-based accommodations or interventions (Benson et al., 2020; Sadusky et al., 2021). Researchers have not identified consistent guidelines or assessments to ensure a definitive diagnosis; thus, children can be "cured" of dyslexia by moving across state lines or simply changing school districts (Worthy et al., 2018). Educators with high levels of self-efficacy are more likely to seek information, additional professional development, or training to recognize signs of dyslexia tendencies and provide adequate instructional strategies to support students with dyslexia. Understanding teachers' perceptions of knowledge on dyslexia could support comprehension of how those educators utilize their understanding to identify students with dyslexia tendencies.

The presence of a substantial achievement gap between students without dyslexia and students with dyslexic tendencies can be evident as early as first grade (Shaywitz & Shaywitz,

2020). Early assessment is necessary for early detection and should be introduced for all kindergartners (Helland, et al., 2021). Other research suggests universal screenings for all kindergarten through second-grade students (Adlof, 2020). Utilizing screeners for all students helps to identify “at-risk” students to ensure they are receiving adequate support and instructional interventions.

Although dyslexia screening tools are not designed as a diagnostic tool to identify specific reading disabilities, the screening tools can provide parents and educators with data to support children who may be at risk for dyslexia (Storie, et al., 2024). Screening practices are commonly utilized to identify students who may be at risk for dyslexia (Storie, et al., 2024). Data from the screenings can also assist educators and stakeholders in determining if targeted intervention or additional assessments are needed to promote academic achievement (Storie, et al., 2024). Educators knowing the results of the screenings as well as the tendencies of dyslexia can support students receiving academic support.

There are several tendencies associated with dyslexia that prove useful in identifying “at-risk” children. The IDA released specific examples of tendencies associated with dyslexia including delayed language development (International Dyslexia Association, 2020). According to the IDA (2020), children presenting difficulties in learning to speak as well as learning letters and their associated sounds are more “at-risk” for dyslexia. Shaywitz and Shaywitz (2020) suggest that in addition to observing language development, it is necessary to recognize problems in rhyming, pronunciation, and word finding. Additional concerns observed as “at-risk for dyslexia include problems in reading, writing, spelling, and learning a foreign language (International Dyslexia Association, 2020; Shaywitz & Shaywitz, 2020). Teachers need to be

knowledgeable in recognizing “at-risk” students to provide appropriate instructional strategies for students with dyslexia or dyslexia tendencies to promote academic success for students.

### ***Issues of Unidentified Dyslexia***

As there are many tendencies associated with dyslexia that impede academic progress, there are additional consequences for students who remain unidentified and or do not receive appropriate services and interventions to support reading development. Dyslexia has profound long-term impacts on educational and generalized well-being if not identified (Shaywitz & Shaywitz, 2020). Persons with dyslexia are at a greater risk of experiencing adverse academic and occupational outcomes (Dahl-Leonard et al., 2022). A study conducted by Leseyane et al. (2018) revealed that educators in public schools used negative comments toward students with dyslexia and did not support them with individualized instruction. With more significant risks and challenges impacting the daily lives of those not identified and diagnosed, early identification and effective instructional strategies demonstrate an increase in the academic and emotional well-being of persons with or at risk for dyslexia (Dahl-Leonard et al., 2022).

In a study conducted by Bazen et al. (2022), perceived negative consequences that university students experienced directly related to their dyslexia could result in low academic achievement or feelings of anxiety and depression. Reaching these students and providing appropriate identification and academic interventions could provide support for struggling students. Some children with dyslexia experience specific learning difficulties, impeding their success in learning (Thwala et al., 2020). Students with significant reading difficulties are more likely to demonstrate academic challenges throughout their entire academic career, thus they are more likely to drop out of school (Dahl-Leonard, et al., 2023).

In addition, the learning abilities of children with dyslexia are reduced compared to peers without dyslexia (Zhang et al., 2021). This further supports the concept that individuals with various levels of dyslexia on the “continuum of severity” experience daily challenges and need effective interventions to support their academic success (Gonzalez, 2021). Additionally, researchers have suggested that students with undiagnosed dyslexia may go on to experience behavioral problems, delinquency, and/or incarceration (Catts & Hogan, 2020). As students with dyslexia are more likely to struggle, it is important to identify and support students who may be considered “at-risk” for dyslexia.

Researchers have reported that individuals with dyslexia who receive appropriate academic interventions have fewer issues with reading (Okechukwu et al., 2023; Odo et al., 2021). Therefore, understanding the effecting instructional strategies used in inclusive classrooms to support academic success for students with dyslexia can contribute to the body of literature and promote reading proficiency. Research specifically on brain development is beneficial for identifying reading disorders, such as dyslexia, and determining effective instructional strategies for students with dyslexia (Klages et al., 2020). Thus, understanding what works best for students with dyslexia regarding instructional strategies to promote academic success can be determined through science and evidence-based research to provide appropriate accommodations and strategies to support students with dyslexia.

### **Accommodations to Support Dyslexia**

Accommodations make the distinction between academic success and failure, between test results reflecting ability rather than slow reading due to dyslexia, and between a thriving self-confidence and a persistent sense of defeat (Shaywitz & Shaywitz, 2020). Accommodations to support academic success for students vary based on a student’s unique blend of strengths and

weaknesses. As students with dyslexia present a varying degree of phonological weakness, it is necessary to access the student's higher-level thinking and reasoning strengths using accommodations (Shaywitz & Shaywitz, 2020). As students with specific learning disabilities may be placed in the general education classroom based on their IEP or 504 to ensure they are in their least restrictive environment; the student's IEP or 504 will contain a list of agreed upon accommodations to further support the learner's academic success. Accommodations to support dyslexia and other specific learning disabilities are in place to support student's academic progression and success.

Accommodations frequently utilized to support students with dyslexia include extra time on exams and lengthy assignments (Shaywitz & Shaywitz, 2020; Shillingford et al., 2021). Shaywitz and Shaywitz (2020) cite that the most critical accommodation utilized for students with dyslexia is the use of extra time as students with dyslexia require additional time to access learned material and demonstrate conceptualization in a manner that allows them to process and articulate their response or demonstration of understanding. This can support a student a student to demonstrate their true conceptualization of written material. According to Shillingford et al. (2021), the use of technical equipment may prove beneficial to students with dyslexia. As dyslexia may present itself with a deficit in reading proficiency and fluency, the use of text to speech or speech to text through a technical device may benefit specific learners. Additionally, many students benefit from exams in separate, quiet environments (Shaywitz & Shaywitz, 2020; Shillingford et al., 2021). Appropriate and effective accommodations should be requested at the school level to best support academic progression and success in conjunction with evidence-based instructional strategies to meet the unique, individual needs of each student.

## **Evidence-Based Strategies that Support Dyslexia**

Teachers must develop strategies to provide high-quality instruction in general education classrooms. This includes selection, appropriate usage, and modifying instructional strategies to align with student needs, accommodations, and data-driven instructional goals (Raymond et al., 2020). District or state-mandated curriculums potentially impede educators' ability to utilize developed instructional strategies at their discretion. Educators must also develop and maintain effective evaluation skills to pivot instructional methods to promote students' learning. Strategies for effective reading instruction consist of five main components: phonemic awareness, phonics, fluency, comprehension, and vocabulary (Hindman, 2020; Klages et al., 2020; Schraeder et al., 2021). Providing explicit instruction in phonemic awareness and phonics allows students to learn, practice, and explore decoding syllables and words in their environment while applying the strategies taught. Providing instruction addressing the foundations of literacy, especially to students with dyslexia, demands extensive knowledge of phonological and morphological awareness.

Over the last several decades, educators, researchers, and practitioners have divided over which instructional methods and curriculum are most beneficial in developing and supporting reading development in students, including students with dyslexia. Experts have challenged which method and curriculum is the best and most effective in teaching children how to read (Burk & Hasbrouck, 2023). Throughout the 20<sup>th</sup> and 21<sup>st</sup> centuries, media, public, and political evaluation of reading proficiency in the United States has primarily focused on phonics instruction, standardized test scores, international comparisons of standardized test scores, and instructional approaches to literacy instruction (Thomas, 2022). These instructional approaches have taken various names and forms, for example, Balanced Literacy, Look-Say, Whole

Language, and the Science of Reading (Burk & Hasbrouck, 2023). Classroom teachers, interventionists, and administration must conceptualize effective, evidence-based interventions to support increased reading proficiency (Knight, 2018; NAEP, 2022).

### **The Reading Wars**

Reading achievement will often be influenced by the type and quality of instruction provided (Elliott, 2020). With only 33% of U.S. students reading proficiently, it is essential to understand what type of literacy instruction best promotes learning to read (NAEP, 2022). The debate over which curriculum and instructional methods are most effective in teaching students how to read have divided experts, districts, and educators into two groups, either phonics or whole language approaches (Burk & Hasbrouck, 2023; Fisher et al., 2023). These two approaches, phonics, or whole language can be described as the use of bottom-up or top-down approaches to reading instruction (Fisher et al., 2023). For example, the bottom-up approach can be systemized as students master skills required to identify letters, phonemes, and graphemes. Furthermore, the top-down approach applies more value to background knowledge, comprehension, and meaning (Fisher et al., 2023). In districts across the United States, there is a curriculum debate regarding instructional practices related to the Science of Reading and the balanced literacy approach. Thus, the divide between balanced literacy and the science of reading approaches emerged.

Balanced literacy does not offer a definitive meaning or approach. A balanced literacy approach is generically defined as a mix of some phonics with whole language learning (Snow, 2020). Additionally, since the 1990s, the approach to balanced literacy has changed to include instruction in foundational skills, making meaning, and varying instructional strategies (Snow, 2020). Instruction within the balanced literacy program has become identified by practices such

as read-aloud, guided reading, shared reading, and independent reading and writing (Fisher et al., 2023). Balanced literacy does not align with the recommendations of advocates of the science of reading as systematic, explicit instruction is not at the core of their reading instruction. As more research has been conducted into how students learn the Science of Reading has emerged to provide a comprehensive outline on reading instruction.

The Science of Reading is a collection of research that combines insights and research from subject matter experts in developmental psychology, educational psychology, cognitive science, and cognitive neuroscience (Burk & Hasbrouck, 2023). Reading instruction based on the Science of Reading supports brain development so that children with reading differences, for example, dyslexia, can be provided with systematic, explicit interventions and instructional strategies that can create lasting changes (Klages et al., 2020). The Science of Reading is demonstrated through various empirical research strategies for teaching all students to read in English (Hindman et al., 2020). The Reading League (2022) describes the Science of Reading as research conducted over the several decades to scientifically support areas of concern related to reading and writing. Additionally, the Science of Reading has extensive evidence to support effective instructional practices in both reading and writing to improve student outcome by using evidence-based practices for the prevention of and intervention for reading difficulties (The Reading League, 2022). Early elementary students and older struggling readers benefit from explicit instruction in foundational literacy skills to promote reading proficiency (Hudson et al., 2021).

Structured literacy is the common term for explicit and systematic literacy instruction. However, since as early as the 1920s, experts in the community have defended that dyslexic learners require explicit and systematic instructional methods that include multisensory

approaches to grow reading (Al Otaiba et al., 2018). The recommendations for multimodal and hands on instruction led to the cumulative multisensory instruction (Hall et al., 2022). Multisensory instruction includes explicit phonics (Schraeder et al., 2021). This form of multisensory phonics instruction means that teachers explicitly teach the phone-grapheme relationships utilized through written English (Schraeder et al., 2021). This form of instructional strategy has resulted in student progression in decoding (Shaywitz et al., 2021).

As connections between visual/auditory and kinesthetic/tactile learning approaches advanced, neurologist Samuel Orton and his assistant Anna Gillingham introduced a multisensory dyslexia intervention that is now known as the Orton-Gillingham approach (Hall, et al., 2022). Additionally, structured literacy programs allow educators to provide instruction to prepare students to decode words utilizing a systematic and explicit manner (Woods & Graham, 2020). Elements of curriculum within structured literacy programs include phonology, syllable instruction, sound-symbol association, morphology, syntax, as well as semantics (Woods & Graham, 2020). Educators with high levels of knowledge and self-efficacy can promote student achievement through phonemic awareness to enhance reading proficiency.

Teachers who have high levels of knowledge in specific language structures and phonological awareness are more likely to teach these skills as well as teach these skills correctly (Schraeder et al. 2021). Additionally, teachers may recognize the importance of teaching phonemic awareness and phonics to students with dyslexia, but they may not have the foundational knowledge to support the learning. For example, Hudson et al. (2021) noted that teachers who have insufficient knowledge of foundational literacy skills that have proven necessary for providing effective reading instruction based on the science of reading are likely to be less effective in implementing effective reading instruction. Teachers need to remain

knowledgeable about the science of reading. Hudson et al. (2021) noted that even a well-designed curriculum is not an adequate replacement for a knowledgeable educator who understands the science of reading and how to implement effective literacy instruction.

### **Intervention Structures**

Most school districts in the United States utilize some methods of response to intervention (RTI) within a Multi-Tiered Systems of Support (MTSS) for reading intervention at the elementary level (Adlorf, 2020). MTSS or RTI is a data-driven system of intervention designed to collaboratively meet student academic and social/emotional concerns (Shillingford et al., 2021). Multi-Tiered Systems of Support models incorporate behavior and social-emotional learning supports to meet the needs of all learners, whereas they address academic skills, specifically in reading and math (Al Otaiba et al., 2018; Roop & Howe, 2022). Based on individual student needs, MTSS or RTI utilizes assessment data, interventions, and evidence-based instruction to provide tiered services (Shaywitz & Shaywitz, 2020; Shillingford et al., 2021).

Response to Intervention (RTI) was added to the 2004 reauthorization of the Individuals with Disabilities Education Act (IDEA) and adopted by most public-school systems across the United States (Shaywitz & Shaywitz, 2020). RTI is a school-implemented program typically made of three tiers (Sadusky et al., 2021). Students are assigned tiers based on district eligibility criteria (Fien et al., 2021). According to Roop and Howe (2022), RTI provides the opportunity for early identification and intervention for reading challenges by implementing targeted or intensive research and evidence-based instructional strategies. RTI begins in the general education setting with the implementation of a screening process for all students. Tier 1 instruction occurs within the general education classroom in a whole group setting. Targeted

interventions categorize students in Tier 2, and intensive interventions categorize students in Tier 3.

Response to intervention consists of learning support based on a student qualifying for Tier 2 or Tier 3 instructional support if needed, with all learners receiving high-quality Tier 1 instruction within their general education class (Fien et al., 2021). Per district-set criteria, students demonstrating a delay in reading skills are provided with Tier 2 Students or Tier 3 support, with a reading interventionist or specialist, if needed. Tier 2 support is paired with educator professional development and coaching to support the implementation of explicit instruction, intervention, and data-driven instructional decision-making (Fien et al., 2021). Students demonstrating their skills are not sufficiently remediated by Tier 3 instruction and are referred to specialized education for further assessment (Sandusky et al. 2021).

Students in schools where MTSS is the framework for interventions are continually progress-monitored to determine skill progression and the necessary level of intervention Tiers and support (Roop & Howe, 2022). This form of progress-monitoring allows educators and district stakeholders to reflect on student achievement and make data-informed decisions on instructional practices. In addition to diagnostic and progress monitoring data from specified district sources, teachers must be knowledgeable about the characteristics of dyslexia and instructional strategies to support students with dyslexia. The essential components of RTI must be implemented utilizing culturally responsive and evidence-based practices to support improved student outcomes (National Center Response to Intervention, 2010).

As a significant number of districts across the United States use RTI as a form of identification and intervention method, teachers need to be knowledgeable of the characteristics of dyslexia as well as effective instructional strategies to support students with dyslexia to

increase the reading proficiency rate among all students (NAEP, 2022). Teachers in the classroom provide Tier 1 and Tier 2 reading instruction in the general education classroom. Fien et al. (2021) noted it is vital for educators to ensure the following: make Tier 1 reading instruction accessible to all students, provide vertical alignment of instructional content from Tier 1 in Tier 2 small group instruction, and utilize scientific, research-based Tier 2 interventions. Ensuring students receive high-quality instruction during their Tier 1 instructional time is vital to the academic progression of their reading abilities. For example, at-risk students must be provided accessible instruction as they spend most of their time in the general education class for core subject areas. This intervention further supports the concept that students who may not have been identified require high-quality Tier 1 instruction, as well as the importance of teachers conceptualizing dyslexia characteristics to support the identification and instruction of students with dyslexia.

Reading interventions based on the science of reading are necessary to support students with dyslexia regardless of their tiered level of instruction (Klages et al., 2020). A MTSS with RTI model has demonstrated efficacy in enhancing teacher and student outcomes (Fien et al., 2021). Teachers who provide high-quality instruction at all tier levels continue to engage students and support learning through scientific, research-based practices. It is essential to understand the types of strategies and instructional methods teachers use to promote academic success for students with dyslexia. Furthermore, as the MTSS and RTI models are implemented across districts nationwide, it is essential to understand the legislation and policies to promote knowledge of dyslexia and protect students with dyslexia.

## **Mandated Dyslexia Protocol**

Due to 20% of students needing dyslexia support, legislation at the federal and state levels has been created and implemented to promote knowledge of dyslexia and protect students with dyslexia tendencies (Yale, 2022). Due to the negative consequences often associated with dyslexia, advocates have supported students to receive timely and appropriate identification and intervention (Catts & Hogan, 2022). Many states have proposed legislative initiatives promoting dyslexia professional development for educators, curriculum requirements, and mandatory screeners for at-risk or identified with dyslexic tendencies (Youman & Mather, 2018). In addition to many state requirements to screen and identify students who may be at risk for dyslexia, there are comprehensive federal laws and regulations to support identifying students with potential disabilities known as Child Find (Graham, 2021). For a student with dyslexia to receive academic services in schools according to the free appropriate public education (FAPE) mandate for all, established by the United States federal government, they must be considered to have a specific learning disability under section 1401 of the IDEA, (2019). A student is considered to have a specific learning disability if “one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations,” (IDEA, 2019, Section 1401). Federal legislation recognizes dyslexia under IDEA as a specific learning disability. However, this legislation fails to provide specific legislation on criteria to diagnose, accommodations, and services for the student, in addition to required professional development for educators and administration (Cooper, 2023).

With a lack of specification from federal legislation, states have created clarifying legislation. Every state in the United States has some form of legislation for dyslexia that

addresses its identification, remediation, and instructional practices (Roop & Howe, 2022). In addition, the National Center for Improving Literacy (2021) reports that 13 states have legislation regarding requirements for pre-service educators, 25 states regarding pre-service educators, and 25 states require in-service teachers to be educated on dyslexia tendencies. Though most state in the United States have mandates on dyslexia screening, intervention, or professional development, there is little research that exists on relationships between these mandates and improved dyslexia identification or intervention results (Anderson, 2021). With variables surrounding the requirements for knowledge of educators and identification procedures varying from state to state, understanding teachers' perceptions of dyslexia and instructional strategies to support dyslexia can contribute to raising underperforming scores in reading proficiency (Yale, 2022).

### **Educators' Conceptualization of Dyslexia**

Elementary students are not meeting state reading proficiency requirements (NAEP, 2022). Reading proficiency in children can be lacking due to various obstacles, most often due to dyslexia (Al Otaiba et al., 2018; Miciak et al., 2022). With approximately 20% of the population of students experiencing tendencies of dyslexia, teachers need to be properly informed and trained on effective instructional strategies to support these learners (Yale, 2022). Though states are refining their protocol for identifying and supporting students with dyslexia, a deeper understanding of teachers' knowledge about dyslexia and what types of instructional strategies prove beneficial in supporting students with dyslexia (Jones et al., 2019).

