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Dyslexia And The Need For General Education Teacher Training

Sheeresa S. Begay

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DYSLEXIA AND THE NEED FOR GENERAL EDUCATION TEACHER TRAINING

by

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A Dissertation in Practice

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Doctor of Education

Grand Forks, North Dakota

May
2023

This document, submitted in partial fulfillment of the requirements for the degree from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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Date

PERMISSION

Title   Dyslexia and the Need for General Education Teacher Training

Department   Teaching, Leadership, & Professional Practice

Degree   Doctor of Education

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Sheeresa S. Begay
April 11, 2023

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As is a customary part of my culture, I wish to open up with introductions to let you know who I am. This practice has always been part of my upbringing. "Díne Introduction: *Yá'át'ééh shí éí Sheeresa S. Begay yinishyé Bít'ahnii nishłį́ Naakai dine'é bashishchiin, Nihoobáanii dashicheii, Hashk'ąą hadzohi dashinalí Ákót'éego diné asdzáán nishłį́ Naabi'ání déé'naashá.*" Translation: *Hello, my name is Sheeresa S. Begay. I am of the Folded Arms clan, born for the Mexican clan. My maternal grandfather is of the Gray Streaked-Ends clan, and my paternal grandfather is of the Yucca Fruit clan. In this way, I am a Navajo female, and this is where I come from.* Learning and helping others has always been part of my nature. I attribute it to all those who had a hand in raising me and instilling in me a capacity to keep challenging myself to be the person I'm supposed to be. The completion of this paper and obtaining my Doctor of Education degree is a dream in the making and a culmination of determination, resilience, patience, and inspiration.

First and foremost, I would like to extend an immeasurable thank you to my husband and best friend, Shawn. He has been with me every step on this journey through his words of encouragement and support. Shawn, "Your presence eased my journey and provided me with a sense of calm and focus. I appreciate the person you are and continue to be. I love you forever and always." To each of my boys, Jayden, Keanu, and Kieran, "Mama loves you more than you will ever know. You three have so many gifts and abilities, and I cannot wait to see them blossom over time. You continue to inspire me."

Secondly, I would like to thank my family members. To shimá sáni and my late shicheii (maternal grandmother and grandfather), thank you both for always teaching me how to live in two worlds. Your words of wisdom have carried me through life, and I will make sure that I pass your teachings onto your great grand boys. You are always part of my thoughts and prayers. To shimá (my mother), thank you for teaching me how to always give to others and to help others when they are in need. You helped me gain my voice and stand up for my beliefs. To shizhé'é (my father), thank you for teaching me to be honest and transparent. You helped me to understand the power of words and promises. To shimá yázhí (my maternal aunt), thank you for teaching me how to be a strong and resilient woman. You helped me understand the importance of self-improvement. To shideezhi (my little sister), thank you for always challenging me. You taught me how to question and find the humor in life. I love you Little Rose. To my mother-in-law and father-in-law, thank you for always having a listening ear and providing nothing but support and love to our family.

Next, I would like to thank a few teachers who helped me in redefining my learning along the way. For those teachers who saw my ability—Mr. Martin, Mr. Evans, Mrs. Seitzinger, Mr. Holmes, and many others—thank you. I would also like to thank the many mentors and confidants I met on my journey. Thank you, Dr. Judy Hudson, Dr. Frances Vitali, Dr. Gayle Talaga, Wendy, Flo, Galadriel, Regina, Ginny, April, and many more. Your passion and experiences are forever with me.

Lastly, I would like to extend appreciation to Dr. Jared Schlenker, my advisor and dissertation committee chairperson. Your guidance and support led me to complete my doctoral degree at the University of North Dakota. Thank you also to Dr. Virginia Clinton-Lisell, Dr. Shannon Grave, and Dr. Isaac Karikari for being part of my dissertation committee.