Though extensive research exists to provide an understanding of common characteristics of dyslexia, there are predominant misconceptions among educators. Misconceptions regarding dyslexia have been reported in research relating to educators' conceptual knowledge of the topic

(Ramil et al., 2019; White et al., 2020). For example, shared common misconceptions about dyslexia include: (a) writing letters and words backward are dyslexia tendencies; (b) visual perception challenges cause dyslexia; (c) students with dyslexia benefit from colored text overlays; (d) dyslexia only affects students who speak English as their primary language; and (e) a student with dyslexia will never meet proficiency in reading (Kumas et al., 2021; Mullikin et al., 2021; Schraeder et al., 2021; White et al., 2020).

A common misconception linked to dyslexia is that dyslexia is caused by a lack of visual perception (Kumas et al., 2021). In a study of 144 principals surveyed, 74% of participants indicated that a simple characteristic of dyslexia is seeing letters and words backward (Schraeder et al., 2021). Schraeder et al. (2021) reported that 75% of the participants surveyed incorrectly identified that visual-perceptual deficits caused dyslexia and number/letter reversals. To further this misconception, a study by Mullikin et al. (2021) reported that 82% of teachers surveyed incorrectly identified that reversing letters and words is a basic characteristic of dyslexia. Based on this information, many of the participants surveyed consider reversals and backward letters/numbers to be the only predictor of dyslexia. Knight (2018) conducted a study of 250 faculty and students within a college of education in the United States that discovered misconceptions regarding a direct correlation between dyslexia and visual impairments. Additionally, Schraeder et al. (2021) reported 83% of participants believed the misconception that vision therapy, including colored overlays and/or colored lenses, could assist students with dyslexia. This misconception can significantly impede a student's academic growth through a lack of research-based interventions provided by the classroom teacher to promote the progression of reading skills if students identified with dyslexia are provided with a colored overlay to support their reading.

Educators with misconceptions surrounding dyslexia are less likely to have quality or adequate knowledge to provide effective, evidence-based instructional methods to students with the greatest need. Misconceptions of dyslexia impede students from receiving best practices for identification and intervention (Anderson, 2021). For example, a student may experience a delay or misidentification for dyslexia because the student who is not reversing letters in written form is not suspected of having dyslexia. Additionally, these educators with misconceptions will likely employ less effective instructional strategies to support students with dyslexia.

Researchers have identified a lack of professional development in dyslexia, deriving from the concept that one cannot teach what they do not know (Anderson, 2021). Betts et al. (2019) reported that myths surrounding dyslexia exist at similar rates, from pre-service and in-service educators to higher education instructors. Research on improving teachers' dyslexia knowledge showed no sign of significant differences in misconceptions among education majors. Thus, resulting in reports of no significant differences among special education or elementary education majors. Additionally, a study by White et al. (2020) reported no differences in dyslexia knowledge between education and non-education majors, meaning that differences in misconceptions were insignificant between the general and special education majors. These findings further implicate the need to promote accurate information surrounding dyslexia as general education and special education teachers will likely experience providing instruction to students with dyslexia.

## **Summary**

This qualitative case study aimed to explore how 3rd – 6th-grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. According to the National Center for Education

Statistics (2022), only 33% of fourth-grade students meet proficiency levels in reading. This lack of reading proficiency has led to the need to educate teachers on dyslexia, the identification of dyslexia, and instructional strategies to support students with dyslexia (Hindman et al., 2020; Gonzalez, 2021; Hindman et al., 2020; Mullikin et al., 2021). There remains a gap in the literature that examines the need to understand the perceptions of knowledge and instructional strategies to support students with dyslexia (Gonzalez, 2021; Jones et al., 2019; Mullikin et al., 2021).

Bandura's self-efficacy theory provided the theoretical framework for the case study, as Bandura (1977) describes teachers' self-efficacy as their beliefs about their ability to produce desired student achievement. To address this problem, the study was used to explore how teachers describe their knowledge and instructional practices to overcome training gaps to support students with dyslexia. This provided a deeper conceptualization of teachers' success, self-efficacy, and professional needs to benefit student academic achievement. By gaining a deeper understanding of how teachers describe their knowledge and instructional strategies to overcome training gaps to support students with dyslexia, there is a potential to enhance knowledge on dyslexia and instructional practices to support students with dyslexia.

This proposed study was used to address the gaps in the literature by examining teacher perspectives on dyslexia and instructional strategies to support students with dyslexia. Given that educators spend most of their time with students during school hours providing effective instruction, their role in providing effective instruction and interventions is necessary for the academic success of all students they serve, including those with and without dyslexia. Teachers can be the first to identify dyslexia tendencies and determine an appropriate course of action to support students and provide remediation. The purpose of this qualitative case study was to gain

a better understanding of teachers' perceptions of knowledge of dyslexia and instructional strategies to support students with dyslexia. Furthermore, teachers may enhance academic success by improving their self-efficacy through the improvement of their instructional practices and continuing their professional development in their teaching careers (Hindman et al., 2020). Chapter 3 will detail the research methodology, including the research study's design, data collection methods and procedures, and data analysis.

### **Chapter 3: Research Method**

The problem addressed through the utilization of this study is that 82% of teachers surveyed in research studies incorrectly identified the basic characteristics of dyslexia (Mullikin et al. 2021). A study conducted by Gonzalez (2021) reported 30% of educators disclosed not receiving effective training or no training to support teaching students with dyslexia and a lack of training in understanding dyslexia. Schraeder et al. (2021) reported that as many as 92% of educators indicated they lack the essential knowledge to implement instruction for students with dyslexia. Additionally, Schraeder et al. (2021) reported that 20% of these educators reported not receiving professional development in implementing effective reading instruction.

The purpose of this qualitative descriptive case study was to explore how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. This study was used to support social cognitive theory, specifically self-efficacy theory, as it provided a theoretical framework for conceptualizing teachers' perceptions. This theoretical framework was appropriate for the study as a focus of exploring the perceptions of educators' knowledge of dyslexia and instructional strategies for supporting students with dyslexia.

This chapter contains details on the research methodology and design for the study. This section is organized by research methodology and design, population and sample, instrumentation, data collection and analysis, assumptions, limitations, and ethical assurance. The design for the study is a descriptive case study. This qualitative design aligned the problem, research questions, data collection methods, and data analysis.

The research methodology and design are detailed in Chapter 3, and the following research questions are addressed:

***RQ1***

How do 3<sup>rd</sup> - 6<sup>th</sup> grade general education teachers describe their knowledge of dyslexia characteristics?

***RQ2***

How do 3<sup>rd</sup> - 6<sup>th</sup> grade general education teachers describe the strategies they use to support students with dyslexia in their class?

***RQ3***

How do 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers describe how they overcome training gaps to support students with dyslexia?

**Research Methodology and Design**

Qualitative research is the term utilized for a wide variety of methods for the study of natural life (Saldana, 2015). Qualitative data collection is predominately, but not exclusively, a non-quantitative form, such as analysis of interview transcriptions, observation notes, documents, or other visual materials (Saldana, 2015). According to Ellis and David (2023), a qualitative research method is utilized to collect real-world data in words without pre-selected answers while interpreting the meaning from interviews. This is further confirmed by Saldana (2015), who stated that open-ended responses gathered from personal interviews are most effective when examining personal beliefs, perceptions, and lived experiences. The primary focus of this study was to examine how teachers describe their knowledge and instructional strategies to overcome training gaps to support students with dyslexia. The qualitative approach is the most appropriate methodology for this study as it will promote a better understanding of the experiences.

The design for the study is descriptive case study research. A case study is an empirical research method that investigates a specific phenomenon (Yin, 2018). This descriptive case study explored how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Additionally, the use of descriptive case studies requires the researcher to rely on multiple sources of data evidence, specifically requiring data to converge through triangulation (Yin, 2018). The researcher utilized triangulation by multiple sources of evidence such as surveys, interviews, and a focus group.

A descriptive case study was the most appropriate research design for this research study, as the intention for the use of this study is to provide an in-depth exploration with the primary purpose of describing the participants' experiences (Yin, 2018). The phenomenon under investigation was teachers' knowledge of instructional strategies to support students with dyslexia. The goal of this qualitative descriptive case study was to explore how these teachers describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. The population selected for this study consisted of a sample comprising of 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers. Yin (2018) affirms that the use of case studies permits the researcher(s) to concentrate on in-depth situations and maintain a real-world perspective on specific groups, such as educators' knowledge and instructional strategies.

Additional qualitative methods were reviewed but not chosen as the methods do not align with the purpose of this study. For example, ethnographies require long periods of time in the field to allow the researcher to gather observational and interview evidence (Yin, 2018). Participant-observation may also lead to a large amount of field presence (Yin, 2018). A case study approach as a form of inquiry does not require only ethnographic or participant-observer

data (Yin, 2018). Therefore, a case study was the most appropriate research design for this research study.

A quantitative research methodology was considered but rejected as this method of research is limited in the responses from participants. The researcher can utilize a quantitative method to methods are appropriate when analyzing data that holds an important level of complexity for a quantitative research approach (Merriam & Tisdell, 2016). Additionally, a mixed methods design to include both qualitative and quantitative methods was also briefly considered a possible study methodology. The primary goal of qualitative methods is to gain an understanding of “why” and “how” (Yin, 2018). The use of qualitative research methods allowed the researcher to explore participants’ experiences in a natural environment without assigning pre-determined categories or standardized sub-sets, as quantitative research requires. Additional qualitative methods were reviewed but not chosen as the methods did not align with the purpose of this study. For example, ethnographies require long periods of time in the field to allow the researcher to gather observational and interview evidence (Yin, 2018).

### **Population and Sample**

The target population for this study was 3<sup>rd</sup> – 6<sup>th</sup> grade teachers in the United States. According to the National Center for Education Statistics, there are over 3.1 million full-time teachers in the United States (Riser-Kositsky, 2019). The participants in this study were 3<sup>rd</sup> – 6<sup>th</sup> grade teachers within the United States who teach in an inclusive general education setting. General education teachers serve students in an inclusive environment (Miyachi, 2020). As 20% of the population experiences tendencies of dyslexia, these 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers are likely to provide instruction to students with dyslexia (Yale, 2022). By focusing on this target population of elementary educators, the researcher aims to gain an understanding of

how these teachers implement instructional strategies to support students with dyslexia. Previous research by Torterrelli et al. (2021) focused the pre-service teachers' experiences in training as well as educators' professional development; however, the previous studies did not provide insight as to how teachers describe their knowledge of dyslexia and or the strategies used to support students with dyslexia in their class.

A purposive sampling method was used to select a sample of 42 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers to participate in a questionnaire, semi-structured interviews, and a focus group. As this study was qualitative in nature, requiring a sample size necessary to ensure an 80% certain of producing a statistically significant outcome to identify whether hypothesizes is true for the identified population is unnecessary (Andrade, 2020). The qualitative study consisted of a sample size of 42 as broken down by each data collection method. A questionnaire was assigned to 25 participants to gain a deeper understanding of teachers' knowledge of dyslexia how they describe their knowledge of instructional strategies to support students with dyslexia. Semi-structured interviews were conducted to gather data from 10 different participants via Zoom. As most datasets reach saturation utilizing between 9 and 17 interviews, 10 interviews were proposed for this study (Hennink & Kaiser, 2022). Additionally, a focus group was conducted to include a group of seven participants. Bryan and Graham (2022) stated that a focus group consisting of two to 12 participants is typical for a dissertation researcher as sufficient data can be gathered as well as the novice researcher can achieve data saturation through effectively structuring and moderating a focus group. The participants in the focus group were different from those that participated in the semi-structured interviews to ensure data saturation and gain understanding of experiences from a greater sample of the population.

Yin (2018) suggested utilizing multiple sources of evidence to go beyond the traditional span of a case study. This data triangulation allowed the researcher to strengthen the study's reliability and validity (Yin, 2018). Based on the need for triangulation, the study was used to collect data from participants' responses from questionnaires, semi-structured interviews, and focus groups. The researcher intended to include a variety of perspectives and ensures that each group will contain different participants for each method of data collection, totaling the number of participants needed for the study to approximately 42 participants. Data saturation is a concept that can be utilized to determine the sample size, however, Braun and Clarke (2022) reported that saturation can present a problematic claim. Rather than claiming data saturation for this study, the research was used to reflect on the information and data collected from the study as to how it interacts with the requirements and goals of the proposed study (Braun & Clarke, 2022).

The researcher received permission from National University's Institutional Review Board (IRB) to begin the study. The questions were reviewed and approved by a panel of experts. The researcher then began recruitment. Initial recruitment included posting the recruitment flyer on social media. After gaining site permission from the administrator of the Facebook group, Science of Reading – What I Should Have Learned in College, the researcher posted the approved recruitment flyer on the site (Appendix C). The communication included an overview and purpose of the study with the reason educators were being asked to participate. The primary purpose of the initial social media recruitment post was to notify as many participants as possible about the study's purpose and the participation requirements. As potential participants responded to the post on social media, the researcher sent the potential participants a consent form to finalize the process of recruitment.

## Materials

For this study, the researcher utilized a questionnaire, semi-structured interviews, and one focus group discussion. The Dyslexia Belief Index was utilized as a questionnaire to gain information about educators' beliefs regarding dyslexia. Permission to utilize the Dyslexia Belief Index (DBI) was obtained prior to conducting research (Appendix E). The DBI was utilized as a questionnaire to identify differences in beliefs on dyslexia based on experience, gender, grade level taught, location of earned degree, and personal experience in teaching students with variety of dyslexia tendencies. This questionnaire was developed by Wadlington and Wadlington to measure knowledge and beliefs of participants with a 30-item questionnaire based on statements about the origination, characteristics and tendencies, treatment, classroom environment, and impact on individuals with dyslexia. The researcher converted the DBI into a Google Form for ease of participant response and to enhance validity.

An interview protocol (Appendix A) consisted of a series of questions based on literature, theory, and the proposed research questions. The interview protocol aligned with the problem and purpose of this proposed study and will be reviewed and approved by a panel of experts. This panel was drawn from teacher leaders and specialists working with 3<sup>rd</sup> – 6<sup>th</sup> grade students in the United States. A protocol was utilized for the one-to-one semi-structured interviews. Before collecting data, the protocol was field tested by two volunteers that meet the criteria for this research study. The purpose of these field tests was to ensure that the interview questions were purposeful and intentional. With volunteer approval, the interviews were conducted and recorded via Zoom and transcribed verbatim.

Semi-structured interviews followed the interview protocol that was field tested with two volunteers who are part of the target population but were not utilized as participants for the

study. The field test was conducted to ensure the protocol and interview questions are appropriate and aligned to the purpose of the study as well as provide data to answer the research questions. The initial field test prompted the researcher to modify the interview questions to provide the opportunity for more elaborate and reflective responses. The researcher aimed to fully address the research topic and research questions using the interview questions. The field test results are provided in the table below:

**Table 1**

*Field Test Output (with Volunteers)*

Field Test Volunteer	Test Setting	Interview Duration	Transcribed Single-spaced Pages	Initial First Round Open-Codes
FTV1	Zoom	73 minutes	16 pages	92
FTV2	Zoom	62 minutes	15 pages	108

The semi-structured interviews included open-ended questions. According to Yin (2018), one of the most important sources of case study evidence is interviews. Additionally, by conducting semi-structured interviews, the researcher is better able to maintain confidentiality of each participant. It was anticipated that each interview would take approximately 60 minutes. The researcher modified the interview protocol based on feedback from the field tests and then utilize the protocol to guide the semi-structured interviews. Each interview was conducted and transcribed through Zoom. The themes from the interviews were used to develop the focus group discussion questions (Appendix B).

A focus group was conducted with participants who are different than those that participated in the questionnaire and interviews. Focus groups allow a researcher to moderate a discussion while intentionally supporting each participant's views to surface (Yin, 2018). For the

research study, seven participants were selected to represent 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States. Focus groups range from three to twelve participants, as defined by the researcher, and generally last no more than 90 minutes (Bryan & Graham, 2022). The seven participants selected for the focus group were different than participants selected for the questionnaire and interviews. The focus group was anticipated to last approximately 60 minutes in length. The purpose of the focus group was to provide in-depth information on 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia.

### **Study Procedures**

After permission was received from National University's IRB, the researcher began the initial recruitment for the study. The recruitment process began with the researcher posting the recruitment flyer on social media (Appendix B). The researcher gained permission to post the recruitment flyer from the administrator of the Facebook group, Science of Reading – What I Should Have Learned in College (Appendix C). The recruitment flyer included an overview of the purpose of the study with the reason educators were being asked to participate. The criteria to participate in the study included 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States.

Participants responded to the recruitment flyer via a link to a Google Form if interested in participating with their contact information and the signed consent form. Once the educators agreed to participate in the study the researcher assigned the participant to the appropriate data collection method. The researcher assigned an identifying label (T1 – T42) to each participant to ensure privacy and confidentiality. The first 25 respondents were assigned to the questionnaire. Each participant received the questionnaire via email with instructions on how to complete the questionnaire via google forms.

The subsequent 10 respondents were assigned to interviews. After participants were selected, they were contacted via email to schedule a time for their interview. Since the target population for the proposed study included 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers that could be located at any location within the United States, the data collected virtually for the semi-structured interviews and focus group. The semi-structured interviews were conducted via Zoom, and a meeting invite will be sent out to each participant. All interviews were recorded and transcribed. The transcripts were sent to each participant and returned with any changes within 72 hours. The researcher ensured that all personal identifying information is removed from the participant's transcript, to include district or school names, students' information, or other identifiable information. After the interview was transcribed, the researcher returned the transcripts to each of the interviewees for member checking. Member checking ensured each participant's meaning was straightforward and a comprehensive understanding of their responses was portrayed regarding each educator's knowledge and instructional strategies to support students with dyslexia. Member checking was utilized to provide an opportunity for participants to review the researcher's results and analyses to confirm the authenticity of their experiences and practices (Braun & Clarke, 2022). Participants had 72 hours to review their transcription and make any revisions as they deemed necessary. If no email is received by the end of the 72-hour mark, it was concluded that no revisions were to be made, and the participant was confident in the transcription.

The next seven respondents were assigned to the focus group. The participants in the focus group were different than the interviews and questionnaire. The focus group session was conducted via Zoom. At the beginning of the focus group, the researcher reviewed the informed consent and notified the participants that the session will be recorded. All interviews and the

focus group session utilized the transcription feature embedded in Zoom. By recording and transcribing the Zoom sessions, it provided an opportunity for the researcher to record, review, and synthesize the data collected from each interview and focus group in an accurate and efficient manner. The focus group lasted approximately 60 minutes. At the end of the session, all participants were thanked for their time and participation in the study.

### **Data Analysis**

The data for this research study were collected from a questionnaire, semi-structured interviews, and a focus group. Thematic analysis is conducted through guidelines based on the theoretical framework (Braun & Clarke, 2022). A reflexive thematic analysis approach was used as outlined in six phases by Braun and Clarke (2022). Braun and Clarke's (2022) reflexive approach to thematic analysis includes a six-phase coding and analysis process until themes emerge across the dataset. Braun and Clarke (2022) provided a six-phase process to analyze a data set: (a) become familiar with the data, (b) generate initial codes, (c) search for themes, (d) review themes, (e) define and name themes, and (f) produce the report.

Phase 1 revolved around will involve the researcher becoming familiarized with the data set (Braun & Clarke, 2022). This phase required the researcher to fully immerse themselves in the data. In this phase, the researcher read and re-read the data from questionnaires, interviews, and focus group transcripts while taking notes about any insights related to the responses individually or as a whole. After data were collected and thoroughly understood by the researcher, the researcher organized and analyzed the data using NVivo through importing the transcribed data into the software.

Phase 2 allowed for initial codes to be generated. In this phase the researcher initially coded the data and assembled the codes in a proper order based on the dataset (Braun & Clarke,

2022). During this phase, the researcher began to organize the data in a meaningful and systematic way. The NVivo data analysis software was utilized to organize and analyze the data into emerging themes.

Phase 3 of reflexive thematic analysis occurred when the researcher reflected on patterns in the codes across the dataset and themes begin to emerge (Braun & Clarke, 2022). This phase required the researcher to search for themes. A theme is a pattern that signifies something relevant to the data or research question (Braun & Clarke, 2022). Based on the dataset, there may be overlap between the coding in Phase 2 as well as Phase 3 as this stage identifies preliminary themes.

In Phase 4, the researcher assessed the viability of the overall themes and analysis by going through each individual code to determine if the code aligned with the overall dataset (Braun & Clarke, 2022). According to Braun and Clarke (2022), the researcher detained or eliminated themes while trying to focus on the central organizing concept. To examine each theme, the researcher reviewed each theme with the associated data to ensure the theme is useful and consistent with the data.

In Phase 5, the researcher refined the themes based on whether they aligned with the overall synopsis of the data and goal of the research study (Braun & Clarke, 2022). In this phase the researcher fully defined and named these that directly addressed the research question related to the study (Braun & Clarke, 2022). To ensure identity of patterns within the dataset, the researcher was thorough and reviewed themes to ensure they were appropriately named. This ensured the researcher was able to present accurate findings from the study in a clear and concise manner.

Phase 6 was used for the researcher to provide a summation of the overall dataset and its relation to the research questions within the study (Braun & Clarke, 2022). Simply put, in this phase, the researcher produced the final analysis of the findings of the study based on the purpose and research questions that aligned with the study. The final write up presented the findings in a manner that demonstrates the connections between the themes and the research questions.

Data collection sources included questionnaires, semi-structured interviews, and a focus group to best support data triangulation. This use of triangulation merged the data collection methods to provide a range and diversity of qualitative data (Braun & Clarke, 2022). The use of various research methods and data sources in qualitative research allowed the researcher to develop a comprehensive understanding from the data collected.

### **Assumptions**

This research study was used to collect data surrounding educators' knowledge and instructional strategies for students with dyslexia. The researcher anticipated the findings from this study to provide insight on teachers' experiences with dyslexia and supporting students with dyslexia. It is an assumption that teachers were honest and answered the questions with integrity. It was anticipated that through the honest answers provided by educators, the level of knowledge surrounding dyslexia and the instructional strategies used to support students with dyslexia were identified. Additionally, it was anticipated that the findings from this study will add to the existing literature. Furthermore, the researcher expected to fill the gap in identifying instructional methods to support students with dyslexia from responses of participants who utilized instructional strategies to support students with dyslexia. The final assumption is that the sample

population selected for this proposed study was a true representation of 3<sup>rd</sup>-6<sup>th</sup> grade educators in addition to the sample size being large enough to reach saturation.

### **Limitations**

This proposed research study had potential limitations. One possible limitation is that the study only included 3<sup>rd</sup> – 6<sup>th</sup> general education teacher participants. Another possible limitation is that the data collected from questionnaires, semi-structured interviews, and focus groups only included general education classroom teachers. The proposed study did not include insight from intervention teachers, special education teachers, paraprofessionals that provide instructional support, and other specialists within the classroom settings that provide instructional support for students with dyslexia.

### **Delimitations**

The research study presents limitations. First, eliciting open research and responses from 3<sup>rd</sup> – 6<sup>th</sup> grade teachers in general education across the United States could be considered a delimitation as participants are only from a select grade range as well as general education and not the population of educators. This does limit data collection to general education and does not include responses from special education. Additionally, this limited the responses from specialists, paraprofessionals that provide academic support, and resource instructional specialists. By limiting responses from specialists, paraprofessionals, and other instructional specialists, the researcher focused on the target general education population to align the study to focus solely on exploring general education teachers' knowledge of instructional strategies to support students with dyslexia.

## **Ethical Assurances**

The researcher obtained approval for this research study from National University's IRB to ensure all ethical procedures are followed. All participants provided and acknowledged informed consent before sending out questionnaires and beginning interviews or focus groups. An informed consent document was provided to all participants to outline the purpose of the study, how participants' responses from the questionnaire, interviews, and focus groups will be used, the risks involved with participating in the study, and the potential benefits of the study. Participant confidentiality was utilized at all times of the study. The study's research design was created to ensure ethical procedures are met as there was no contact with minor students in this study. All data were stored on a computer with a secure drive and folder that is password protected. All hard copies of any identifying information were secured in a locked environment. All data will be permanently deleted and hard copies will be destroyed 1 year after publication of the dissertation.

Additional measures to ensure ethical considerations are held to the highest integrity is that the researcher intends to ensure that all communication between researcher and participants is conducted with integrity and transparency. The researcher also intended to inform all participants about consent, confidentiality, and data storage. The researcher has been an educator for more than 15 years in various positions in general education, special education, and administration. These positions have provided the researcher with experience and exposure to working with students with dyslexia and instructional strategies to support students with dyslexia. Researcher preconceptions were made aware, and care will be taken to lessen bias and data integrity (Yin, 2018).

## Summary

The purpose of this qualitative descriptive case study was to explore how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. This chapter was used to provide a logical explanation for using a qualitative approach to study the proposed research questions. Additionally, this chapter contains the details outlining a rationale for the use of a case study as the research design. This research study was used to address the need to gain multiple perspectives from 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers across the United States. The descriptive case study design was used to allow the researcher to gather data in a comprehensive manner. After National University's IRB approved the study, the researcher began initial recruitment.

The researcher recruited participants from a Facebook group designed for instructional support. Interested candidates contacted the researcher to express interest and gain further information about the proposed study. Interested candidates received an email that included the study's purpose and informed consent. Once the researcher received a signed copy of the participant's informed consent, the participant was assigned to participate in the following: a questionnaire, semi-structured interview, or focus group.

The researcher intended to use an open-ended questionnaire and semi-structured interviews to ensure that each participant was asked questions based on the theoretical framework, review of literature, and alignment of the research questions. Participants in each data collection method varied to ensure all participants were only assigned to one data collection method. The semi-structured interviews and focus group responses were recorded and transcribed using Zoom. The data collected from the transcriptions were analyzed using Braun

and Clarke's (2022) reflective thematic analysis approach. The researcher used NVivo to code the transcripts.

This chapter also addressed the proposed assumptions, limitations, and delimitations. The assumption is that teachers were honest and responded with integrity. A limitation of the study was that the data collected were from 3rd – 6th-grade general education teachers in the United States. This was a small sample of the entire population of educators in the United States. A delimitation of the proposed study was that the potential participants would vary in location across the United States. The following chapter contains information regarding the study's discoveries derived from the questionnaire, interviews, and focus group discussions.

## Chapter 4: Findings

The purpose of this qualitative descriptive case study was to explore how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Educators employ a variety of instructional strategies to a wide range of learning ability levels. Based on the 2022 assessment results, only 33% of all fourth-grade students in the United States meet proficiency level or above in reading (NAEP, 2022). Reading proficiency can be directly impacted by dyslexia (Al Otaiba et al., 2018; Miciak et al., 2022). Dyslexia has been reported in 80-90% of individuals identified with a learning disability and represents approximately 20% of the population worldwide (Castillo & Gilger, 2018; Yale, 2022). Previous research has shown that educators lacked effective training in understanding dyslexia in addition to knowledge on supporting students with dyslexia (Gonzalez, 2021; Schraeder et al., 2021).

The problem addressed through the utilization of this study is that 82% of teachers surveyed in research studies incorrectly identified the basic characteristics of dyslexia (Mullikin et al. 2021). Teachers' lack of effective pedagogical reading training can negatively impact students' achievement (Berent & Platt, 2021; Hindman et al., 2020). Knowing that effective teacher preparation directly impacts student achievement and approximately 20% of the population exhibits dyslexia tendencies (Yale, 2022), understanding teachers' perceptions of instructional strategies to support students with dyslexia can influence student achievement. Without full understanding surrounding which instructional strategies prove beneficial to support students with dyslexia, 67% of fourth-grade students in the United States may continue to read below the proficiency level (NAEP, 2022).

Purposeful sampling was used to select a sample of educators from the targeted population of 3<sup>rd</sup> – 6<sup>th</sup> grade teachers who teach in an inclusive general education classroom. The sample size for this study was 42 participants. A questionnaire was assigned to 25 participants to gain a deeper understanding of teachers' knowledge of dyslexia as well as how they describe their knowledge of instructional strategies to support students with dyslexia. Semi-structured interviews were conducted to gather data from 10 different participants via Zoom. Additionally, seven participants were in the focus group. The participants of the focus group did not participate in the questionnaires or semi-structured interviews.

The data generated from the interviews and focus groups were analyzed using Braun and Clarke's (2022) reflexive approach to thematic analysis to include a six-phase coding and analysis process. A thematic analysis was used to connect common themes aligned with the three research questions. After a thorough review of the data, codes were generated. NVivo software was used to organize the data collected. Patterns were then identified within the codes. The codes were categorized into themes. A final review was conducted to add the coded data to themes.

Bandura's self-efficacy theory as the theoretical framework for this study provides a perspective through which this study of exploring how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Bandura (1977) explained teachers' self-efficacy as educators' beliefs about their ability to address students' academic outcomes. This theoretical framework was appropriate for the study because educators with high level self-efficacy tend to have higher levels of student achievement (Hindman et al., 2020). By gaining a deeper understanding on how teachers describe their knowledge and instructional strategies to support students with dyslexia, there is a potential to enhance knowledge on dyslexia and instructional

practices to support students with dyslexia. The results of this study aim to provide a deeper understanding of teachers' success, self-efficacy, and professional needs to benefit student academic achievement. There is a potential to enhance knowledge on dyslexia and instructional practices to support students with dyslexia through gaining a deeper understanding of how teachers describe their knowledge and instructional strategies to overcome training gaps to support students with dyslexia. This chapter contains the details on the findings of this study. The sections of this chapter are organized to include the trustworthiness of the data, results, and evaluation of the findings as they relate to the research questions.

### **Trustworthiness of the Data**

Trustworthiness serves as the cornerstone of rigorous qualitative research, ensuring that findings are grounded in factual evidence rather than shaped by the researcher's personal beliefs or biases. Establishing trustworthiness is essential for producing results that are both credible and ethically sound, and it plays a critical role in validating the overall integrity of a study. In this research, multiple methodological strategies were intentionally employed to enhance the trustworthiness of the data. According to Stahl and King (2020), the use of clearly defined and consistently applied research procedures fosters a sense of transparency and reliability, which in turn cultivates trust in the research process and its outcomes. The trustworthiness of this study's findings was established through the careful demonstration of four key criteria: credibility, which refers to the confidence in the truth of the data; transferability, which concerns the applicability of the findings to other contexts; dependability, which involves the stability and consistency of the research process over time; and confirmability, which ensures that the data and interpretations are shaped by the participants' input rather than researcher bias. Together, these

components provide a framework for ensuring that the research is both methodically sound and ethically responsible.

### ***Credibility***

Credibility was promoted with the use of data triangulation and member checking. Triangulation was used in the form of data collection by surveys, semi-structured interviews, and a focus group. These three data sources were used to develop convergent evidence. Data triangulation helps to establish the construct validity of the case study (Yin, 2018).

Member checking was used to establish credibility by each participant receiving a copy of the transcript of their recorded interview or focus group responses and requesting the participant to check the transcripts for accuracy. All audio was recorded and transcribed with Zoom's software. The original transcript was sent to all participants to check for accuracy. Transcripts were then compared with the audio recordings to ensure accuracy and completeness.

### ***Transferability***

Transferability is the ability for the research results to be reproduced if applied to a similar population of participants. To improve transferability the research should provide richly contextualized descriptives about the participants, settings, and procedures to provide the reader to determine where or not they can transfer the analysis to their own specific setting or situation (Braun & Clarke, 2022). This transferability is often applied when the researcher provides explicit description in settings, organizations, and any other descriptors that could potentially influence data collection (Stahl & King, 2020). Transfer in qualitative data is not exact but rather a suggestive notion that based on the descriptors in this study it applied to other situations of similar context.

The specific context of this study was how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. There was no limitation on demographics, years of employment in a teaching capacity, or demographics. There was no stipulation on age, gender identification, level of education, or race. The only requirements for participation in this study were to be a 3<sup>rd</sup> – 6<sup>th</sup> grade certified teacher, teach in the United States, and teach in a general education classroom. This study could potentially be transferable to other studies within a similar context. Additionally, this research can be transferrable and compared to further research surrounding how specific demographics of regions or level of education describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia.

### ***Dependability***

Dependability refers to the findings of the study being consistent and replicable if another researcher conducted the same study with a similar context and participants. This ensures the data can be replicated in future research studies. Further dependability relates to the researcher's anticipation of peer review (Stahl & King, 2020). This ensures the research findings are free of bias and opinion. An interview and focus group protocol (See Appendix A) was utilized to collect data based on the review of available literature, theoretical framework, and the research questions guiding this study. The use of three data sources, surveys, interviews, and a focus group, allowed me to compare the results and responses within each method of data collection.

### ***Confirmability***

To ensure the accuracy and confirmability of the data collected, all transcripts were reviewed by the participants themselves. This member-checking process allowed participants to

verify that their responses were accurately captured and interpreted, thereby enhancing the overall credibility and trustworthiness of the research findings. Prior to engaging in any surveys, interviews, or focus groups discussion, each participant was provided with a comprehensive informed consent form. The informed consent document outlined the purpose of the study, the voluntary nature of participation, and the measures taken to ensure each participant's privacy. Specifically, the informed consent detailed the protocols and procedures for maintaining confidentiality, included the de-identification of any personal or identifying information in both the analysis and the final reporting of the data collected. These ethical precautions were implemented to ensure participants felt safe, respected, and comfortable throughout the research process. By ensuring these procedures, the researcher aimed to approach data with minimal bias and get as close to an objective representation of the participants' experience as possible (Stahl & King, 2020). Furthermore, all interviews were scheduled according to the availability and convenience of each participant, fostering a comfortable, stress-free environment that encouraged openness and authenticity during conversations.

## **Results**

Permission to conduct this research was requested and granted from National University's IRB. Additionally, permission to recruit participants was provided by the administrator of the Facebook group, Science of Reading – What I Should Have Learned in College. After the recruitment flyer was posted in the Facebook group, Science of Reading – What I Should Have Learned in College, participants expressed their interest in participating in the study by completing a Google Form indicating their interest and confirming they met the criteria of the study. All participants' consents were completed and received before the study commenced.

After the researcher received the signed consent letters, the first 25 participants of the study completed the DBI as a method to gain information about educators' beliefs regarding dyslexia. This questionnaire was originally developed by Wadlington and Wadlington to measure knowledge and beliefs of participants with a 30-item questionnaire based on statements about the origination, characteristics and tendencies, treatment, classroom environment, and impact on individuals with dyslexia. The researcher converted the DBI into a Google Form for ease of participant response and to enhance validity. Table 1 contains a list of the attributes of the survey participants in the study. The table includes the participants' pseudonyms, gender, data collection activity, position in education, and their current grade level.

**Table 2**

*Survey Participants of the Qualitative Case Study*

<i>Participants</i>	<i>Gender</i>	<i>Activity</i>	<i>Position</i>	<i>Grade Taught</i>
<i>S 1</i>	Male	Survey	Educator	Grade 6
<i>S 2</i>	Male	Survey	Educator	Grade 6
<i>S 3</i>	Female	Survey	Educator	Grade 6
<i>S 4</i>	Female	Survey	Educator	Grade 4
<i>S 5</i>	Female	Survey	Educator	Grade 5
<i>S 6</i>	Female	Survey	Educator	Grade 6
<i>S 7</i>	Female	Survey	Educator	Grade 4
<i>S 8</i>	Female	Survey	Educator	Grade 5
<i>S 9</i>	Male	Survey	Educator	Grade 6
<i>S 10</i>	Female	Survey	Educator	Grade 4
<i>S 11</i>	Female	Survey	Educator	Grade 5
<i>S 12</i>	Female	Survey	Educator	Grade 5
<i>S 13</i>	Male	Survey	Educator	Grade 6
<i>S 14</i>	Male	Survey	Educator	Grade 5
<i>S 15</i>	Female	Survey	Educator	Grade 5
<i>S 16</i>	Female	Survey	Educator	Grade 4
<i>S 17</i>	Female	Survey	Educator	Grade 6
<i>S 18</i>	Female	Survey	Educator	Grade 6
<i>S 19</i>	Female	Survey	Educator	Grade 5
<i>S 20</i>	Female	Survey	Educator	Grade 6
<i>S 21</i>	Female	Survey	Educator	Grade 5
<i>S 22</i>	Female	Survey	Educator	Grade 6
<i>S 23</i>	Female	Survey	Educator	Grade 6
<i>S 24</i>	Male	Survey	Educator	Grade 6
<i>S 25</i>	Female	Survey	Educator	Grade 6

The ten different participants participated in semi-structured interviews via Zoom. Additionally, seven different participants participated in the focus group. The interviews and focus group transcripts were analyzed using NVivo. Table 2 summarizes the attributes of the participants of the semi-structured interviews and focus group participants. The information obtained included the participants' gender, data collection activity, and their position in education. Each participant was provided with a nonidentifying label to maintain anonymity.

**Table 3**

*Interview/Focus Group Participants of the Qualitative Case Study*

<i>Participants</i>	<i>Gender</i>	<i>Activity</i>	<i>Position</i>
<i>I 1</i>	Female	Interview	Educator
<i>I 2</i>	Female	Interview	Educator
<i>I 3</i>	Female	Interview	Educator
<i>I 4</i>	Female	Interview	Educator
<i>I 5</i>	Male	Interview	Educator
<i>I 6</i>	Male	Interview	Educator
<i>I 7</i>	Male	Interview	Educator
<i>I 8</i>	Male	Interview	Educator
<i>I 9</i>	Male	Interview	Educator
<i>I 10</i>	Female	Interview	Educator
<i>FG 1</i>	Female	Focus Group	Educator
<i>FG 2</i>	Female	Focus Group	Educator
<i>FG 3</i>	Female	Focus Group	Educator
<i>FG 4</i>	Female	Focus Group	Educator
<i>FG 5</i>	Male	Focus Group	Educator
<i>FG 6</i>	Male	Focus Group	Educator
<i>FG 7</i>	Male	Focus Group	Educator

Interview sessions and the focus group were conducted remotely at a time that was determined convenient for all participants. Protocols were utilized in all three methods of data collection. The Zoom interview sessions were transcribed utilizing the software within the Zoom platform. Final interview transcripts were sent to interviewed participants to review and confirm accuracy. Once approved by the participants, the transcripts were entered into NVivo for qualitative analysis. I took notes to identify relevant and appropriate information shared by the participants. The interview and focus group session results were analyzed with NVivo. A six-

step thematic procedure outlined by Braun and Clark (2022) was used to analyze the qualitative data. The six steps in the thematic analysis are: explore the data, generate initial codes, search for themes, review the themes, define and identify the themes, and execute the report (Braun & Clark, 2022). The data for this study were coded using NVivo and a manual process.

**Phase 1.** The first step in the thematic analysis is familiarization with the data. In this step, I familiarized myself with the data by reviewing the final transcript and editing the Zoom generated transcripts as it compared with the audio video recordings. Once each participant approved their final transcript, I reflected on each transcript and reviewed my notes from the interview. As I reviewed each transcript, I became more familiar with the content in each interview and began analyzing the transcripts for patterns and reoccurring themes. This allowed me to gain a deeper understanding of the data and identify any specific areas of focus for data analysis. I made notes on each transcript regarding context or other analytic ideas I had regarding the data. All approved transcripts were imported into NVivo for analysis and coding.