I would like to close with a blessing way prayer. In our culture, we say these words when we are moving forward and to show a deep appreciation. "Díne/Navajo Prayer: *Hózhóogo naasháa doo. Shilaají' hózhóogo naasháa doo. Shikéédę́ę́ hózhóogo naasháa doo. Shikáají' hózhóogo naasháa doo. T'áá ałtso shinaagóó hózhóogo naasháa doo. Hózhǫ́ náhásdlį́į́'. Hózhǫ́ náhásdlį́į́'. Hózhǫ́ náhásdlį́į́'. Hózhǫ́ náhásdlį́į́'.*" Translation: *In beauty, I walk. With beauty before me, I walk. With beauty behind me, I walk. With beauty above me, I walk. With beauty around me, I walk. It has become beauty again.*

ABSTRACT

General education teachers are expected to provide instruction to and promote learning in all students within a general education classroom per state and federal mandates. These mandates ensure students with disabilities like dyslexia are given access to a general education classroom, curriculum, and materials, and provided with support through an Individualized Education Program (IEP) or 504 Plan. However, general education teacher training and professional development programs have often been ineffectual in preparing general education teachers for delivering instruction to and promoting learning in individuals with dyslexia. As a result, many general education teachers are unprepared for supporting students with dyslexia in a general education classroom.

In this mixed-methods, explanatory sequential design study, 10 general education teachers from a non-rural school district shared their training and professional development experiences. Data collection and analysis examined current teacher preparation programs at the time of this study and general education teachers' understanding and awareness of individuals with dyslexia in the late elementary and middle school grade levels. Participants' surveys and interviews examined the requests or the receipts of general education teacher training and professional development in dyslexia, the implementation of accommodations/modifications for dyslexic students, the use of effective instructional practices or strategies for teaching dyslexic students, and the receipt of support and guidance for teachers of students with dyslexia. Findings led the researcher to identify a central theme; access to intervention supports and materials in

providing instruction to and enabling learning in individuals with dyslexia. The purpose of this

study was to identify needs of general education teachers in their classrooms in relation to their

roles and responsibilities of providing instruction to and enabling learning in individuals with

dyslexia.

Keywords: *dyslexia, multi-sensory approach, phonological memory, phonological processing, specific learning disability*

PREFACE

The focus of dyslexia and general education teacher preparation is important to me as a researcher, doctoral student, educator, and most importantly as a parent of children with dyslexia. As an educator and a special education teacher, I noticed the needs of general education teachers and became a supporter and encourager of general education teachers. Additionally, my personal experience as a parent of children with dyslexia has helped me advocate for their needs in a general education classroom. The importance of this study is to bring an understanding and awareness into general education classrooms, as well as building a supportive teacher preparation framework for general education teachers who do not feel prepared to provide instruction to and enable learning in individuals with dyslexia. This study is also about fellow special education teachers taking a step towards promoting communication and collaboration efforts with their fellow general education teaching colleagues to support individuals with dyslexia. Lastly, this study is about the importance of supporting, encouraging, and improving instruction and learning for individuals with dyslexia in general education classrooms.

From my knowledge and experience in the field of education, the following dissertation in practice ensued to enhance my efforts as an educator and parent in providing support, encouragement, and advocacy for individuals with dyslexia in general education classrooms. A comprehensive dissertation in practice is represented in this paper in three separate artifacts: Artifact I: Problem of Practice; Artifact II: Research Approach; Artifact III: Implementation of Solution. Lastly, in the concluding chapter, a summary of the artifacts and reflections expand the

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conversation into further areas of exploration in regard to the need for training and preparation for general education teachers providing instruction and learning to individuals with dyslexia.

In the first artifact, the problem of practice is aimed at bringing an awareness and understanding to readers about individuals with dyslexia in general education classrooms. When talking about individuals with dyslexia, I have attempted to use "People First Language," and have identified individuals with dyslexia as learners with dyslexia or dyslexic leaners, students with dyslexia or dyslexic students, individuals with dyslexia or dyslexic individuals, etc. People First Language puts "the person before the disability" (The Arc of the District of Columbia, 2006, para. 2), instead of identifying a person solely by their disability and calling them dyslexics or retarded and so on.

Artifact I establishes the reality of general education classrooms in regard to training and professional development of general education teachers providing instruction and attempting to enable learning in individuals with dyslexia in general education classrooms. A review of relevant research and practitioner-based literature revealed the importance of a need for general education teacher training and professional development as it relates to educational policy and effective teaching practices, which should be exhibited in a general education classroom. Lastly, the end of Artifact I brings an awareness of the extent of the problem of practice, research supporting common approaches to address the problem of practice, and effective teaching practices and strategies to guide teachers in general education classrooms.

In the second artifact, the research design, procedures, and a summary of results are provided. Reasonings for the research design and approach is further shared including insight into the selection of participants, recruitment of participants, the research environment, and a description of the data analysis methods used. Results are presented and explained. The emphasis

of Artifact II was to understand thoughts and perceptions of general education teachers in general education classrooms who provide instruction and learning to individuals with dyslexia. Participants also brought up their concerns for other struggling learners in a general education classroom. The mention of other struggling learners is acknowledged in the second and third artifacts. Results from this study uncovered a need for teacher assistance and access to materials in the form of intervention supports for individuals with dyslexia in general education classrooms.

The third artifact is based upon the results and findings from this study and provides one application for general education teachers involved in teaching individuals with dyslexia in the field of education. A leaflet for general education teachers was designed to be used as an informative, reflective, and practical guide to support teachers in general education classrooms who teach dyslexic students. Artifact III influences general education teachers' classroom practices and approaches to teaching individuals with dyslexia. Artifact III addressed the problem of practice and presented a solution to the problem of practice mentioned in previous artifacts.

Last of all, the concluding section encompasses the research, study, and application from all three artifacts. This section summarizes and discusses how all three artifacts promote and encourage further research development and exploration towards the problem of practice by addressing limitations and implications for future research. The "Conclusions" section also provides a reflection on the research, study, and application of this project by sharing further areas of inquiry that might support the problem of practice.

ARTIFACT I

PROBLEM OF PRACTICE

Overview of the Problem

General education teachers have a basic understanding of dyslexia but require additional knowledge and training in order to provide effective learning environments for students with dyslexia (Aladwani & Al Shaye, 2012; Carvalhais & da Silva, 2010; Knight, 2017; McMahan et al., 2019; Washburn et al., 2011). Dyslexia is categorized as a specific learning disability affecting approximately 20% of the population in the United States (International Dyslexia Association, 2020b). Diagnosed and undiagnosed individuals with dyslexia are often mistaken for having other learning disabilities because general education teachers do not have comprehensive knowledge and training to identify dyslexia. In most cases general education teachers also lack expertise in determining best teaching strategies to use with dyslexic students (Bernadowski, 2017; Carvalhais & da Silva, 2010; Johnston, 2019; Mills & Clarke, 2017; Washburn et al., 2011). Phonological processing and phonological memory attribute to the neurobiological condition of individuals with dyslexia and can have mild to severe effects on an individual's capacity to participate in spoken and written language within the areas of reading, comprehension, and fluency (Aladwani & Al Shaye, 2012; Carvalhais & da Silva, 2010; Firth et al., 2013; Mills & Clarke, 2017; Peltier et al., 2020; Shaywitz & Shaywitz, 2020).

Individuals with dyslexia have difficulty understanding or remembering rules associated with phonological processing and phonological memory (Firth et al., 2013; Leseyane et al.,

2018; Peltier et al., 2020; Shaywitz & Shaywitz, 2020). According to Foss (2016), initially, when individuals are beginning to learn literacy content such as reading, they will use both sides of their brain, but over time, there is a switch from using both sides of the brain to read to using only the left side. Unfortunately, dyslexic individuals cannot make the switch and continue to use the right side of their brain for the rest of their lives. Individuals with dyslexia have difficulty organizing and retrieving their thoughts, they often take their time processing information, making it difficult for them to express their thought process in verbal or written formats (Mills & Clarke, 2017). These neurobiological conditions make it challenging for dyslexic learners to learn standard literacy (i.e., reading, comprehension, spelling, and fluency) curriculum and material taught in general education settings (Aladwani & Al Shaye, 2012; Firth et al., 2013; Peltier et al., 2020; Shaywitz & Shaywitz, 2020). Dyslexic learners require trained and qualified teachers in general education classrooms to be knowledgeable in the biological, cognitive, and behavioral aspects of dyslexia so teachers present material in such a way that dyslexic learners may understand rudimentary curriculum and material taught in general education settings.