**Phase 2.** The second step of the thematic analysis method was the initial coding of the data. The goal of this step is to make the data simpler for themes and codes to emerge. Coding refers to the identification of sections of data as it relates to the research questions (Braun & Clark, 2022). I then coded the entire dataset systematically and thoroughly ensuring data alignment to each research question. The data from the interviews and focus group were combined into categories (see Figure 1).

**Figure 1***Initial Data and Code Categories*

<b>Data</b>	<b>Code Categories</b>
1. <b>Varied level of knowledge</b>	Wilson Certification General understanding
2. <b>Understanding of Dyslexia</b>	Definition of dyslexia Difficulties reading, writing, memory, or processing Inability to read and write Spelling Errors
3. <b>Emotional Impact</b>	Emotional withdrawal Low self-esteem timid
4. <b>Social Impact</b>	Social Isolation Lack of belonging
5. <b>Recognition through behavior</b>	Distracted / distraction Quiet Avoid Interaction Frequent Breaks Refusal
6. <b>Identifying students with dyslexia</b>	Student frustration Undesirable behaviors Shortened time on task
7. <b>Instructional Supports</b>	Visual aids Audio sources
8. <b>Use of Technology</b>	Assistive Technology Software and devices to support reading and writing Text to speech
9. <b>Types of strategies to support students with dyslexia</b>	Multisensory instruction Audio Books Quality Texts Adjusting speed, cadence, and pronunciation Wilson Instruction Music and texture Use of fingers (math)
10. <b>Student support</b>	Feel happy Empathy Personal relationship with students
11. <b>Challenges</b>	Time Administration School Policies Huge class size Meeting all the needs of each student Parental support
12. <b>Educators' support</b>	Interventionists Speech Pathologists IEP Team
13. <b>Resources provided by school to support students with dyslexia</b>	None – educators seek them None- educators create them Seldom professional development provided
14. <b>Need for additional professional development</b>	Attending additional seminars Zero professional development provided by school
15. <b>Learning through Experience</b>	On-the-job learning Classroom experience Experience Observation

**Phase 3.** The third step of the thematic analysis is generating initial themes. This step involves the researcher developing themes from the generated categories (Braun & Clark, 2022). An example of this is if when a participant mentioned comments related to lack of resources, then it was coded into the theme of challenges. The categories generated in the previous phase were also synthesized to form potential themes. I constructed the themes based on the dataset, the research questions, and the overall meaning of the responses. The potential themes were analyzed using the three research questions and theoretical framework to redefine the themes further and to cross analyze the themes (see Figure 2).

## Figure 2

### *Initial Themes and Codes*

Themes	Codes
1. <b>Educator Confidence</b>	General awareness Deep knowledge Formal training
2. <b>Understanding of Dyslexia</b>	Definition of dyslexia Difficulties reading, writing, memory, or processing Inability to read and write
3. <b>Emotional Impact</b>	Low self-esteem Withdrawal Social isolation
4. <b>Identification of Students</b>	Student behavior Distraction Avoidance Breaks Inability to read and write Acting out
5. <b>Multisensory Instructional Approaches</b>	Visual, auditory, and tactile learning methods Audio Books Graphic Organizers
6. <b>Use of Technology</b>	Assistive Technology Software and devices to support reading and writing Text to speech
7. <b>Differentiation and Grouping</b>	Grouping students for targeted support Assemble Small group instruction
8. <b>Positive Reinforcement and Emotional Support</b>	Encouragement Inclusive learning environments Positive feedback
9. <b>Professional Development</b>	Lack of resources

	None provided
10. <b>Challenges</b>	Lack of support Lack of knowledge Lack of resources
11. <b>Self-Training</b>	Seminars Look up information Podcasts

**Phase 4.** After reviewing the initial themes, the initial themes were reviewed and checked to ensure themes aligned with both the coded extracts as well as the full data set (Braun & Clarke, 2022). This meant that each theme was reviewed individually to determine if it fit with the aligned research question and if it was a shared meaning related across the dataset. For example, educator confidence was revisited as it was not shared across all data collection methods. This idea was a component of a more central idea that turned into the understanding of dyslexia. In this phase I reviewed and continued to further develop the themes that became finalized in phase 5.

**Phase 5.** In phase 5, I was able to refine, define, and name the final themes that emerged from the dataset. This phase's goal is to clearly distinguish each theme. I combined concepts and created concise verbiage that provided a specific informative name for each theme based on synthesis of codes and previously identified themes. In this phase, I determined which theme aligned with each research question and prepared written synopsis of each of the final themes.

**Phase 6.** Writing is a necessary phase of the analytical process for thematic analysis (Braun & Clarke, 2022). In this study, I began writing within Phase 3 as I was building codes and relationships among the data set. This included notes to help me familiarize myself with the participants' responses, reflexive journaling throughout the focus group and interviews, as well as notes related to key data points taken from the questionnaire. This chapter is directly related to the final phase of Braun and Clarke's thematic analysis. The following narrative is segmented into how the dataset addresses each research question.

### ***Research Question 1***

RQ1 asked: How do 3<sup>rd</sup> - 6<sup>th</sup> grade general education teachers describe their knowledge of dyslexia characteristics? Responses from three Likert-type questions on the DBI were related to the first research question. Additionally, five interview questions and one question from the Focus Group were used to reply to the first research question. The themes included basic understanding of dyslexia symptoms, emotional and social impact, recognition of dyslexia through student behavior.

**Theme 1: Basic Understanding of Dyslexia and Symptoms.** The first theme that emerged was a general confidence in the understanding of dyslexia and symptoms of dyslexia. General knowledge was referred to and addressed through participants explaining how they would describe their comprehension of dyslexia. During the interviews and in the first question of the focus group, participants shared their understandings, beliefs, experiences, and methods of collaboration to identify and support students with dyslexia. A reoccurring theme across participant interviews and the focus group discussion was a basic understanding of dyslexia as a condition affecting reading, writing, and spelling.

Some participants correctly associated dyslexia with academic challenges, often referencing observable difficulties in decoding and language processing. For instance, Participant I4 explained, “My comprehension of dyslexia is that dyslexia has to do with the inability of a student to read and write. So, when we come in contact with students with dyslexia, we play a vital role in their lives.” Participant I7 described students as “having difficulty in memorizing and spelling”. Participant I2 referred to dyslexia as, “a condition with many difficulties that effects reading and writing.” Additionally, Participant I3 noted, “they tend to have delayed

reading ability. Most times, they are slow learning, and they need more time to pull them through.” Participant I5 echoed the same understanding:

Dyslexia has to do with the inability of my students being able to read and write. And, as I said earlier, you encounter students like that in class, the brilliant ones, the dull ones, the slow learners, and all, has to do with our capacity and capability to make them become better.

Participant I1 described their honest knowledge of dyslexia and how it pertains to students being able to access conventional curriculum:

It could be better, but I think it is stronger than 80% of teachers, and by that, I don’t mean specialists, I mean just teachers. I understand that there is a letterbox. I understand that there are roadmaps to it. I understand that many students who are labeled as can’t read can read. They just read in a different way, and they need methods to make conventional reading accessible to them.

These responses indicate a foundational awareness of tendencies of dyslexia, yet they typically lacked reference to its neurological or phonological components. The focus group echoed similar conclusions, where educators, Participant FG6, discussed dyslexia in terms of “understanding within learning being quite different” and emphasized that conventional instructional strategies often “turn into frustration and stress” for these learners. Other participants responded with understandings surrounding students being “lively, especially in the classroom,” as reported by Participant I8, when asked to describe their knowledge of dyslexia. Additionally, Participant I6 stated,

To the best of my knowledge, you know, it’s something that I’ve seen multiple times.

And you know, it’s with knowledge of that I’ve had of it. It has helped me to, you know,

help students when I see it. When I identify students struggling with it. It's to me it's more or less like sometimes people call it a memory lag. But to me, I see it as something like more of an emotion, something that requires an emotional treatment. So, I do not feel there is a medial conditional attached to it. I just feel like everything is about the emotion. And you have to make the learning environment accessible and friendly for students.

Notably, participants rarely mentioned evidence-based concepts such as phonemic awareness or orthographic processing, suggesting that their understanding was largely shaped by practical classroom experience rather than formal training.

Based on the data collected from the survey, all respondents have knowingly taught students with dyslexia, however, 96.2% of the respondents felt knowledgeable in teaching students with dyslexia. While all participants responded that they have knowingly taught students with dyslexia and feel knowledgeable in teaching students with dyslexia, 88% of the participants responded with “probably true” or “know it is true” when provided the statement that “People with dyslexia have below average intelligence.”

**Table 4**

*Likert-type Questionnaire Responses Related to RQ1*

<b>Responses</b>	<b>People with dyslexia have below average intelligence.</b>		<b>Dyslexia can be managed by diet and / or exercise</b>		<b>Physicians can prescribe medication to help dyslexia.</b>	
	Count	%	Count	%	Count	%
<b>Know it is false</b>	3	12	2	8	6	24
<b>Probably False</b>	0	0	6	24	0	0
<b>Probably True</b>	12	48	7	28	8	32
<b>Know it is True</b>	10	40	10	40	11	44
<b>Total Participants</b>		25		25		25

*Note.* This table provides a visual of the data collected from the survey.

Based on the data collected from the survey, interviews, and focus group, misconceptions and level of knowledge are widespread. Only 12% of participants correctly stated that it is false to say, “people with dyslexia have below average intelligence”, while 88% either believed this to be true or were uncertain, selecting “probably true” or “know it is true”. Similarly, 72% of participants incorrectly believed or leaned toward believing that medication could be prescribed to treat dyslexia.

**Theme 2: Emotional and Social Impact.** Participants across the interviews and focus group discussion consistently recognized the emotional and social toll that dyslexia can take on students in a general education setting. Many participants described students with dyslexia as being anxious, withdrawn, or hesitant to engage in class activities and academic engagements. Participant I4 further explained how academic struggles can lead to a sense of exclusion and diminished self-worth through the following:

It has a very negative impact on the students because it makes them to feel like they are not good enough to be among their peers, and it makes them feel like they shouldn't even be around their classmates. You find them being so quiet and timid. Most of them are actually introverts. So, it's actually something we do everything possible to ensure we can help them out.

Another participant, I5, observed that students with dyslexia often become “quiet and timid” compared to their peers. Additionally, Participant I6 reported:

I've seen a lot of students with dyslexia. Sometimes they tend to withdraw from their friends, and they do not participate in the social activities that the friends are engaging in. So, I just try to encourage and be there for them and just push them through.

Similarly, in the focus group, Participant FG6 explained that when dyslexia is not handled effectively, it often “turns into frustration and stress”. Despite this awareness, few participants described formal strategies for addressing these emotional needs, suggesting a gap between recognition and support. These emotional dynamics may also relate to the misconceptions highlighted in the questionnaire data. For example, the belief held by 88% of the participants that individuals with dyslexia may have lower intelligence could contribute to the lowered expectations in classroom environments.

**Theme 3: Recognition Through Behavior.** The final theme associated with research question 1 was that teachers recognized students with dyslexia through classroom behavior. Due to the lack of formal screening tools or diagnostic protocols, many participants reported identifying students with dyslexia through behavioral cues rather than formalized assessments. Such observable behaviors that were stated in interviews and focus groups included distraction, avoidance, frequent breaks, and emotional outbursts when faced with literacy related tasks. Participant I2 shared an example to explain how a student developed a coping mechanism to escape literacy related stress:

They need a break. This past year I had one student that was a picker, then gosh, golly, she needs to go down to the nurse and get a Band-Aid as a five-minute break. The other ones, you know their belly aches or something. And going to the nurse gives them a reason to get up and move so often.

Participant I10 mentioned how students may begin to exhibit distracting behavior to compensate for their struggles echoing a similar response:

So, some of the telltale signs for me are often what I call them salesman behaviors. They are really, really trying. And then they get very charismatic because they really want you

to like them and you're going to be okay with them, and everything is going to be good. They are great story tellers. If we are ten minutes into something that is language based, they need a break.

Participant I1 also talked about behaviors students exhibit to distract from their frustrations during literacy instruction:

What I have found is the kids who are drawing when the teachers are talking or reading. That is not always because I do that, but sometimes it's a sign. But the kids who cannot read for more than ten minutes at a time without getting completely taxed. Yet they are over fourth grade. I think a lot of times is that these behaviors that people see as problematic is often a dyslexic child subconsciously communicating. And what I have found is that when their dyslexic needs are being met, some of those undesirable behaviors or tendencies are easier for the child to maintain and put in check to balance because they are not overly frustrated. They are not giving up on themselves. And so, I think that's often what they exhibit in the classroom.

In the focus group, similar behaviors were discussed as early signs of frustration and distress. The participants acknowledged that students with dyslexia tendencies often required behavioral support or accommodations to maintain engagement in daily academic activities. However, five of the seven participants in the focus group admitted they felt ill-equipped to confirm their suspicions of identifying students with potential dyslexia tendencies. Additionally, Participant FG2 reported they, "collaborate with parents or guardians to understand and support student needs."

## ***Research Question 2***

RQ 2 asked: How do 3<sup>rd</sup> - 6<sup>th</sup> grade general education teachers describe the strategies they use to support students with dyslexia in their class? Responses from three Likert-type questions on the DBI were related to the second research question. Additionally, three interview questions and two questions from the focus group were used to address to the second research question. The themes included with research question 2 include multisensory instruction, adaptations - accommodations and differentiation, and positive reinforcement and emotional support.

**Theme 1: Multisensory Instruction.** The first theme that emerged related to research question 2 was regarding multisensory instruction. This theme emerged across nearly all interviews with participants having described multisensory education as essential for helping students with dyslexia engage with content. This strategy involves teaching through multiple senses – visual, auditory, tactile, and kinesthetic, as a method to reinforce learning. Participant I3 shared:

So far instructing is more tedious for me because I need to break tasks into smaller units. I use a step-by-step approach. That's more of a strategy I use. Then, I also use visual aids and graphic organizers because they help students retain what they hear and see together. I try to offer extra assignments for the assessments. Then one of the best strategies so far that has been helpful is providing audio records of text.

Another participant, I1, explained that “It’s about layering the input. You can’t just say the word, you have to show it, write it, maybe even act it out.” The focus group participants echoed this approach. Participant FG1 stated, “Multisensory instruction really is a game changer. Once I started using it consistently, especially for spelling and phonics, I saw improvement not only in their scores but in their willingness to try.” Participants mentioned using tools such as

sandpaper letters, color-coded phonics cards, and tracing words in the air or on student desks.

Participant FG6 mentioned:

A lot of actions can be integrated when it comes to learning for this set of students. Like music. Clapping, tapping drumming, all those sort of things, your know because students with dyslexia can improve their phonograph, phonological awareness, and skills.

Through all of this music, especially, that play a whole, anything that has to do with music, be it clapping, be it tapping, be it drumming whatsoever helps them a lot.

As referenced in Table 3, this instructional approach was validated in the Likert-type questionnaire with 92% of the participants either “knew it is true” or probably true” that multisensory instruction is absolutely necessary for students with dyslexia to learn.

**Table 5**

*Likert-type Questionnaire Reponses Related to RQ2*

<b>Responses</b>	<b>Multisensory instruction is absolutely necessary for students with dyslexia to learn.</b>		<b>Giving students with dyslexia accommodations such as extra time on tests, shorter spelling lists, special seating, etc. is unfair to other students.</b>		<b>Students with dyslexia need structured, sequential, direct instruction, in basic skills, and learning strategies.</b>	
	Count	%	Count	%	Count	%
<b>Know it is false</b>	0	0	8	32	1	4
<b>Probably False</b>	2	8	0	0	1	4
<b>Probably True</b>	9	36	12	48	8	32
<b>Know it is True</b>	14	56	5	25	15	60
<b>Total Participants</b>		25		25		25

*Note.* This table provides a visual of the data collected from the survey.

**Theme 2: Adaptations – Accommodations and Differentiation.** Instructional adaptations, specifically accommodations and differentiated instruction, emerged as core strategies that educators use to meet the needs of students with dyslexia. Participants described a wide range of accommodations including extended test time reduced homework load alternative formats for assignments and allowing oral rather than written responses. These adjustments were often aimed at ensuring students with dyslexia could assess the curriculum without being penalized for decoding or processing challenges. As Participant FG6 shared, “I have one student with dyslexia who takes spelling tests orally. That way I’m assessing spelling, not their ability to decode instructions.” Another participant described a specific accommodation to meet the individual needs of their students:

And so that's another big accommodation is you have to consider their emotional and mental health in accommodating copying notes is not useful nor healthy for them, so, I would utilize highlighters, and we would use many different colors, depending on what I wanted them to highlight. So, for example, if you have a question about something, if something doesn't make sense to you, you're going to highlight that in pink if something was really important to you, and you understood it really, really? Well, you're going to highlight it in your favorite color. That's not pink. Pink seemed to be like the red stop. and by allowing them to pick their favorite color, then they their eyes, always went to it, and we utilized a lot of the colors and visuals that they could attend to.

Additionally, across interviews and focus groups, educators described how they adjust instruction, tasks, and assessments to create equitable learning environments. Participant I3 expressed in their interview, “Some students need to sit near the front or work in quieter spaces. It's about minimizing distractions so they can focus.” Other participants described providing

preferential seating and frequent check-ins. Participant FG2 stated, “I use positive reinforcement. That’s to help foster a good mindset and celebrate strength. I use flexible seating. I offer them alternative seating options for their comfort.” Participant I1 stated, “I check in with my students, so they are not overly frustrated.”

In the focus group, participants discussed the value of accommodations but acknowledge tension around perceptions of fairness. Participant FG6 shared, “Sometimes other students ask why one kid gets a shorter assignment, and I have to explain it’s about giving everyone what they need.” This feeling towards accommodations was reflected in the questionnaire results in Table 3 as 32% of participants either believed or were unsure whether accommodations were unfair to other students. Participant I9 stated, “Everyone gets what they need to be successful. It’s not about making it easier; it’s about making it possible.” Nonetheless, educators generally supported accommodations as an essential part of differentiated instruction, not preferential treatment. Some participants also noted challenges in consistency of accommodations. For example, participant I4 noted, “Not all schools have clear policies about accommodations. I do what I can, but I wish it were more structured.” Others mentioned that they only learned about accommodations through collaboration with special education faculty or through trial-and-error. Additionally, participant I4 noted, “I wish we had more resources to make it sustainable.”

Alongside accommodations, participants discussed the use of differentiation and flexible grouping to support students’ academic and behavioral needs. Small group instruction was cited as especially beneficial, allowing educators to slow down instruction, repeat concepts, and use specialized materials. Participant I3 explained, “I assemble them together for reading practice using audio and visuals. I can give them more support than I could in a whole group.” Participant I5 described how they support students in a natural environment:

You also have an objective of what you want them to know about. So, you have the object because since they can't actually read and write a personal explanation with those objects and pictures and photographs will help them. Then if it has to do with the natural resources, you can take them out to that. You can take them to show, maybe about plants or animals. Take them to zoos. You talk to them and then they actually understand that better than actually mounting pressure on them to read and write at an instant.

Surprisingly, after a few days or weeks, they can actually adapt with because they get to understand the pictures and the photographs much better than asking them to write.

Teachers used data and observations to create groups based on students' progress and specific learning needs, ensuring that struggling reading received more direct instruction. The focus group participants also emphasized that grouping, when done thoughtfully, reduced stigma and allowed students with dyslexia to receive needed support without being singled out. Additional accommodations noted during the focus group included assistive technology. Participant FG6 highlighted the use of "text to speech... to help them learn in a better way." These strategies and accommodations demonstrate a shared belief that instructional flexibility is essential to equitable teaching and must be supported with training, resources, and time.