It is important for general education teachers to know about common misconceptions of dyslexia. For example, a common misconception is: individuals with dyslexia see visual reversals of written language (i.e., letters or words) which affects their reading, comprehension, and fluency skills (Aladwani & Al Shaye, 2012; Johnson, 2019; Mills & Clarke, 2017; Peltier et al., 2020; Washburn et al., 2011; Washburn et al., 2017). Additionally, other common misconceptions (i.e., myths) attributed to individuals with dyslexia is that dyslexia is commonly found in primary school students, it can be treated through rigorous practice or through diligent teaching efforts, and it is due to a lack of exposure to literacy. These misconceptions have been dismissed through past research and a growing understanding of dyslexia. Dyslexia can be

diagnosed early in life during the preschool years or later in life during adulthood. Dyslexia is not a disorder that can be treated; instead, individuals can learn effective strategies to ameliorate their condition. Moreover, dyslexia is not caused by lack of exposure to literacy; it is due to a neurobiological condition an individual inherits (Mills & Clarke, 2017; Morin, 2021a; Peltier et al., 2020). Furthermore, researchers have discovered individuals with dyslexia tend to have average to above average intelligence (Mills & Clarke, 2017). Researchers discovered the "cortices" and "axons" are distinguishable in dyslexic individuals—they tend to be physically different than non-dyslexic persons (Foss, 2016). This difference allows individuals with dyslexia to visualize an overall solution or situation rather than focus on cumbersome details, which is distinctive of non-dyslexic dispositions (Foss, 2016; Mills & Clarke, 2017).

There are evident signs an individual may have dyslexia which are noticeable during instruction and learning. An evident example of delayed printed word recognition is when individuals with dyslexia are given a set of words (i.e., sight, spelling, or vocabulary), the general education teacher may notice a delayed response (i.e., verbal, or written expression) (Leseyane et al., 2018). Slow print word recognition makes it difficult for dyslexic students to read fluently (i.e., verbal expression) and express their thoughts through writing (i.e., written expression). Because producing thoughts through verbal and written expression are at the forefront of teaching and part of learning makes it difficult for general education teachers to assess whether a dyslexic student comprehends a curriculum or specific material. Other common indications a student might be a dyslexic learner can be gathered from student work samples and classroom participation. Work samples often reveal marginal aptitude in academic progress; classroom participation reveals challenges in automatically recalling previously learned content and difficulties in reading (i.e., fluency and comprehension; Leseyane et al., 2018).

Across the United States numerous general education teachers are expected to provide dyslexic students with an inclusive learning environment due to local, state, and federal educational accountability guidelines and policies (Byrd & Alexander, 2020; DeRoche, 2013; Peltier et al., 2020; Pit-ten Cate et al., 2018; Washburn et al., 2017; Weiser et al., 2019; Woods & Graham, 2020). However, general education teachers are unprepared to support students with specific learning disabilities (SpLD) like dyslexia and do not fully recognize their role in teaching students with dyslexia (Aladwani & Al Shaye, 2012; Firth et al., 2013; Washburn et al., 2017). Nevertheless, general education teachers are accountable for dyslexic and non-dyslexic students. It is imperative teachers utilize inclusive strategies that grant students with dyslexia equal learning opportunities as their non-dyslexic peers in a general education setting (Carvalhais & da Silva, 2010; Pit-ten Cate et al., 2018; Stuart & Yates, 2018; Thwala et al., 2020).

Expecting general education teachers to be accountable for teaching students with dyslexia places teachers in general education at a precipitous disadvantage in delivering appropriate instructional strategies to dyslexic students. As a result, teachers who lack proper knowledge and training in dyslexia often form learning environments that adversely affect students with dyslexia causing academic and social effects that are detrimental and long-lasting (Bernadowski, 2017; Carvalhais & da Silva, 2010; Knight, 2017). In order for teachers to provide an effective learning environment for dyslexic students, they require access to training, support, and materials from their respective school administrators. With supportive administration, general education teachers can foster inclusive learning environments and provide dyslexic students with access to academic opportunities which contribute to their overall academic achievement and performance (Firth et al., 2013; Merga et al., 2020).

Students with dyslexia are expected to learn the same core (i.e., literacy, math, science, and social studies) curriculum and materials as their non-dyslexic peers but are often unsuccessful in mastering archetypal learning strategies taught by general education teachers (Mills & Clarke, 2017). When students continue to fail at common reading, writing, and spelling instruction, they often become isolated and cognizant of their learning difficulties. These negative academic perceptions can have an impact on dyslexic students. They may start to exhibit undesirable behavior(s) or express their aversion towards academic difficulties, which contributes to low academic achievement and performance (Firth et al., 2013; Stuart & Yates, 2018). Therefore, it is crucial for local, state, and federal educational agencies and organizations to provide general education teachers with proper training in order to ameliorate these inadequacies. Training (i.e., professional development) will prepare general education teachers for implementing effective strategies to support instruction and learning for dyslexic students in an inclusive learning environment (Bernadowski, 2017; Carvalhais & da Silva, 2010; Pit-ten Cate et al., 2018; Shaywitz & Shaywitz, 2020; Washburn et al., 2017).

Review of Relevant Research and Practitioner-Based Literature

Research and practitioner-based literature available at the time of this study provided information that raises a concern regarding teachers who are responsible for providing an inclusive learning environment within a general education setting for students with dyslexia and other disabilities. At the time of this study, inclusive learning environments were considered preferable to educational environments that isolated individuals with a disability from their peers. In an inclusive learning environment, a student with a learning disability such as dyslexia has access to a general education classroom contrary to the former practice of incorporating separate learning environments and academic schedules for individuals with a disability (Byrd &

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Alexander, 2020; Leseyane et al., 2018; Pit-ten Cate et al., 2018; Thwala et al., 2020). Students

with dyslexia form an educational disparity group and are often overlooked due to time, training,

and resources, which prevents the development of inclusive learning environments (Aladwani &

Al Shaye, 2012; Carvalhais & da Silva, 2010; DeRoche, 2013; McMahan et al., 2019; Mills &

Clarke, 2017; Pit-ten Cate et al., 2018; Thwala et al., 2020). Regrettably, the absence of inclusive

learning environments has been a common reality for many dyslexic learners.

Dyslexic learners learn to adapt to their non-inclusive environments through visual or

verbal cues, and an experiential milieu of experiences (Leseyane et al., 2018). These learned

skills cause academic deficits for dyslexic learners because they do not help dyslexic learners

grasp academic content in a general education classroom. Students with dyslexia rely on general

education teachers to teach them effective academic skills so they may be independent in a

general education classroom. Without effective teaching strategies, students with dyslexia

continue to fall further behind in their academics compared to their general education peers

(Mills & Clarke, 2017). Furthermore, students with dyslexia are often cognizant of their

diagnosis and condition and become alienated by their peers and teachers when there is a lack of

awareness and understanding (Firth et al., 2013; Leseyane et al., 2018; Thwala et al., 2020).

Consequently, students with dyslexia who are exposed to foreboding environments where peers

and teachers do not understand dyslexia will also often develop social and emotional problems,

which can further impact their learning outcomes (Leseyane et al., 2018).

Through the reauthorization of the Individuals With Disabilities Education Act (IDEA) in

2015, Congress stated the importance of "improving educational results for children with

disabilities" (U.S. Department of Education, 2022, para. 6) as a crucial degree in the Nation's

policy of equity and inclusion in education (U.S. Department of Education, 2022). Educational

policy and practice at the time of this study resulted in general education teachers being expected

to fulfill expectations of an inclusive learning environment with or without appropriate training

and professional development (Aladwani & Al Shaye, 2012; Byrd & Alexander, 2020; DeRoche,

2013; Merga et al., 2020; Mills & Clarke, 2017; Pit-ten Cate et al., 2018; Shaywitz & Shaywitz,

2020; Thwala et al., 2020; Weiser et al., 2019; Woods & Graham, 2020). Without appropriate

training and professional development, general education teachers have been placed in a

compromising position when they are required to meet the needs of dyslexic learners

(Bernadowski, 2017; Byrd & Alexander, 2020; DeRoche, 2013; Mills & Clarke, 2017; Thwala et

al., 2020; Weiser et al., 2019). A resolution to this dilemma is to ensure general education

teachers receive training and professional development in understanding the intricate needs of

dyslexic learners (Knight, 2017; Leseyane et al., 2018; Mills & Clarke, 2017; Shaywitz &

Shaywitz, 2020; Thwala et al., 2020; Weiser et al., 2019). With appropriate training and

professional development, general education teachers can increase their knowledge and

understanding of effective teaching strategies to give dyslexic learners an opportunity to learn

beside their peers (Byrd & Alexander, 2020; Stuart & Yates, 2018; Washburn et al., 2011;

Weiser et al., 2019).