**Theme 3: Positive Reinforcement and Emotional Support.** Many educators identified the importance of emotional and psychological support for students with dyslexia in addition to academic interventions. Participants emphasized that students with dyslexia tendencies often internalize failure and feelings of inadequacy in comparison to their typical peers. Participant I6 reported observing students becoming increasingly "withdrawn" or "hesitant to participate in class due to repeated struggles with reading or writing". As a result, positive reinforcement and

encouragement, and intentional relationship building were seen as critical to restoring students' confidence and willingness to engage. Participant I6 emphasized student support through:

They see me as somebody they can trust somebody to share their errors and mistakes with. I've not judged them, so I try to be as friendly with them as possible, and I'll try to make the teaching enjoyable. I bring it to their level. I teach it to their strength. I tailor the teaching to the strength of different students. They are in different phases of learning, especially in those classes. They are more like, you know, a step behind. I try to like, you know. I do not rush them.

Participant I1 noted, "Kids with dyslexia have been told they're wrong so many times. I focus on catching what they do right." This emphasis on affirming students' strengths echoed throughout the interviews. Educators described using verbal praise and individual encouragement to help students rebuild self-worth. Others noted the importance of offering students opportunities to excel in non-academic areas to balance out their academic difficulties. Participant FG5 noted, "Even if they struggle in reading, I try to spotlight their creativity or kindness. They need to feel capable." This approach was often embedded in daily routines and classroom culture, with teachers consciously creating moments of success for students who had grown accustomed to academic discouragement.

In addition to individual praise and encouraging non-academic areas of student growth, some educators created peer-support systems or reading partnerships to foster inclusion within their general education classroom to support students with dyslexia or dyslexia tendencies. Teachers noted that having reading buddies, paired discussions, or small group activities gave students with dyslexia a way to participate without feeling isolated or exposed. This collaborative structure also helped to normalize different learning paces and strengths.

Participant FG6 stated, “We do partner reading where I match kids based on strengths. It helps build community and makes struggling readers feel less alone.” These practices contributed to a positive classroom climate where academic support and emotional safety were tightly linked.

Despite their efforts, many participants acknowledged they felt underprepared to handle the emotional side of learning disabilities. Participant I3 stated, “I can see the emotional weight dyslexia puts on them, but I’ve never been trained to deal with it. I just do my best to encourage them.” This highlights a broader need for integrating social-emotional learning into dyslexia-focused professional development, as academic success is closely related to emotional safety and motivation. Participants expressed a desire for professional development that integrates social-emotional learning strategies into dyslexia-specific training, recognizing that academic success is closely tied to emotional resilience and motivation.

### ***Research Question 3***

RQ 3 asked: How do 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers describe how they overcome training gaps to support students with dyslexia? Responses from three Likert-type questions on the DBI were related to the third research question. Additionally, three interview questions and five questions from the Focus Group were used to address to the third research question. The themes included with research question 3 include self-directed learning and independent professional development, collaboration with specialists, and resource limitations.

**Theme 1: Self-directed Learning and Independent Professional Development.** A significant number of educators described relying on self-initiated learning and independent professional development to fill the gaps left by insufficient formal training. Many educators reported that their credentialing programs did not provide in-depth instruction on dyslexia,

prompting them to seek additional training to fill knowledge gaps through books, workshops, and graduate programs. Participant I1 shared:

So, I started and I'm about halfway through my master's right now in literacy leadership. And I just got my Wilson Certification and teaching dyslexic students has become my passion. Most of what I know about dyslexia, I've learned outside of my day job.

Participant I9 echoed similar experiences:

I'm busy. I'm very, very quick. And then I've been going to various kinds of seminars and read articles just for this. Just to really know how to endure and then take good care about them. I also try to make them feel that there is nothing that life doesn't know. I do whatever I can to figure out how to help these students.

These responses demonstrate that, in the absence of district-or school-supported training, teachers are taking ownership of their learning and investing personal time and resources into improving their practice.

This theme reflects a broader systemic issue of professional development on dyslexia is not only inconsistent, but often entirely absent. Participant I10 stated:

I have nothing on professional development because we just don't. And it's, I think the parents would be absolutely livid to hear that they go to a school where half of the teachers don't even have teaching credentials, but many don't even have a degree in teaching.

For many, the lack of structured, dyslexia-focused training left them feeling unprepared during critical teaching moments. Participant I8 described environments where support was not guaranteed and where learning happened informally or "on the fly." This reliance on self-directed learning is reflected in the questionnaire data in Table 4. The questionnaire data in Table

4 support this picture. A majority, 60%, of participants selected that they believed that “after just 3-5 hours of instruction, most educators can competently work with students with dyslexia.”

While this might indicate self-confidence, it may also reflect a misconception of the complexity of dyslexia. Interview data complicated this view, with many teachers expressing doubt in their foundational knowledge of dyslexia and emphasizing the incomplete nature of their preparation.

Participant 14 reflected:

It’s trial and error. You just try something, and if it doesn’t work, you go back and try something else. Some seminars that can actually help but then I rely more on personal development. I sort it all out by myself. That’s why I call it personal development. I take some courses. Sometimes I take the courses virtually so because you know, I might not really have the time to leave the class to go to a physical course. So, I do that virtually to enable me to perform exclusively with the students.

This statement captures the reactive and intuitive way educators adapt their instruction without formal training, as they have had to rely on improvisation.

**Table 6**

*Likert-type Questionnaire Responses Related to RQ3*

<b>Responses</b>	<b>After three to five hours of instruction, most educators can competently work with students with dyslexia.</b>		<b>Most special education teachers receive intensive training to work with students with dyslexia.</b>		<b>Most regular education teacher receive intensive training to work with students with dyslexia.</b>	
	Count	%	Count	%	Count	%
<b>Know it is false</b>	3	12	3	12	4	16
<b>Probably False</b>	1	4	1	4	1	4
<b>Probably True</b>	6	24	9	36	8	32
<b>Know it is True</b>	15	60	12	48	12	48

<b>Total Participants</b>	25	25	25
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*Note.* This table provides a visual of the data collected from the survey.

Closely linked to self-learning was the practice of experiential, on-the-job learning, which many participants described as central to their understanding of dyslexia. This method is the idea that teachers continually improve their instructional practices by working directly with students over time. Several participants emphasized that their knowledge of dyslexia developed through classroom observation, informal assessments, and hands-on adjustments rather than formal training. Participant I3 noted, “I started to notice patterns, who was flipping letters, who struggled to read aloud, and I began adjusting based on what I saw.”

This adaptive, student driven approach was echoed in the focus group. Participant FG4 shared, “We don’t always have access to formal training but over time you learn what works and what doesn’t. You just wish there was more guidance at the beginning.” These reflections point to a pattern of learning through doing, often motivated by necessity rather than design. Educators developed confidence and strategies throughout their teaching career, but their paths were inconsistent, heavily dependent on individual initiative and access to informal learning opportunities.

Despite these limitations, participants expressed a deep sense of commitment to improving outcomes for their students with dyslexia. Teachers actively sought out strategies, collaborated with peers, and evaluated effectiveness of their methods. Yet the consensus was clear, without systematic professional development and early-career training focused on dyslexia, general education teachers are left to, as stated by Participant FG5, “patch together” their expertise from varied and often insufficient sources. This pattern furthers the need for

embedded, ongoing, and dyslexia-specific professional learning as a cornerstone of effective inclusive education.

**Theme 2: Collaboration with Specialists.** Another key theme that emerged from the interviews, focus group, that was validated by the questionnaire was that educators use collaboration with specialists and colleagues to overcome training gaps in dyslexia instruction. General education teachers frequently reported seeking support from special education teachers, reading specialists, speech-language pathologists, and school psychologists to help them better understand and assist students with dyslexia. This form of collaboration often served as a practical substitute for formal training, providing teachers with the tools, strategies, and reassurance they needed to provide support to students with dyslexia. This form of collaboration often served as a practical substitute for formal training, providing teachers with tools, strategies, and reassurance they needed. These collaborative relationships were described as essential in navigating instructional challenges, especially in environments where teachers lacked structured dyslexia training.

In the focus group, multiple participants emphasized the value of learning from colleagues who had more specific training or experience with dyslexia. Participant FG1 stated, “Collaboration is crucial in supporting students with dyslexia. We work with special education teachers, psychologists, and speech therapists. They help develop the interventions, individualized education programs or accommodations, and show us how to apply them in the classroom.” Participant FG 6 stated, “They’re the ones who usually know what works best. I’ve learned a lot just by asking questions and trying out what they suggest.” Participants in the focus group discussed seeking guidance from those with more targeted training or using team meetings for the development of individualized support strategies and accommodations. Participant FG1

stated, “I don’t always have the answers, so I lean on our special education team.” These educators described their reliance on team-based approaches, informal mentorship, and observation of specialist-led interventions as vital to improving their instructional confidence and effectiveness.

Many teachers also highlighted the role of team meeting and consultation time in supporting collaborative efforts. Participant I9 explained, “We talk as a team when we see red flags in student’s performance. I usually check with our reading specialist before trying a new intervention.” These planning opportunities, whether formal or informal, gave teachers space to discuss specific student needs, develop accommodation plans, and adapt instructional methods. Participant I1 related their experience with accommodations and interventionist support to student needs:

They did have intervention where they were pulled out. The intervention teacher and I work extremely close together, and we worked it so that when she was pulling them out. It did not impact recess time. snack time, any kind of full class instruction. and I worked my time around her. I think that's about it. Appreciated. Well, they're usually the kids that need the wiggle time more than anybody else, because they need to discharge energy.

Collaboration was seen not only as helpful but often necessary, due to the complex learning profiles and needs of students with dyslexia tendencies and the lack of structured protocols available in many schools.

However, several participants expressed concerns about inconsistent access to specialists, particularly in under-resourced or smaller schools. Participant I10 shared, “We don’t have a reading coach or interventionist – just me. I do my best, but I don’t have anyone to really consult with about dyslexia.” Teachers explained that the availability of specialists often depended on

the school's staffing structure or funding, and that access to support was not guaranteed for all students. For example, Participant FG3 noted, "Sometimes you have to chase down the help you need. There's no system – it depends on who's available and whether they have time."

In addition to access challenges, participants pointed to inconsistent training across educator rolls. While 48% of questionnaire participants agreed that special education teachers typically receive intensive training on dyslexia, only 48% believed that was also true for general education teachers, highlighting a gap in preparation. One participant I1 stated, "Honestly, many of the regular teachers in my school don't even have certifications," drawing attention to the broader issue of uneven qualifications and professional readiness. Teachers expressed that while collaboration could be powerful, it was not a substitute for formal, universal training. The overreliance on individual initiative and informal partnerships underscored by the systemic need for consistent, accessible, and district-supported collaboration structures and policies.

An additional group emerged in terms of specialists, where participants noted collaborating with parents and guardians to best support students with dyslexia tendencies. For example, Participant FG2 reported, "I will collaborate with parents and guardians to understand student needs, share strategies, and reinforcement techniques." Interview participants echoed similar collaborative efforts. Participant I4 mentioned, "communication with a parent can help identify what they (their child) all need."

In summary, while collaboration with specialists clearly enhances general education teachers' ability to support students with dyslexia, it is often informal, inconsistent, and dependent on individual school conditions. The reliance on such collaboration highlights the value of collective expertise in filling instructional gaps left by teacher preparation programs. However, without systematized structures for interdisciplinary teamwork, many teachers are left

to seek out support in fragmented and reactive ways. Institutionalizing collaboration through regular planning time, staffing support, and shared training initiatives would promote more equitable and effective dyslexia support. It would also emphasize the importance of building formalized structures for inter-personal collaboration to ensure consistency and equitable support for students with dyslexia across diverse educational settings.

**Theme 3: Resource Limitations.** A reoccurring and significant concern expressed by the general education teacher participants of the interviews and focus group was the lack of adequate resources to support students with dyslexia. This lack of adequate resources included both material and instructional resources to effectively support students with dyslexia. This theme reflected not only tangible gaps, such as access to screening tools or evidence-based interventions, but also systemic barriers, such as limited administrative support and insufficient funding for training.

Teachers consistently described feeling underprepared to support or identify students with dyslexia due to minimal district or institutional support and training. While many participants stated a strong personal commitment to supporting students with academic challenges, they stated they often rely on self-directed learning or informal learning experiences to address student needs. Participant I3 stated, “The resources I have are not ones provided by the district... I got them myself, from online courses and books I bought.” Participant I3 goes on to state, “We don’t have any district-approved curriculum for dyslexia, so I use whatever I can find. It’s not ideal, but it’s all I have.” Participant I9 echoed this frustration stating, “I’ve been going to seminars just for this, but it’s all out of pocket. The school doesn’t reimburse, and honestly, they don’t even ask what we need.” This highlights a recurring theme where the

schools are not equipping educators with the tools, materials, resources, and professional development to effectively identify and assist students with dyslexia.

Another participant, I1, expressed frustration with the absence of instructional support system, stating, “It’s through experience and trial-and error that I’ve learned how to help these students.” For many participants, support for students with dyslexia depends heavily on individual initiative, such as attending external workshops, engaging in online research, or pursuing advanced certifications. Participant I1 stated, “I’m about halfway through my master’s right now in literacy leadership. I just got my Wilson certification and teaching dyslexic students has become my passion.”

The challenge was also not limited to instructional materials. Many teachers described broader institutional shortcomings. The interviews also revealed that these limitations were not exclusive to public education. In private school contexts, teachers encountered similar challenges, with the added complication stemming from lessened credentialing requirements. Participant I10 described, “Many of the teachers at my school do not have teaching certifications and they struggle to recognize tendencies of dyslexia. “Additionally, Participant I10 went further to express that,” identifying and supporting students with dyslexia becomes impossible without help.” In this case, the lack of properly credentialed colleagues further contributed to a fragmented support system, placing additional pressure on individual teachers to compensate for systemic gaps. Without required professional development or standardized procedures, instructional quality and consistency varied widely, leaving some students without the support they needed.

The focus group participants provided further evidence of the widespread nature of this challenge. Participant FG7 reported, “Sometimes we identify students too late because we don’t

have trained staff or a set of clear steps to follow. It's just what we notice or what a parent might report." Participant FG4 added, "We do what we can with what we know. But there's no formal program or support from the district specifically for dyslexia." Additionally, Participant I4 shared some of their day-to-day implications of the limitations, "I try to group my struggling readers and give them more time, but with 25 students and no aide, it's almost impossible. I'm stretched so thin." Participant I9 stated, "You feel like you're letting kids down...not because you don't care, but because you're not given the tools to do it right." This provides more insight that, even when teachers are observant and proactive, the lack of a formal identification process leads to delayed or inconsistent support.

Compounding these issues is the lack of in-school specialists and screening tools. While some interview and focus group participants mentioned access to speech pathologists or special education faculty, this support was inconsistent and often depended on the advocacy by the general education teacher. Focus group participants emphasized the importance of collaboration but admitted that without proper training or guidance, these partnerships were reactive rather than proactive. Participant FG1 explained, "We work with specialists when we can, but often, I don't even know what to ask for."

### **Evaluation of the Findings**

The findings of this study were used to enhance the understanding of how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Educators employ a variety of instructional strategies to a multitude of learning ability levels. According to the NAEP (2022), only 33% of all fourth-grade students in the United States meet proficiency level or above in reading. Reading proficiency can be directly impacted by dyslexia (Al Otaiba et al.,

2018; Miciak et al., 2022). Dyslexia has been reported in 80-90 % of individuals identified with a learning disability, and it represents approximately 20% of the population worldwide (Castillo & Gilger, 2018; Yale, 2022). Previous research has shown that educators lacked effective training in understanding dyslexia in addition to knowledge on supporting students with dyslexia (Gonzalez, 2021; Schraeder et al., 2021).

Bandura's self-efficacy theory is the theoretical framework that guided this research study. There are four key sources of self-efficacy: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal (Bandura, 1997). The results of this study address the research questions to enhance the understanding of how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. When Bandura's self-efficacy theory is applied to the nine themes that emerged from the data, it is clear how educators' perception of self-efficacy influences their behaviors, decisions, and attitudes toward instructional adaptations and professional learning. Three research questions directed this study, resulting in nine themes.

The aim of the research study was to examine how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. The study focused on understanding how teachers address and overcome existing gaps in training related to dyslexia instruction. As more students with dyslexia tendencies are placed in general education classrooms, it is vital to assess how well-equipped educators are to meet their unique learning needs. This research aimed to contribute to the growing body of knowledge surrounding teacher preparedness and inclusive education.

To guide the research study, three primary research questions were developed. The first question focused specifically how teachers described their knowledge of dyslexia characteristics.

This involved examining teachers' awareness of common signs and symptoms of dyslexia, such as difficulties with phonological processing, decoding, spelling, and reading fluency.

Understanding how well teachers recognize these characteristics can inform future professional development and teacher preparation programs.

The second research question explored how teachers describe the instructional strategies they use to support students with dyslexia in their classroom. This included both formal interventions and informal techniques that educators implement to accommodate students' individual needs within the classroom. Strategies discussed included multisensory instruction, the use of assistive technology, modifications to assignments or assessments, and flexible timing for assignments or assessments. By identifying reported effective practices, the study aimed to highlight what is currently working in inclusive classrooms and where further support may be needed.

The third research question examined how teachers overcome training gaps to effectively support students with dyslexia. Many general education teachers report receiving limited or no formal training in dyslexia-specific instruction, making it essential to explore how they compensate for this lack of preparation. (Gonzalez, 2021; Schraeder et al. 2021.) This could include seeking out professional development opportunities, collaborating with specialists, or engaging in self-directed learning. The findings from this question can help inform future policies and training programs to better prepare teachers for working with students who have dyslexia tendencies.

The first research question, "How do 3<sup>rd</sup> - 6<sup>th</sup> grade general education teachers describe their knowledge of dyslexia characteristics?" resulted in three emerging themes. The questionnaire, interviews, and focus group data generated the first theme of basic understanding

of dyslexia symptoms. It was evident from the data that there was a varied depth of knowledge surrounding dyslexia tendencies, what dyslexia is, and how it effects students in all areas of life. Consistent with research, these varied levels of understanding as well as the vast number of misconceptions regarding characteristics of dyslexia, educator misconceptions can directly impede students' academic growth through lack of instructional effectiveness and wiliness to intervene (Berent & Platt, 2021; Mullikin et al. 2021; Ramil et al., 2019).

The next theme that emerged was the emotional and social impact of dyslexia on students. Teachers who observed their students' struggles and frustrations often responded with compassion and adaptability, thereby reinforcing their belief in their capacity to make a difference and increasing their confidence in their own efficacy. Responses from participants aligned with the literature that students with dyslexia could result in low academic achievement and feelings of anxiety and depression, and even academic drop out (Bazen et al., 2022; Dahl-Leonard et al., 2023; Thwala et al, 2020). This further supports the concept that early identification and effective instructional strategies demonstrate an increase in the academic and emotional well-being of persons with or at risk for dyslexia (Dahl-Leonard et al., 2022).

The final theme that emerged from the first research question was recognition through behavior. The ability to identify dyslexia tendencies through observable behaviors is closely linked to vicarious experience, one of Bandura's efficacy sources (Bandura, 1997). Educators often learn to recognize signs of dyslexia by observing patters over time. Most participants agreed that they were able to observe tendencies and behavioral traits in students with dyslexia.

The second research question, "How do 3<sup>rd</sup> - 6<sup>th</sup> grade general education teachers describe the strategies they use to support students with dyslexia in their class?" The first theme that emerged from this research question was the use of multisensory instruction. Teachers'

widespread use of multisensory instruction reflects strong self-efficacy derived from mastery experiences (Bandura, 1997). Many participants reported success stories, including students improving in reading fluency and engagement when multiple senses were actively engaged in the lesson. These outcomes reinforced participants' beliefs that they could positively impact learning when the appropriate tools, resources, and instructional strategies were implemented in their general education classroom. Previous research recognize that educators lack the knowledge and instructional strategies to support students with dyslexia (Hindman et al., 2020; Gonzalez, 2021; Hindman et al., 2020; Mullikin et al., 2021). This theme reveals a proactive mindset, where even in the absence of formal training, educators adapted and experimented with methods that produced visible progress, which in turn deepened their instructional confidence.