Local, state, and federal educational organizations often determine educational guidelines

and policies without understanding the actual circumstances within a general education

classroom (DeRoche, 2013; Knight, 2017; Peltier et al., 2020; Pit-ten Cate et al., 2018; Shaywitz

& Shaywitz, 2020; Thwala et al., 2020). Most circumstances reveal general education teachers

receive inadequate time to familiarize themselves with the diverse needs of students with

dyslexia. Teachers are left to figure out how to incorporate the needs of dyslexic learners into a

general education classroom with limited information or support from school administrators or

colleagues (McMahan et al., 2019). Often students arrive and enter a general education classroom for immediate school immersion which limits a teacher's initial capacity to foster an inclusive learning environment. Additionally, teachers are obligated to participate in infrequent or absent collaborative efforts with special education teachers and other supportive educational staff. The success or failure of student learning and instruction depend upon effective working professional relationships between general education teachers and other supportive educational staff (Byrd & Alexander, 2020).

Need for Training and Professional Development

Teachers not trained in inclusive classroom processes are usually overwhelmed and unprepared for the realities and expectations of inclusive classroom environments (Aladwani & Al Shaye, 2012; DeRoche, 2013; Feng et al., 2019; Washburn et al., 2017). Teachers ill prepared for developing inclusive classroom environments are usually ineffective in their instructional strategies as well as classroom expectations. Such teachers regularly struggle with making adaptations to classroom assignments and will often have unrealistic timeframes for students with dyslexia to complete classroom work (Byrd & Alexander, 2020). Subsequently, teachers may believe students with dyslexia require extra time and attention from classroom staff in order to be successful in a general education setting (Thwala et al., 2020). Additionally, inclusive learning environments require teachers to deliver effective teaching strategies to enrich learning and instruction for dyslexic learners (Carvalhais & da Silva, 2010). Consequently, general education teachers may lack appropriate support, guidance, and access to regular training and professional development opportunities that would enhance their understanding of students with dyslexia and how to include them in a general education classroom (McMahan et al., 2019). Teachers that lack proper instruction in how to include dyslexic students in a general education

setting, when isolated and lacking support, will often develop a propensity for impulsive and inconsistent teaching strategies. Teacher isolation usually causes instructional deficiencies leading to poor academic achievement and performance of dyslexic students (DeRoche, 2013; Thwala et al., 2020).

Particularly, when teachers are unprepared and isolated, they inadvertently deliver inadequate instructional strategies which affects the education of students with dyslexia. Inadequate instructional strategies lead to further academic obstacles, which can affect a student's learning for a lifetime (Knight, 2017; Leseyane et al., 2018; Mills & Clarke, 2017; Pitten Cate et al., 2018). Students with dyslexia can also become disengaged and isolated from their teachers when inadequate instructional strategies are accompanied with adverse teacher attitudes (DeRoche, 2013; Thwala et al., 2020). These encumbered attitudes and ineffective teaching strategies are usually established when teachers are isolated. Isolated teachers require appropriate support and guidance from their peers and administrators to foster inclusive learning environments (Carvalhais & da Silva, 2010; Thwala et al., 2020). Consequently, if we disregard the needs of general education teachers, students with dyslexia may be led to further educational obstacles (DeRoche, 2013; Thwala et al., 2020).

To ameliorate unpreparedness and isolation of teachers in general education resulting from unrealistic expectations, teachers will require direction and ongoing support from administrators and peers in regards to teaching students with dyslexia. This support often takes the form of training, professional development, and access to materials to use within a general education classroom. By providing direction, support, and access to materials, we equip general education teachers to provide students with dyslexia with an inclusive learning environment (Knight, 2017; McMahan et al., 2019; Mills & Clarke, 2017). With these continuous supports,

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teachers can and will enrich educational achievement and performance of students with dyslexia. More importantly, the involvement of school administrators can also enhance student achievement and performance outcomes. School administrators can participate in the training and professional development process, so they understand what is needed and can encourage teachers to promote an effective inclusive learning environment for students with dyslexia (Carvalhais & da Silva, 2010; Feng et al., 2019; McMahan et al., 2019; Thwala et al., 2020). School administrators can participate in their teachers learning process by engaging teachers in conversations and reflecting with teachers on actual circumstances in general education classrooms within their school. This will empower teachers to fulfill their professional duties as a general education teacher and deter feelings of inadequacy when working with students with dyslexia (Leseyane et al., 2018).