The next theme that emerged is adaptations-accommodations and differentiation. When educators provide students with dyslexia extra time, modified assignments, or varied instructional methods, they were more likely to believe they were capable of meeting diverse learning needs (Shaywitz & Shaywitz, 2020; Shillingford et al., 2021). However, some cases arose where concerns about fairness or inadequate training limited these practices, pointing to fluctuating self-efficacy influenced by both external expectations and internal uncertainty.

The final theme that emerged from the second research question was positive reinforcement and emotional support. Educators who fostered emotionally safe environments observed improved student participation and morale, which in turn enhanced their own belief in the value of supportive teaching. Positive interactions with students seemed to validate their roles as effective educators, further reinforcing their instructional self-efficacy.

The third research question, "How do 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers describe how they overcome training gaps to support students with dyslexia?" The first overall theme that

was generated was self-directed learning and independent professional development. Previous research reports the relevance of self-efficacy in determining the success of instructional practices (Gibbs et al., 2020; Ozokcu, 2017; Tortereli et al. 2021). Educators who pursued certifications in reading intervention or dyslexia-specific programs reported greater confidence in their instructional practices. These educators' investment in learning reflects a strong belief that skill development leads to meaningful change, despite gaps in training. Literature This is consistent research in that educators' lack of effective pedagogical reading training can negatively impact students' achievement (Hindman et al., 2020).

The next theme that emerged was collaboration with specialists. The responses from the focus group and interviews described educators as feeling more competent after observing specialist interventions or receiving guidance on instructional techniques. These collaborative environments reinforced a collective sense of self-efficacy, reducing the responsibility on individual educators and increasing the likelihood of sustained support for students with dyslexia. Previous research addressed the potential for Tier 2 support for educator professional development and coaching to support the implementation of explicit instruction, intervention, and data-driven instructional decision-making, however, this was described as institution based where many participants expressed the lack of resources and specialists (Fien et al., 2021).

The final theme that emerged from the third research question was resource limitations. While most participants expressed commitment and discussed stories of resilience, resource limitations often strained their ability to provide the necessary support. Participants responses revealed that most lack resources to identify students with dyslexia as well as instructional procedures and practices to support students already identified with dyslexia. Participants

revealed that despite inadequate resources, relying on collaboration and self-learning was necessary to overcome limitations.

Evaluating the nine themes through Bandura's self-efficacy theory highlights the relationship between belief and behavior in the context of support students with dyslexia. Educators' willingness to adapt instruction, seek training, and support the emotional well-being of students with dyslexia originates not just from obligation but also from their belief in their capacity to succeed. Where self-efficacy was high, teachers responded decisively and creatively to provide support and further their understanding of dyslexia and effective instructional strategies to support students with dyslexia. Where self-efficacy was undermined, by lack of training, gaps in knowledge, or lack of resources, support for students with dyslexia was less consistent. Enhancing educator self-efficacy through meaningful professional development, collaborative environments, and access to resources is not only beneficial, but it is also essential for the effective support of students with dyslexia.

### **Summary**

This qualitative case study was designed to explore how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Educators who currently work with grades 3<sup>rd</sup> – 6<sup>th</sup> grade in a general education setting were invited to participate in a questionnaire, semi-structured interview, or focus group. The data collected from these sources were analyzed to address the three guiding research questions, which focused on teachers' knowledge of dyslexia characteristics, the strategies they use to support students with dyslexia, and how they overcome gaps in formal training.

The findings revealed nine major themes: (a) Basic understanding of dyslexia symptoms; (b) Emotional and social impact; (c) Recognition through behavior; (d) Multisensory instruction. (e) Adaptations-accommodations and differentiation; (f) Positive reinforcement and emotional support; (g) Self-directed learning and independent professional development; (h) Collaboration with specialists; (i) Resource limitation. These themes reflect a multifaceted perspective on how teachers navigate instructional challenges related to dyslexia, often without the benefit of formal professional training or institutional support.

Participants consistently expressed a strong commitment to supporting students with dyslexia, despite their reported lack of confidence or preparation. Many participants revealed personal experiences that demonstrated resourcefulness, such as developing their own instructional strategies through trial – and-error, relying on informal collaboration with colleagues, or seeking additional training through self-directed learning opportunities. Several participants described learning about dyslexia only after encountering it in the classroom, highlighting a disconnect between teacher credentialing programs and the practical realities of diverse classroom needs. Participant responses aligned with existing research that describes educators often feel underprepared to identify and respond to the specific needs of students with dyslexia.

The study also reinforced the significance of emotional and psychological factors in both teaching and learning. Participants reported that students with dyslexia frequently experience frustration, lowered self-esteem, and feelings of isolation, which in turn can affect their academic progress. To address these emotional barriers, many participants embraced positive reinforcement strategies and made intentional efforts to build supportive classroom environments. The participants expressed, however, that they lacked adequate professional

development and training in supporting the social-emotional obstacles related to learning disabilities.

In exploring instructional strategies, participants frequently referenced the importance of multisensory instruction and differentiated learning approaches. Participants described using a variety of tools, such as visual aids, hands-on activities, and small-group explicit instruction to support students' diverse academic needs. However, access to these specified resources varied widely between schools, and many participants noted that they relied on personal initiative or informal sharing of materials and ideas to implement such strategies effectively.

Collaboration with specialists, such as special education teachers and interventionists, was an additional recurring theme. Participants noted the value in these professional partnerships but emphasized that they were often inconsistent or dependent on resources available to the school site or district. The findings emphasize the importance of a more formalized structure that supports interdisciplinary collaboration and shared responsibility for addressing students' needs.

The participants shared similar experiences that correlated to the existing literature on educator knowledge of instructional strategies and gaps in training to support students with dyslexia. The participants' experiences captured in this study reflect both the challenges and possibilities of supporting students with dyslexia in general education classrooms. Participants' insights offer a perspective on the persistence of training gaps and the strategies educators use to bridge them, reinforcing the need for structured dyslexia professional development, consistent differentiation and multisensory supports, and interdisciplinary collaborative support models. The final chapter of this manuscript will address the broader implications of these findings, offer recommendations for practice, and present conclusions grounded in both theory and participant experience.

## Chapter 5: Implications, Recommendations, and Conclusions

The problem addressed by this study was that educators lack the knowledge and instructional strategies to support students with dyslexia. Teachers' lack of effective pedagogical reading training can negatively impact students' achievement (Berent & Platt, 2021; Hindman et al., 2020). The purpose of this qualitative descriptive case study was to explore how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. The research design used in this study was qualitative descriptive case study. Forty-two 3<sup>rd</sup> – 6<sup>th</sup> grade teachers who teach in general education classrooms participated in the study. A questionnaire was administered to 25 participants to gain a deeper understanding of teachers' knowledge of dyslexia as well as how they describe their knowledge of instructional strategies to support students with dyslexia. Semi-structured interviews were conducted to gather data from 10 different participants and seven participants were in the focus group. The participants of the focus group did not participate in the questionnaires or semi-structured interviews.

Thematic analysis was used to review the data collected from the interviews and focus groups using Braun and Clarke's (2022) reflexive approach to connect common themes aligned with the three research questions. Nine themes emerged from the results of the data: (a) Basic understanding of dyslexia symptoms. (b) Emotional and social impact. (c) Recognition through behavior. (d) Multisensory instruction. (e) Adaptations-accommodations and differentiation. (f) Positive reinforcement and emotional support. (g) Self-directed learning and independent professional development. (h) Collaboration with specialists. (i) Resource limitation.

The study had several limitations. This proposed research study has potential limitations. The first limitation the study only includes 3<sup>rd</sup> – 6<sup>th</sup> general education teacher participants.

Another possible limitation is that the data collected from questionnaires, semi-structured interviews, and focus groups only includes general education classroom teachers. The proposed study does not include insight from intervention teachers, special education teachers, paraprofessionals that provide instructional support, and other specialists within the classroom settings that provide instructional support for students with dyslexia. The trustworthiness and credibility of results are reported with minimal bias to ensure results are reported get as close to an objective representation of the participants' experience as possible (Stahl & King, 2020). I took special consideration to remove any bias through the study as well as ensured that the data collected accurately represented the authentic perspectives of the individual participants in the study.

Chapter 5 began with a discussion of the implications of the study. Next, recommendations for practice and future research will be addressed and presented. Concluding remarks based on the study's findings are provided at the end of the chapter.

### **Implications**

Implications reflect the responses of the participants and the findings of the study as it directly related to the theoretical framework and the research questions for this study. This research study provided comprehensive information on how general education teachers in describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Previous research conducted by Torterrelli et al. (2021) primarily focused on pre-service teachers' experiences in training as well as educators' professional development, however additional research has shown that educators lacked effective training in understanding dyslexia in addition to knowledge supporting students with dyslexia (Gonzalez, 2021; Hindman et al., 2020; Mullikin et al., 2021). The aim of conducting this qualitative case study was to

explore how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia.

### ***Research Question 1***

RQ1: How do 3<sup>rd</sup>- 6<sup>th</sup> grade general education teachers describe their knowledge of dyslexia characteristics? The data demonstrated that general educators have a basic understanding of dyslexia and symptoms as related to behaviors exhibited within the classroom as well as the emotional and social impacts of dyslexia. Though extensive research exists to provide an understanding of common characteristics of dyslexia, there are predominant misconceptions among educators. Participants in the study reported a basic understanding of dyslexia and tendencies of dyslexia as well as common misconceptions surrounding dyslexia as reported in previous research relating to conceptual knowledge of the topic (Ramil et al., 2019; White et al., 2020).

**Theme 1: Basic Understanding of Dyslexia and Symptoms.** Participants expressed a basic understanding of dyslexia and tendencies of dyslexia exhibited by students in general education classrooms. For example, participants referenced dyslexia as “the inability of a student to read and write.” Others noted that the ability to read and write was often delayed.

The responses from the interviews and focus group were based on foundational awareness of tendencies of dyslexia. There was no reference to neurological or phonological components of dyslexia. Participants from the survey emphasized that “people with dyslexia have below average intelligence.” In addition, participants from the survey shared common misconceptions surrounding dyslexia that was consistent with prior research to include that dyslexia can be managed by diet and exercise as well as physicians can prescribe medication to

help dyslexia. Prior research references similar common misconceptions about dyslexia including letter and word reversals and that students with dyslexia will never meet proficiency in reading (Kumas et al., 2021; Mullikin et al., 2021; Schraeder et al., 2021; White et al., 2020).

**Theme 2: Emotional and Social Impact.** Categories and themes that emerged from data showed that educators can identify various emotional and social impacts of dyslexia. Studies have shown that dyslexia has a profound long-term impact on academic progress and generalized well-being if not identified (Shaywitz & Shaywitz, 2020). In alignment with previous studies, many participants discussed the negative impacts of dyslexia and dyslexia tendencies observed within their classrooms. Participants described students with dyslexia as being anxious, withdrawn, or hesitant to participate in academic activities. In a previous study by Bazen et al. (2022), students receiving negative consequences directly related to their dyslexia tendencies could result in low academic achievement or feelings of depression and anxiety. Appropriate identification and academic interventions can provide support for struggling students and without the identification or interventions, student success can be impeded. The findings support that educators believed that identifying and supporting students who are observed as displaying anxiety, withdrawn, taking frequent breaks, and hesitant to participate in academic activities require additional support in the classroom and if needed, support in receiving the appropriate identification and academic interventions.

**Theme 3: Recognition Through Behavior.** Previous research by Catts & Hogan (2020) found that students with undiagnosed dyslexia may go on to experience behavioral problems, delinquency, and/or incarceration. Participants in this study stated that they used identifying students with dyslexia through behavioral cues, such as avoidance, distraction, and emotional outbursts. The participants stated that behavior cues are utilized as a method of identification

rather than formalized assessments due to lack of formal screening tools or diagnostic protocols. Participants not only acknowledged that students with dyslexia tendencies often required behavioral support or accommodations to maintain engagement in daily academic activities but also to promote academic success.

### ***Research Question 2***

RQ 2: How do 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers describe the strategies they use to support students with dyslexia in their class? Data collected in this study revealed that teachers identified the need for multisensory instruction, adaptations, accommodations and differentiation, as well as positive reinforcement and emotional support for students with dyslexia. Accommodations are frequently utilized to support students with dyslexia (Shaywitz & Shaywitz, 2020; Shillingford et al., 2021). Previous research done on the most used and effective accommodations for students with dyslexia resulted in higher participation and equal opportunities for students with dyslexia (Raymond et al., 2020; Shaywitz & Shaywitz, 2020; Shillingford et al., 2021; Tops et al., 2022)

**Theme 1: Multisensory Instruction.** Participants in this study across nearly all interviews echoed multisensory instruction as essential for support students with dyslexia to engage with content being taught in general education classrooms. Participants described the use of audio records of text, tactile tools to engage students in literacy practices, as well as visual aids to support students' memory retention. Previous research also found that multimodal and multisensory instruction approaches grow reading ability (Al Otaiba et al., 2018; Hall et al., 2022; Shaywitz, et al., 2021; Schraeder et al., 2021). The multisensory approach was also echoed with the participants of the survey as the majority responded with multisensory instruction is

necessary for students to learn as well as students with dyslexia need structured, sequential, direct instruction, in basic skills and learning strategies.

**Theme 2: Adaptations – Accommodations and Differentiation.** A previous study conducted by Tops et al. (2022) on the most effective accommodations in students with dyslexia include additional time on assessments and extended due dates for assignments and projects were the most used and effective accommodations for students with dyslexia. Participants in this study stated that they use a wide range of accommodations and differentiated instructional practices to support the needs of students with dyslexia. As a result of the accommodations put in place by the participants, they reported that all students received the appropriate accommodations and support needed to be successful, emphasizing the understanding that the accommodations and differentiations are not to make the learning experience easier for the student but to make the learning experience possible for the student needing support. Participants also expressed their use of positive reinforcement as a manner to foster growth mindsets and celebrate students' individual strengths to promote academic growth.

**Theme 3: Positive Reinforcement and Emotional Support.** Participants in this study stressed the importance of emotional and psychological support for students with dyslexia in addition to academic interventions. A previous study revealed that educators in public schools used negative comments towards students with dyslexia and refused to support students with dyslexia tendencies and provide accommodations or individualized instruction (Leseyane et al., 2018). In a previous study conducted by Bazen et al. (2022), perceived negative consequences that university students experienced directly related to their dyslexia resulted in low academic achievement or feelings of anxiety and depression. Participants emphasized that students with dyslexia often internalize their personal failures and feelings of inadequacy when compared to

their typical peers. For these reasons, positive reinforcement, and building intentional relationships with students were viewed as essential to restoring students' confidence and willingness to participate in academic activities.

### ***Research Question 3***

RQ 3: How do 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers describe how they overcome training gaps to support students with dyslexia? Data collected in this study revealed what professional development and continuing education is available to educators. Many states have proposed legislative initiatives promoting dyslexia professional development for educators (Youman & Mather, 2018). In addition, the data collected in this study demonstrated the essential collaboration educators use within their buildings or districts to support students with dyslexia. Previous research conducted by Fien et al., (2021) reported inadequate resources and specialists to support the implementation of explicit instruction and interventions. Participants echoed this sentiment as well in a theme that emerged regarding a lack of resources available to assist in the identification of students with dyslexia tendencies and support students with dyslexia.

#### **Theme 1: Self-directed Learning and Independent Professional Development.**

Participants stated that they rely on self-initiated learning as well as professional development. They seek independently to fill the gaps in their knowledge on instructional practices to support students with dyslexia to fill the gaps left by insufficient formal training. In a previous study by Torterelli et al., (2021), teachers' self-efficacy related to teachers' professional development preparedness as teacher education and professional development impact teacher efficacy through enhancing teachers' knowledge and skills utilized in the classroom. Participants reported the gap in knowledge stemmed from their teacher preparation programs. This is supported by literature

as reported in a previous study by White et al. (2020) in which no differences in dyslexia knowledge between education and non-education majors were found.

Previous studies reported that educators lack effective training or no training at all to support teaching students with dyslexia, resulting in a gap in knowledge of dyslexia and instructional strategies to support students with dyslexia (Gonzalez, 2021; Hindman et al., 2020; Mullikin et al., 2021). Participants expressed that their professional development often happened informally or in real time as they were actively supporting students in the classroom. Ahmad et al. (2018) expressed in a previous study that providing reading instruction to students with dyslexia can challenge educators as their lack of effective teaching methods in an inclusive classroom can limit their success at meeting individual student needs. The lack of professional development further supports the concept that an educator cannot teach what they do not know (Anderson, 2021).

**Theme 2: Collaboration with Specialists.** Participants in this study emphasized the value of learning from colleagues who had more specific training or experience with dyslexia. Participants in this study stressed that due to lack of professional development and resources, it is vital to collaborate with specialists and colleagues to overcome training gaps in dyslexia instruction. A previous study further confirmed the potential for educator professional development and coaching to support the implementation of explicit instruction, intervention, and data-driven instructional decision-making not available to educators due to the lack of specialists and resources available (Fien et al., 2021). Participants felt that through collaboration with special education teachers, psychologists, and speech therapists, they could support them in the development of interventions, individualized education plans or accommodations, and demonstrate how to implement explicit instruction within their general education classroom.

**Theme 3: Resource Limitations.** Participants in this study stressed the lack of adequate resources available to support students with dyslexia. Participants noted that this resource limitation was not limited to professional development, specialists, but also included materials and instructional resources to effectively support students with dyslexia. Though 35 states have laws and policies requirements for universal screening to occur for all students, participants reported broader institutional issues resulting in identifying students too late in their academic career (Gearin et al., 2022). Additionally, participants expressed concerns related to lack of institutional procedures to effectively and systematically identify students with dyslexia. Other concerns expressed surrounding education knowledge and lack of professional degree and state issued teaching certifications related to the teaching position educators held within their building. Participants expressed their frustrations and resource limitations resulting in delayed or inconsistent support for students with dyslexia.

### **Recommendations for Practice**

The initial purpose for conducting this study was to address the lack of effective training in understanding dyslexia in addition to knowledge supporting students with dyslexia (Gonzalez, 2021; Hindman et al., 2020; Mullikin et al., 2021). I hoped to explore how teachers described their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. The findings are noteworthy because they show participants shared similar knowledge of dyslexia, instructional strategies to support students with dyslexia, as well as shared similar frustrations related to lack of preparation, professional development opportunities, and limited resources to support their abilities to provide necessary academic accommodations within their general education classrooms. The results and conclusions of this study also generate the following recommendations for general education teachers.

### ***Structured Dyslexia Professional Development for Teachers.***

Consistent with prior research (Kumas et al., 2021; Mullikin et al., 2021; Ramil et al., 2019; Schraeder et al., 2021; White et al., 2020), this study confirmed that many general education teachers hold misconceptions or have gaps in their foundational understanding of dyslexia. Participants reported that formal training, whether in credentialing programs or district-sponsored professional development, was insufficient in preparing them to effectively support students with dyslexia. In response, many educators described seeing additional, often self-funded, professional learning opportunities through workshops, graduate coursework, or independent reading to fill gaps in knowledge.

To address these inconsistencies and ensure equitable support for all students with dyslexia, school systems and teacher credentialing programs should require structured, dyslexia-specific training. The professional development should go beyond awareness and identification and include practical, research-based strategies such as early identification, structured literacy, and multisensory instruction. Districts should also provide continuous opportunities for professional growth and embed dyslexia training into new high programs, annual PD schedules, and instructional coaching cycles. Thus, supporting teacher knowledge development is essential, especially since educator self-efficacy has been directly linked to advancing student growth. (Hindman et al., 2020).