At the time of this study, research and practitioner-based literature recognized the need of training and ongoing professional development for general education teachers. One role of school administrators and leaders (i.e., local, state, and federal) has been to provide an effective training and professional development framework for general education teachers (Shaywitz & Shaywitz, 2020). The framework should encompass effective teaching strategies and a clear definition of an inclusive learning environment that represents the best interests of students with dyslexia.

At the time of this study, research literature provided two different definitions of an inclusive learning environment based on teacher discussions. The first definition of an inclusive learning environment ensures students in general education classrooms receive additional assistance while also encouraging classroom independence to promote self-efficacy skills. The second definition favors the participation of students with dyslexia beside their peers while also

attending to their individual learning style and educational needs (DeRoche, 2013). Both

definitions focus on student encouragement and participation in inclusive learning environments.

Teachers may use their districts' definitions of inclusion to create inclusive classroom

environments for dyslexic students to ensure students have equitable access to learning

(Leseyane et al., 2018). Inclusive learning environments combined with effective instructional

strategies will establish an educational framework necessary for teachers to enhance learning for

dyslexic students in general education.

Common Approaches to Addressing the Problem

According to Bernadowski (2017), dyslexia has been defined as "a neurological learning

disability differentiated by difficulties with word recognition, spelling, and decoding." (p. 52).

Due to the intricacies of dyslexia, it is understandable how general education teachers become

ineffectual in their abilities to provide effective instructional strategies in inclusive learning

environments. General education teachers question how they will fulfill expectations of

accountability from local, state, and federal guidelines and policies when they do not fully

understand how to meet the needs of learners with dyslexia (Bernadowski, 2017; DeRoche,

2013; Peltier et al., 2020; Shaywitz & Shaywitz, 2020; Weiser et al., 2019). A resolution to this

predicament is to ensure general education teachers receive training and professional

development in understanding the intricate needs of learners with dyslexia. Through training and

professional development, general education teachers increase their knowledge and

understanding of effective teaching strategies giving learners with dyslexia an opportunity to

learn beside their peers (Carvalhais & da Silva, 2010; Stuart & Yates, 2018; Thwala et al., 2020;

Woods & Graham, 2020).

The research and practitioner-based literature available at the time of this study noted a few effective teaching strategies for students with dyslexia. Strategies to promote accepting dyslexic students in inclusive classroom environments included the implementation of student-centered approaches to teaching, the need for multi-sensory training for teachers, and the receipt of ongoing professional development for teachers. The first strategy supports the need for teachers to change their pedagogical beliefs and approaches to teaching from teacher-centered to student-centered (Aladwani & Al Shaye, 2012; Bernadowski, 2017; Pit-ten Cate et al., 2018). By using student-centered approaches to teaching, teachers involve students in their learning and utilize student needs and capabilities to facilitate learning and instruction in a general education environment. Teachers can offer student-centered learning by providing opportunities for learning through different modes (i.e., visual, oral, kinesthetic/physical, or auditory) of expression. By providing students with diverse ways to express their understanding of classroom content, students become active participants in their learning, which cultivates an inclusive learning environment (Pit-ten Cate et al., 2018). The results of a student-centered approach to teaching (or learning) in an inclusive classroom environment for students with dyslexia will genuinely enhance their learning experiences and provide dyslexic students with further classroom opportunities.

The second strategy supports the need for teachers to be trained (and certified) in a multi-sensory learning program such as the "Orton-Gillingham" approach or another designated multi-sensory learning program based on research evidence. Individuals with dyslexia inherently have difficulty understanding or remembering rules associated with phonological processing and phonological memory commonly found in a general education curriculum and materials within general education classrooms (Knight, 2017; Leseyane et al., 2018; Sayeski et al., 2018;

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Shaywitz & Shaywitz, 2020; Stuart & Yates, 2018). A multi-sensory approach to learning

focuses on using a student's unique learning style (i.e., visual, kinesthetic/physical, auditory, or a

combination of the three) in connection with their episodic memory (Bernadowski, 2017).

Researchers and professionals have successfully recognized the use of a multi-sensory approach

to help students with dyslexia retain previous academic concepts and improve future learning.