### ***Consistent Differentiation and Multisensory Supports***

Supporting students to provide equal access to the general education curriculum and receive high-quality instruction requires educators to provide appropriate accommodations that meet the need of each student (Alsarawi & Sukonthaman, 2023; Thwala et al., 2020). Participants in this study demonstrated a commitment to providing appropriate accommodations

as well as differentiated instruction but often lacks formal guidance and consistent access to resources. Results from this study indicate that teachers rely on informal practices such as oral testing, shortened or modified assignments, preferential seating, and multisensory materials like color-coded phonics cards or sandpaper letters. However, implementation was varied widely between schools and classrooms, with some participants unsure of best practices or facing resistance related to perceived fairness.

To address these gaps, school and district leaders should prioritize the development of clear policies on classroom accommodations and instructional differentiation. These guidelines should include structured training multisensory instruction and the effective use of differentiation to meet the diverse needs of students with dyslexia. Additionally, schools and districts should audit their existing resources and ensure that all classrooms are equipped with the tools needed to implement these strategies effectively. Educators that provide appropriate accommodations or differentiated instruction, are more likely to meet diverse learning needs (Shaywitz & Shaywitz, 2020; Shillingford et al., 2021). By standardizing these practices, educators can improve instructional equity and ensure that all students have access to the appropriate supports to promote academic success.

### ***Promote Interdisciplinary Collaboration***

Another strong theme from the study was the value of collaboration between general education teachers and specialists within their building or district, such as reading interventionists, special education teachers, and speech-language pathologists. Many participants relied on these specific colleagues for insight and assistance in planning appropriate interventions, accommodations, and differentiated instruction. However, access to specialists

was inconsistent, particularly in under-resourced schools, and formal collaboration procedures were referenced as lacking.

To improve outcomes for all students and students with dyslexia, schools should implement a more formalized interdisciplinary collaboration model. These may include scheduled co-planning time, case study meetings, intervention teams, or collaborative professional learning communities (PLCs). Schools and districts should clarify roles and referral pathways to ensure that all educators know when and how to seek support for students. Dymock and Nicholson (2023) found that teachers rated themselves highly in terms of their sense of responsibility for supporting students with dyslexia and expressed a positive attitude toward assisting them in the classroom. Building strong communication and collaboration systems not only enhances instructional decision-making but also reinforces a shared responsibility for addressing the needs of all students.

### **Recommendations for Future Research**

Bandura's self-efficacy theory as the theoretical framework for this study provided a perspective through which this study of exploring how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. Bandura (1977) explained teachers' self-efficacy as educators' beliefs about their ability to address students' academic outcomes. This theoretical framework was appropriate for the study because educators with high level self-efficacy tend to have higher levels of student achievement (Hindman et al., 2020). By gaining a deeper understanding on how teachers describe their knowledge and instructional strategies to support students with dyslexia, there is a potential to enhance knowledge on dyslexia and instructional practices to support students with dyslexia. The use of the results of this study aimed to provide a

deeper understanding of teachers' success, self-efficacy, and professional needs to benefit student academic achievement. There is a potential to enhance knowledge on dyslexia and instructional practices to support students with dyslexia through gaining a deeper understanding of how teachers describe their knowledge and instructional strategies to overcome training gaps to support students with dyslexia.

Previous research reports the relevance of self-efficacy in determining the success of instructional practices (Gibbs et al., 2020; Ozokcu, 2017; Tortereli et al. 2021). The current study found several steps that educators can take to further develop their conceptualization of dyslexia and better support students with dyslexia. Further research should be conducted regarding teacher induction preparation. Teacher induction preparation at the college level builds the foundational skills and knowledge for teachers to begin their educational career. Gaining a deeper understanding of content and instructional practices introduced in a teacher certification program would provide insight to the beginning conceptualization of dyslexia had by educators. Additionally, teachers should seek to continue to grow in their knowledge of dyslexia and instructional strategies to support students with dyslexia by participating in ongoing professional development, utilizing multisensory instructional materials, accommodations and differentiation strategies as appropriate, as well as collaborating with colleagues and specialists. As a result, students are better supported, resulting in academic engagement, success, and overall achievement.

The small, concentrated population size of this study could be considered a limiting factor. The population for this study consisted of 42 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States. Despite efforts to ensure generalizability, future research involving a wider population would be better to support the broader application of the conclusions. Researchers can

replicate this study and expand it to all grade levels or broaden the teacher classification to include insight from interventionists, special education teachers, and other professionals that provide instructional support to ensure a broader collection of educator perceptions is explored and offer insights into different grade level knowledge of instructional strategies to support students with dyslexia.

Previous research has shown that educators lacked effective training in understanding dyslexia in addition to knowledge on supporting students with dyslexia (Hindman et al., 2020; Gonzalez, 2021; Schraeder et al., 2021). The current study focused on exploring how educators describe their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. The next logical step for future research should investigate the impact and effectiveness of strategies to support students with dyslexia. Future research may evaluate the academic and/or emotional outcomes of students with dyslexia in classrooms where educators implement the strategies described in the current study.

## **Conclusions**

The current qualitative case study was used to explore how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States described their knowledge of instructional strategies to overcome training gaps to support students with dyslexia. According to the National Center for Education Statistics (2022), only 33% of fourth-grade students meet proficiency levels in reading. This lack of reading proficiency has led to the need to educate teachers on dyslexia, identification of dyslexia, and instructional strategies to support students with dyslexia (Gonzalez, 2021; Hindman et al., 2020; Mullikin et al., 2021). Forty-two 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in self-contained classrooms across the United States were examined regarding their knowledge of dyslexia and the instructional strategies they use to support

students with dyslexia. I sought to provide a deeper understanding of teachers' success, self-efficacy, and professional needs to benefit and support student academic achievement.

Teachers' lack of effective pedagogical reading training can negatively impact students' achievement (Berent & Platt, 2021; Gonzalez, 2021; Hindman et al., 2020; Mullikin et al., 2021). Additionally, many educators have a basic level of conceptualization along with common misconceptions surrounding dyslexia (Ramil et al., 2019; White et al., 2020). Students with dyslexia frequently require accommodations to promote the accessibility of general education curriculum (Shaywitz & Shaywitz, 2020; Shillingford et al., 2021). Though many states have proposed legislative initiatives to require dyslexia professional development, inadequate resources may impede the implementation of the professional development and resources available to educators (Fien et al., 2021; Youman & Mather, 2018). Results from the study indicated that general educators have a basic understanding of dyslexia and its symptoms as related to behaviors exhibited within the classroom. The results also emphasized the emotional and social impacts that dyslexia has on students in the classroom on an emotional and behavioral level.

Bandura (1977) defined teachers' self-efficacy as their belief in their capacity to influence students' academic success. The findings of this study align with this theoretical framework, as educators with higher levels of self-efficacy are often associated with improved student outcomes (Hindman et al., 2020). Future research should include increasing the number of participants by expanding the population to include all grade levels and/or educational positions within the classroom setting, to include insight from specialists to enhance a broader collection of educator perceptions and offer insights into instructional strategies to support students with dyslexia.



## References

- Andrade, C. (2020). Sample size and its importance in research. *Indian Journal of Psychological Medicine*, 42(1), 102–103. [https://doi.org/10.4103/IJPSYM.IJPSYM\\_504\\_19](https://doi.org/10.4103/IJPSYM.IJPSYM_504_19)
- Adlof, S. M. (2020). Promoting reading achievement in children with developmental language disorders: What can we learn from research on specific language impairment and dyslexia? *Journal of Speech, Language, and Hearing Research: JSLHR*, 63(10), 3277–3292. [https://doi.org/10.1044/2020\\_JSLHR-20-00118](https://doi.org/10.1044/2020_JSLHR-20-00118)
- Ahmad, S., Ali, M. M., & Salehuddin, K. (2018). ESL teachers' experience in teaching pupils with dyslexia in mainstream classrooms. *Creative Education*, 09(14) 2171–2182. <https://doi.org/10.4236/ce.2018.914158>
- Alsarawi, A., & Sukonthaman, R. (2023). Preservice teachers' attitudes, knowledge, and self-efficacy of inclusive teaching practices. *International Journal of Disability, Development & Education*, 70(5), 705–721. <https://doi.org/10.1080/1034912X.2021.1922992>
- Al Otaiba, S., Rouse, A. G., & Baker, K. (2018). Elementary grade intervention approaches to treat specific learning disabilities, including dyslexia. *Language, Speech & Hearing Services in Schools*, 49(4), 829–842. [https://doi.org/10.1044/2018\\_LSHSS-DYSLC-18-0022](https://doi.org/10.1044/2018_LSHSS-DYSLC-18-0022)
- Bandura, A. (1977). *Social learning theory*. Prentice- Hall.
- Bandura, A. (2020). Social cognitive theory: An agentic perspective. *Psychology: Journal of the Hellenic Psychological Society*, 12(3), 313–333. [https://doi.org/10.12681/psy\\_hps.23964](https://doi.org/10.12681/psy_hps.23964)
- Bandura, A., & Wessels, S. (1994). Self-efficacy. In V. S. Ramachandran (Ed.), *Encyclopedia of human behavior* (Vol. 4; pp. 71–81). Academic Press.

- Bazen, L., de Bree, E. H., Van den Boer, M., & De Jong, P. F. (2023). Perceived negative consequences of dyslexia: The influence of person and environmental factors. *Annals of Dyslexia*, 73(2), 214–234. <https://doi.org/10.1007/s11881-022-00274-0>
- Benson, N. F., Maki, K. E., Floyd, R. G., Eckert, T. L., Kranzler, J. H., & Fefer, S. A. (2020). A national survey of school psychologists' practices in identifying specific learning disabilities. *School Psychology*, 35(2), 146–157. <https://psycnet.apa.org/doi/10.1037/spq0000344>
- Berent, I., & Platt, M. (2021). Public misconceptions about dyslexia: The role of intuitive psychology. *PloS ONE*, 16(12), 1–24. <https://doi.org/10.1371/journal.pone.0259019>
- Bolourian, Y., Losh, A., Hamsho, N., Eisenhower, A., & Blacher, J. (2022). General education teachers' perceptions of autism, inclusive practices, and relationship building strategies. *Journal of Autism & Developmental Disorders*, 52(9), 3977–3990. <https://doi.org/10.1007/s10803-021-05266-4>
- Bryan, J., & Graham, D. (2022). How many focus groups are enough: Focus groups for dissertation research. *Faculty Focus*. <https://www.facultyfocus.com/articles/academic-leadership/how-many-focus-groups-are-enough-focus-groups-for-dissertation-research/>
- Burk, K., & Hasbrouck, J. (2023). Connecting the science of reading to social justice: Introduction to the special section. *School Psychology* (Washington, D.C.), 38(1), 4–6. <https://doi.org/10.1037/spq0000536>
- Cansoy, R., Parlar, H., & Turkoglu, M. E. (2020). A predictor of teachers' psychological well-being: Teacher self-efficacy. *International Online Journal of Educational Sciences*, 12(4), 41–55. <https://doi.org/10.15345/iojes.2020.04.003>

- Castillo, A., Gilger, J.W. (2018). Adult perceptions of children with dyslexia in the USA. *Annals of Dyslexia*, 68, 203–217. <https://doi.org/10.1007/s11881-018-0163-0>
- Catts, H. W., & Hogan, T. P. (2020). Dyslexia: An ounce of prevention is better than a pound of diagnosis and treatment. <https://doi.org/10.31234/osf.io/nvgje>
- Chandra Handa, M. (2020). Examining students’ and teachers’ perceptions of differentiated practices, student engagement, and teacher qualities. *Journal of Advanced Academics*, 31(4), 530–568. <https://doi.org/10.1177/1932202X20931457>
- Connelly, L. M. (2016). Trustworthiness in qualitative research. *Medsurg Nursing*, 25(6), 435–436.
- Dymock, S., & Nicholson, T. (2023), Dyslexia seen through the eyes of teachers: An exploratory survey. *Read Res Q*, 58: 333-344. <https://doi.org/10.1002/rrq.490>
- Elliott, J. G. (2020). It’s time to be scientific about dyslexia. *Reading Research Quarterly*, 55, S61–S75. <https://doi.org/10.1002/rrq.333>
- Ellis, J. L., & Hart, D. L. (2023). Strengthening the choice for a generic qualitative research design. *Qualitative Report*, 28(6), 1759–1768. <https://doi.org/10.46743/2160-3715/2023.5474>
- Fien, H., Nelson, N. J., Smolkowski, K., Kosty, D., Pilger, M., Baker, S. K., & Smith, J. L. M. (2021). A conceptual replication study of the enhanced core reading instruction MTSS-reading model. *Exceptional Children*, 87(3), 265–288. <https://doi.org/10.1177/0014402920953763>
- Fisher, D., Frey, N., & Lapp, D. (2023). Veteran teachers’ understanding of “balanced literacy.” *Journal of Education*, 203(1), 188–195. <https://doi.org/10.1177/00220574211025980>

- Fuchs, D., & Fuchs, L. S. (2017). Critique of the national evaluation of response to intervention: A case for simpler frameworks. *Exceptional Children, 83*(3), 255–268. <https://doi.org/10.1177/0014402917693580>
- Gearin, B., Petscher, Y., Stanley, C., Nelson, N. J., & Fien, H. (2022). Document analysis of state dyslexia legislation suggests likely heterogeneous effects on student and school outcomes. *Learning Disability Quarterly, 45*(4), 267–279. <https://doi.org/10.1177/0731948721991549>
- Gonzalez, M. (2021). Dyslexia knowledge, perceived preparedness, and professional development needs of in-service educators. *Annals of Dyslexia, 71*(3), 547–567. <https://doi.org/10.1007/s11881-021-00235-z>
- Graham, G. (2021). Teacher and parent perceptions of training, supports, and learning gains among HISD students with dyslexia, 2020-2021. Research Educational Program Report. *Houston Independent School District*.
- Hall, C., Dahl-Leonard, K., & Cannon, G. (2022). Observing two reading intervention programs for students with dyslexia. *Exceptionality, 30*(2), 109–125. <https://doi.org/10.1080/09362835.2021.1938067>
- Hall, C., Dahl-Leonard, K., Cho, E., Solari, E. J., Capin, P., Conner, C. L., Henry, A. R., Cook, L., Hayes, L., Vargas, I., Richmond, C. L., & Kehoe, K. F. (2023). Forty years of reading intervention research for elementary students with or at risk for dyslexia: A systematic review and meta-analysis. *Reading Research Quarterly, 58*(2), 285–312. <https://doi.org/10.1002/rrq.477>

- Hennink, M., & Kaiser, B. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social Science & Medicine* (292) 114523  
<https://doi.org/10.1016/j.socscimed.2021.114523>
- Hongyao, H. E., Chun, J. I., Xiaoyan, G., Fangfang, L., Jing, Z., Lin, Z., Pengxiang, Z., & Zengchun, L. (2023). Associative gene networks reveal novel candidates important for ADHD and dyslexia comorbidity. *BMC Medical Genomics*, 16(1), 1–17.  
<https://doi.org/10.1186/s12920-023-01502-1>
- Helland, T. (2022). Trends in dyslexia research during the period 1950 to 2020—Theories, definitions, and publications. *Brain Sciences*, 12(10), 1323.  
<https://doi.org/10.3390/brainsci12101323>
- Heslin, P., Klehe, U., & Keating, L. (Eds.) (2017). (Vols. 1-4). SAGE Publications, Inc,  
<http://dx.doi.org/10.4135/9781483386874.n481>
- Hindman, A. H., Morrison, F. J., Connor, C. M., & Connor, J. A. (2020). Bringing the science of reading to preservice elementary teachers: Tools that bridge research and practice. *Reading Research Quarterly*, 55(S1), S197. <https://doi.org/10.1002/rrq.345>
- Hudson, A. K., Moore, K. A., Han, B., Wee Koh, P., Binks-Cantrell, E., & Malatesha Joshi, R. (2021). Elementary teachers' knowledge of foundational literacy skills: A critical piece of the puzzle in the science of reading. *Reading Research Quarterly*, 56(1), S287–S315.  
<https://doi.org/10.1002/rrq.408>
- International Dyslexia Association. (2022). Dyslexia legislation interactive map. International Dyslexia Association. <https://dyslexiaida.org/dyslexia-legislation-interactive-map/>
- International Dyslexia Association. (2023). Definition of dyslexia. From <https://dyslexiaida.org/definition-of-dyslexia/>

- Johnson, J. L., Adkins, D., & Chauvin, S. (2020). A review of the quality indicators of rigor in qualitative research. *American Journal of Pharmaceutical Education*, 84(1), 138–146.  
<https://doi.org/10.5688/ajpe7120>
- Jones, A. L., Holtgraves, T. G., & Sander, J. B. (2019). Attitudes and knowledge of future teachers to identify struggling readers. *Teacher Educator*, 54(1), 46–59.  
<https://doi.org/10.1080/08878730.2018.1490842>
- Kalsoom, T., Mujahid, A. H., & Zulfqar, A. (2020). Dyslexia as a learning disability: Teachers' perceptions and practices at school level. *Bulletin of Education and Research*, 42(1), 155–166.
- Karim, M., Masud, N. A., Subarna, N., Taherun, M., Billah, M., & Wienaah, P. (2021). Self-efficacy: A Key Components of Teacher Effectiveness. Taherun and Billah, Md. Masum and Wienaah, Prosper, Self-efficacy: A Key Components of Teacher Effectiveness (December 23, 2021). Karim, MR, Masud, NA, Subarna, MTN, Billah, MM, & Wienaah, P, 24–34.
- Kirby, P. (2020). Dyslexia debated, then and now: A historical perspective on the dyslexia debate. *Oxford Review of Education*, 46(4), 472–486.  
<https://doi.org/10.1080/03054985.2020.1747418>
- Klages, C., Scholte, M.-M., Fowler, K., & Frierson, C. (2020). Linking science-based research with a structured literacy program to teach students with dyslexia to read: connections: OG in 3-D®. *Reading Improvement*, 57(2), 47–57.
- Knight, C. (2018). What is dyslexia? An exploration of the relationship between teachers' understandings of dyslexia and their training experiences. *Dyslexia* (Chichester, England), 24(3), 207–219. <https://doi.org/10.1002/dys.1593>

- Knowles, M. S. (1984). *Andragogy in action: Applying modern principles of adult education*. Jossey Bass.
- Leseyane, M., Madende, P., Makgato, M., & Cekiso, M. (2018). Dyslexia learners' experiences with their peers and teachers in special and mainstream primary schools in north-west province. *African Journal of Disability*, 7, 1–7 <https://doi.org/10.4102/ajod.v7i0.363>
- Lichtman, M. (2014). *A detailed examination of common approaches*. SAGE Publications, Inc., <https://doi.org/10.4135/9781544307756>
- Miciak, J., Ahmed, Y., Capin, P., & Francis, D. J. (2022). The reading profiles of late elementary English learners with and without risk for dyslexia. *Annals of Dyslexia*, 72(2), 276–300.
- Merriam, S. B., & Grenier, R. S. (2019). *Qualitative research in practice: Examples for discussion and analysis* (2nd ed.). Jossey-Bass.
- Miyauchi, H. (2020) A systematic review on inclusive education of students with visual impairment. *Education Sciences*, 10(11), 346. <https://doi.org/10.3390/educsci10110346>
- Mullikin, K., Stransky, M., Tendulkar, S., Casey, M., & Kosinski, K. (2021). Informal preparation and years of experience: Key correlates of dyslexia knowledge among Massachusetts early elementary teachers. *Dyslexia* (Chichester, England), 27(4), 510–524. <https://doi.org/10.1002/dys.1701>
- National Association for Educational Progress. (2022). NAEP reading report card: national achievement-level results. National Center for Educational Statistics. <https://www.nationsreportcard.gov/reading/nation/achievement/?grade=4>
- National Center on Improving Literacy (2021). State of dyslexia. From <https://improvingliteracy.org/state-ofdyslexia>

- Nemmi, F., Cignetti, F., Vaugoyeau, M., Assaiante, C., Chaix, Y., & Péran, P. (2023). Developmental dyslexia, developmental coordination disorder and comorbidity discrimination using multimodal structural and functional neuroimaging. *Cortex*, 160, 43–54. <https://doi.org/10.1016/j.cortex.2022.10.016>
- Okechukwu, F.O., Mefoh, P.C., Nubia, U.I., Nwauzoije, E.J., Umennuihe, C.L., Nwobi, C.A., Ogba, K. T., Chukweze, M. E., Aliche, J. C., Ogbonnaya, E. K., Okoli, D. N., Onyekachi, C. C., Abang, S., Epistle, E., Nnorodi, C., & Obi, C. V. (2023). Development and validation of a teacher awareness questionnaire about dyslexia. *South African Journal of Childhood Education*, 13(1).
- Özokcu, O. (2017). Investigating the relationship between teachers' self-efficacy beliefs and efficacy for inclusion. *Online Submission*, 2(6), 234–252.
- Ramli, S., Idris, I. B., Omar, K., Harun, D., Surat, S., Mohamad Yusop, Y., & Zaida Nor, Z. (2019). Preschool teachers' knowledge on dyslexia: A Malaysian experience. *Malaysian Journal of Medicine and Health Sciences*, 21(25), 26–30.
- Raymond, R. D., Sharp, L. A., & Piper, R. (2020). Developing instructional capacity and competence among preservice teachers: Voices of literacy teacher educators. *Excellence in Education Journal*, 9(2), 29–54.
- Riser-Kositsky, M. (2019, January 3). Education statistics: Facts about American schools. *Education week*. <https://www.edweek.org/leadership/education-statistics-facts-about-american-schools/2019/01>
- Roop, T. D., & Howe, K. S. (2022). Teacher educators' beliefs, self-efficacy, and perceptions related to dyslexia: Phase I. *Literacy Practice & Research*, 47(3), 1–25.

- Saldana, J. (2015). Introduction. (Vols. 1-0). SAGE Publications, Inc.,  
<https://doi.org/10.4135/9781071909782>
- Sadusky, A., Berger, E. P., Reupert, A. E., & Freeman, N. C. (2022). Methods used by psychologists for identifying dyslexia: A systematic review. *Dyslexia* (Chichester, England), 28(2), 132–148. <https://doi.org/10.1002/dys.1706>
- Shaywitz, B. A., & Shaywitz, S. E. (2020). The American experience: Towards a 21st century definition of dyslexia. *Oxford Review of Education*, 46(4), 454–471.  
<https://doi.org/10.1080/03054985.2020.1793545>
- Shaywitz, Sally E.A., Shaywitz, Jonathan E.B., Shaywitz, & Bennett A.A. (2021) Dyslexia in the 21<sup>st</sup> century. *Current Opinion in Psychiatry*, 34(2), 80–86.  
<https://doi.org/10.1097/YCO.0000000000000670>
- Schraeder, M., Fox, J., & Mohn, R. (2021). K-2 principal knowledge (not leadership) matters for dyslexia intervention. *Dyslexia* (Chichester, England), 27(4), 525–547.  
<https://doi.org/10.1002/dys.1690>
- Shillingford, M. A., Butler, S. K., Mitchell, M. D., & Heard, N. J. (2021). Experiences of Black males with dyslexia in the U.S. education System. *Professional School Counseling*, 25(1\_part\_4). <https://doi.org/10.1177/2156759X211040041>
- Snow, P. (2020). Balanced literacy or systematic reading instruction? *Perspectives on Language and Literacy*, 46(1), 35-39. <https://www.proquest.com/scholarly-journals/balanced-literacy-systematic-reading-instruction/docview/2413997823/se-2>
- Snowling, M. J., Hulme, C., & Nation, K. (2020). Defining and understanding dyslexia: Past, present, and future. *Oxford Review of Education*, 46(4) 501–513.

- Stahl, N. A., & King, J. R. (2020). Expanding approaches for research: Understanding and using trustworthiness in qualitative research. *Journal of Developmental Education, 44*(1), 26–28.
- Storie, M. S., Joseph, L. M., Gillespie, T., & McDougal, J. (2024). A review of three commonly used brief dyslexia rating scales. *Psychology in the Schools, 61*(1), 237–252.  
<https://doi.org/10.1002/pits.23051>
- The Reading League. (2022). *The science of reading: Defining guide* {eBook edition}. The Reading League. <https://www.theReadingLeague.org/what-is-the-science-of-reading/defining-guidebook/?fbclid=IwAR05u0M8KsbnRiTzRvjo4eoghGGV144RQ>
- Thomas, P. (2022). The science of reading movement: The never-ending debate and the need for a different approach to reading instruction. *National Education Policy Center*.
- Tops, W., Jansen, D., Ceulenmans, E., Petry, K., Hilton, N. H., & Baeyens, D. (2022). Participation problems and effective accommodations in students with dyslexia in higher education. *European Journal of Special Needs Education, 38*(3), 317–333.  
<https://doi.org/10.1080/08856257.2022.2089507>
- Tortorelli, L. S., Lupo, S. M., & Wheatley, B. C. (2021). Examining teacher preparation for code-related reading instruction: An integrated literature review. *Reading Research Quarterly, 56*(1), S317–S337. <https://doi.org/10.1002/rrq.396>
- Vansteelandt, I., Mol, S. E., Vanderlinde, R., Lerkkanen, M., & Van Keer, H. (2020). In pursuit of beginning teachers' competence in promoting reading motivation: A mixed-methods study into the impact of a continuing professional development program. *Teaching and Teacher Education, 96*, 103–154. <https://doi.org/10.1016/j.tate.2020.103154>

- Wagner, R., Zirps, F., Edwards, A., Wood, S., Joyner, R., Becker, B., Liu, G., & Beal, B. (2020). The prevalence of dyslexia: A new approach to its estimation. *Journal of Learning Disabilities, 53*(5), 354–365. <https://doi.org/10.1177/0022219420920377>
- Werth, R. (2019). What causes dyslexia? Identifying the causes and effective compensatory therapy. *Restorative Neurology and Neuroscience, 37*(6), 591–608. <https://doi.org/10.3233/RNN-190939>
- Woodcock, S., & Nicoll, S. (2022). “It isn’t you”: Teachers’ beliefs about inclusive education and their responses toward specific learning disabilities. *Psychology in the Schools, 59*(4), 765–783. <https://doi.org/10.1002/pits.22643>
- Woods, L., & Graham, K. K. (2020). Are scientific reading instruction and dyslexia interventions the same? Distinctions for elementary education preparation programs. *SRATE Journal, 29*(1).
- Worthy, J., Lammert, C., Long, S. L., Salmerón, C., & Godfrey, V. (2018). “What if we were committed to giving every individual the services and opportunities they need?” Teacher educators’ understandings, perspectives, and practices surrounding dyslexia. *Research in the Teaching of English, 53*(2), 125–148. <https://www.jstor.org/stable/26802729>
- Yakut, A. D. (2021). Students with specific learning disabilities in inclusive settings: A study of teachers’ self-efficacy. *Learning Disabilities Research & Practice* (Wiley-Blackwell), *36*(2), 136–144. <https://doi.org/10.1111/ldrp.12241>
- Yale Center for Dyslexia and Creativity. (2022). How common is dyslexia. <https://dyslexia.yale.edu/dyslexia/dyslexia-faq/>
- Yin, R. (2018). *Case study research and applications: Design and methods* (6th ed.): Sage.

- Youman, M., & Mather, N. (2018). Dyslexia laws in the USA: A 2018 update. *Perspectives on Language and Literacy*, 44(2), 37–41. Retrieved from <https://www.proquest.com/scholarly-journals/dyslexia-laws-usa-2018-update/docview/2082576564/se-2>
- Zhang, J., Martella, R. C., Kang, S., & Yenioglu, B. Y. (2023). Response to Intervention (RTI)/Multi-Tiered Systems of Support (MTSS): A Nationwide Analysis *Journal of Educational Leadership and Policy Studies*, 7(1).

## Appendix A

### Interview Protocol

#### Participant Invitation Process

The recruitment letter will be posted in one private social media group inviting potential participants to take part in the proposed study. Participants will click the link provided in the recruitment letter and be directed to a Google Form where they will provide their contact information if they are interested in taking part in the study. A copy of the consent form will be emailed to each participant for review. Additionally, each participant will email written consent back to the researcher. At the scheduled interview, the researcher will review the informed consent letter with each participant before the interview begins as well as ask each participant if they agree. Verbal agreement will be recorded via the beginning of the Zoom call.

#### Interview Setup and Location

**Interview Location:** Interviews will be conducted via Zoom. The researcher will begin the video teleconference with the camera enabled and on. Each participant will have the option of joining with or without video enabled. All conducted Zoom individual interviews and focus group will be audio and video recorded.

**Materials:** The researcher will have the interview protocol and interview questions printed out to enhance consistency while conducting interviews. Additionally, the researcher will utilize a notebook for all field notes taken during each interview to use for future data analysis.

**Interviewer:** The interviewer for all individual interviews and focus group will be the primary researcher, Jessica Zumwalde.

**Process of the Interview:** The researcher will welcome each participant and thank them for their time. The interviews will record both audio and video. If a technical error arises with Zoom, the

research questions and answers may be typed into the chat box section provided by Zoom. The researcher will read the introduction to each participant and then ask the participants if they have any questions or concerns before beginning the interview portion of the study. The researcher will then ask the series of questions and allow each participant the opportunity to answer.

Additional follow-up questions may be asked to gain depth and understanding of the responses.

### **Consent Form / Ethical Considerations**

No interviews will be conducted prior to IRB approval and written consent from all participants.

The researcher will address the details in the consent form with each participant. Additionally, the researcher will address confidentiality with each participant, to include assigning each participant with a non-identifying identification code to ensure anonymity. Additional measures to ensure anonymity will include all transcripts and recordings of the interviews and focus groups will be stored on a password-protected laptop with the researcher as the sole individual with accessibility. The researcher will also express to participants that their participation is voluntary and that they hold the right to stop the interview process at any time without consequence.

### **Interview Introduction**

Hello, my name is Jessica Zumwalde. Thank you for taking the time to participate in this research study. As stated in the consent letter provided to you via email, I am a doctoral candidate at Northcentral University. This interview will last approximately 45 – 60 minutes.

This interview has 15 questions. The purpose of this qualitative case study is to explore how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge and instructional strategies to overcome training gaps to support students with dyslexia.

All identifying information provided by participants will be removed. Participants will be assigned a generic identification code for the purposes of this study. You will remain anonymous. Your privacy and confidentiality will be maintained throughout the study and publication process. All data collected will be stored in a secure location as well as password protected. Collected data will be destroyed after three years.

Participation is voluntary and as the participant, the interview can be concluded at any time without consequence. You reserve the right to decline any questions during the interview. The interview will be audio/video recorded to ensure accuracy of the interview. All interviews will be transcribed. Zoom recordings and transcriptions will only be accessible by the researcher and kept for three years and then will be deleted.

Do you have any questions prior to beginning? Do I have your permission to record the interview?

### **Interview Conclusion**

I greatly appreciate your time to participate in this study. I will send you a copy of the transcript via email as soon as it is transcribed. As a reminder, all data is confidential and anonymous. The data collected will be kept confidential for three years and then deleted or destroyed. Do you have any final questions?

**Participant:** \_\_\_\_\_

**Participant ID:** \_\_\_\_\_

**Date / Time:** \_\_\_\_\_

### Interview Questions

1. What are your experiences in the classroom? Could you share details about your teaching tenure, the grade levels you have taught, and any special roles you have taken on?
2. How would you explain your comprehension of dyslexia?
3. In your view, what impact does dyslexia have on students in a regular education setting?
4. Based on your experience, how do you spot students who might be facing challenges related to dyslexia, and what measures do you take to confirm or address these concerns?
5. What resources do you have at your disposal for identifying dyslexia in students?
6. Do you feel adequately equipped with professional knowledge to identify or recognize a student with dyslexia in your classroom?
7. Can you share specific examples of accommodations or modifications you use to support students with dyslexia in their learning environment?
8. Do you believe you have enough resources to instruct a student with dyslexia, or those at risk? Why or why not?
9. What instructional strategies do you employ to support students with dyslexia or dyslexia tendencies?
10. What challenges have you faced in supporting students with dyslexia, and how have you addressed or overcome them?
11. What district-provided professional development have you undergone, and how has it influenced your teaching practices?
12. Have you received beneficial professional development either from your district or externally in identifying/supporting students with dyslexia? Which components were most helpful, and how have they influenced your teaching practices?

### **Focus Group Questions**

1. In fostering a supportive learning environment for students with dyslexia, how is collaboration undertaken with special education professionals, specialists, or colleagues?
2. Can any success stories or positive outcomes be shared regarding students with dyslexia resulting from instructional strategies?
3. What strategies are employed to create a positive and inclusive classroom environment that supports the success of students with dyslexia?
4. How are instructional methods adapted to meet the specific needs of students with dyslexia in the classroom?
5. To stay informed about current research and best practices in dyslexia intervention, how is active seeking and integration of this knowledge into teaching approaches accomplished?

## Appendix B

### Social Media Post

My name is Jessica Zumwalde, and I am a doctoral student at National University. I am conducting a research study to in fulfillment of my Ph.D. to determine how 3<sup>rd</sup> – 6<sup>th</sup> grade general education teachers in the United States describe their knowledge of instructional strategies to support students with dyslexia.

I am recruiting individuals who meet all of these criteria:

1. You are a certified 3<sup>rd</sup> – 6<sup>th</sup> grade educator.
2. You teach in the United States.
3. You currently teach in a general education classroom.

If you decide to participate in this study, you will be asked to do one of the following activities:

1. Complete a survey for 10-15 minutes.
2. Participate in a 1:1 semi-structured interview over Zoom for approximately 60 minutes and review your interview transcript via email for 10-15 minutes.
3. Participate in a focus group via Zoom for approximately 60 minutes and review your transcript via email for 10-15 minutes.

During these activities, you will be asked questions about:

- Your perception of knowledge on instructional strategies to support students with dyslexia.
- Any training and professional development you have received.
- Your confidence in identifying dyslexia tendencies.
- Your confidence in supporting students with dyslexia.

If you are interested in participating in this study, or have questions, please contact me at [J.Zumwalde7088@o365.ncu.edu](mailto:J.Zumwalde7088@o365.ncu.edu) or 918-770-3969.

Thank you for considering participating in this voluntary research!

Jessica Zumwalde

## Appendix C

### Permission to Recruit on Social Media

**Donna Trinca Schultz Hejtmanek**

Facebook

Nov 12, 2023, 6:35 PM

**You sent**

My name is Jessica Zumwalde, and I am a doctoral candidate at National University. I am completing my Ph.D. in Elementary Education and have identified my research topic to include beliefs and knowledge of dyslexia among 3rd - 6th-grade general education teachers. I seek permission to make one post providing an invite to my study. I appreciate your consideration in allowing me to make a recruitment post. I hope to be able to provide more data on misconceptions to move towards increased knowledge and instructional practices for students with dyslexia tendencies. Respectfully, Jessica Zumwalde

**Donna**

Permission granted. Best of luck.

## Appendix D

### Wadlington Consent for DBI Use

#### Re: Dyslexia Belief Study

EW

Elizabeth Wadlington <elizabeth.wadlington@gmail.com>

To: Elizabeth Wadlington <elizabeth.wadlington@gmail.com>; Jessica Zumwalde; Patrick Wadlington <pwadlington@hotmail.com>

Mon 11/6/2023 6:24 AM

Jessica,

You may use it. But know I have retired and will not be able to answer questions or help you in any way. Good luck in your endeavors!!

On Sun, Nov 5, 2023, at 7:20 PM Jessica Zumwalde <J.Zumwalde7088@o365.ncu.edu> wrote:  
Dr. Wadlington,

My name is Jessica Zumwalde, and I am a doctoral candidate at National University. I am completing my Ph.D. in Elementary Education and have identified my research topic to include beliefs and knowledge of dyslexia among 3<sup>rd</sup> - 6th-grade general education teachers. In researching this topic, I found your study regarding preservice educators. I seek permission to utilize your Dyslexia Belief Index in my study.

I appreciate your consideration in allowing me to use the DBI tool to further your initial research. I hope to be able to provide more data on misconceptions to move towards increased knowledge and instructional practices for students with dyslexia tendencies.

Respectfully,

Jessica Zumwalde

## Appendix E

### Dyslexia Belief Index

#### **Demographics:**

1. How long have you taught? **Less than 5 years, 5-10 years, more than 10 years**
2. Where did you earn your teaching undergraduate degree? **Drop down list. including other**
3. Do you hold an advanced degree in education?
4. What grade do you teach? **3, 4, 5, 6**
5. Gender? **Male, Female**
6. Do you hold a special education certificate? **Yes, No**
7. Do you hold a reading specialist certificate? **Yes, No**
8. Age? **20-25 years, 26-30 years, 31-35 years, 36-40 years, 41-45 years, 45+ years**
9. Have you knowingly taught children with dyslexia? **Yes, No**
10. Do you feel knowledgeable in teaching students with dyslexia? **Yes, No**

#### Dyslexia Belief Index

1. Dyslexia is a learning disability that affects language processing.
2. People with dyslexia have below average intelligence.
3. Dyslexia can be managed by diet and/or exercise.
4. Individuals with dyslexia have trouble understanding the structure of language, especially phonics.
5. An individual can be dyslexic and gifted.
6. Physicians can prescribe medication to help dyslexia.

7. Dyslexia often affects writing and/or speaking abilities.
8. Multisensory instruction is absolutely necessary for student with dyslexia to learn.
9. In school, dyslexia only affects the student's performance in reading (not in math, social studies, etc.).
10. People with dyslexia often excel in science, music, art, and/or technical fields.
11. Dyslexia causes social, emotional, and/or family problems.
12. Most special education teachers receive intensive training to work with students with dyslexia.
13. Most regular education teachers receive intensive training to work with students with dyslexia.
14. Dyslexia is hereditary.
15. Dyslexia is caused by a poor home environment and/or poor reading instruction.
16. Giving students with dyslexia accommodations such as extra time on tests, shorter spelling lists, special seating, etc. is unfair to other students.
17. College students with dyslexia seldom do well in graduate school.
18. Most poor readers have dyslexia.
19. In school, classroom placement (e.g., special, or general education) should be decided on an individual basis.
20. Students with dyslexia need structured, sequential, direct instruction in basic skills and learning strategies.
21. The brains of individuals with dyslexia are different from those of people without dyslexia.
22. Some students with mild dyslexia may not experience problems due to dyslexia

until middle school or later.

23. Children with dyslexia are more consistently impaired in phonemic awareness (i.e., ability to hear and manipulate sounds in language) than any other ability.

24. Schools usually diagnose dyslexia through the administration of a nationally recognized standardized test.

25. Individuals with dyslexia are usually extremely poor spellers.

26. After three to five hours of instruction, most educators can work competently with students with dyslexia.

27. Individuals with dyslexia may comprehend a passage very well but be unable to pronounce words.

28. Individuals with dyslexia usually exhibit the same characteristics with similar degrees of severity.

29. Word reversal is the major criterion in the identification of dyslexia.

30. Individuals with dyslexia may pronounce words in a passage very well but be unable to comprehend it.

**Likert Scale: 1=know it is false 2=probably false 3=probably true 4=know it is true.**