When using the Orton-Gillingham approach (and most multi-sensory learning programs),

teachers are required to work individually with students (Bernadowski, 2017; Mills & Clarke,

2017; Sayeski et al., 2018). Through a multi-sensory approach, a teacher provides direct and

explicit instruction to a student through multisensory methods (i.e., auditory, visual, verbal,

physical/kinesthetic; Johnston, 2019; McMahan et al., 2019; Sayeski et al., 2018; Woods &

Graham, 2020). Finally, a teacher will continuously assess a student's understanding of content

being taught through the designated multi-sensory program the teacher is using and expand

further instruction based on a student's level of knowledge.

The last effective strategy for teaching students with dyslexia supports the need for

ongoing professional development for teachers. According to Mills and Clarke (2017), educators

are ambiguous when it comes to addressing instruction and learning for dyslexic learners.

However, ongoing professional development has been proven to have efficacious results for

teachers and their dyslexic students in general education classrooms (Firth et al., 2013; Knight,

2017; Mills & Clarke, 2017; Pit-ten Cate et al., 2018; Thwala et al., 2020). Professional

development provides teachers with knowledge and understanding of the characteristics of

dyslexia, academic capabilities and difficulties faced by students with dyslexia, and best

practices in selecting and implementing intervention-based approaches to use with students with

dyslexia (Firth et al., 2013; Hudson & English, 2016; McMahan et al., 2019; Mills & Clarke, 2017).

Research on Effective Teaching Strategies

A literature review completed by Stuart and Yates (2018), encompassed research from 2003-2018 from four different groups. The literature review emphasized the following effective teaching strategies found in the research. The first group's recommendation was for teachers to evaluate a student's individual needs and then develop an individualized plan based on evaluation results. The second group's recommendation was to teach students according to their learning style. The third group's recommendation focused on implementation of a multi-sensory approach to teaching. The final group recommended general education teachers work on teaching students self-efficacy skills to manage adversity and to maintain flexibility in everyday situations (Stuart & Yates, 2018). Each of these groups confirmed the aforementioned teaching strategies recommended in the previous section of this chapter titled "Common Approaches to Addressing the Problem" but indicated teaching strategies do not necessarily require explicit interventions (Stuart & Yates, 2018).

Multisensory Approach to Addressing Dyslexia

Only a trained and certified teacher can implement a multisensory approach to teaching. A multisensory approach creates a teaching framework complementary to standard teaching practices at the time of this study by adapting learning for students with dyslexia to approach their learning through various pathways—auditory, visual, verbal, physical/kinesthetic, or a combination of the aforementioned styles (Bernadowski, 2017; Ritchey & Goeke, 2006). When certified teachers choose to implement a multisensory approach to teaching procedures, it enhances the learning environment of an entire class and benefits dyslexic and non-dyslexic

learners alike. Multisensory training allowed teachers to enhance learning for individuals with dyslexia by minimizing the use of accommodations (Bernadowski, 2017). As a result, when teachers use a multisensory approach to teaching, they ensure they deliver comprehensive components of a selected curriculum and needed material for students to develop key skills they can use independently. As a student progresses with a given curriculum and available materials, only a certified teacher can confirm a student's mastery of the content being taught before providing further components of the curriculum and materials to the student (Ritchey & Goeke, 2006; Sayeski et al., 2018).

The Orton-Gillingham approach is the earliest of the multisensory approaches created by Dr. Samuel Orton and Anne Gillingham, educators during the 1930s and 1940s (Rose & Zirkel, 2007; Sayeski et al., 2018). Orton and Gillingham started the multisensory approach movement, which helped develop many of the multisensory approach systems (i.e., programs) used in education at the time of this study. Orton and Gillingham believed the regularity of a multisensory approach coupled with literacy instruction supported students with severe dyslexia (Rose & Zirkel, 2007), and their approach focused on teaching learners with dyslexia phonics through "phonology and phonological awareness, sound-symbol correspondence, syllables, morphology, syntax, and semantics" (Ritchey & Goeke, 2006, p. 171). There are dual parts to the Orton-Gillingham approach involving a learner and a teacher. The student's part encompasses how a student will learn to listen, distinguish, and create phonemes in order to form and break words apart. The teacher's part encompasses presenting various steps of phonemic awareness to a student. As the student advances through the Orton-Gillingham program, through a step-by-step manner, they begin to improve upon their literacy skills (i.e., vocabulary, spelling, and comprehension; Rose & Zirkel, 2007).

Once teachers receive appropriate training, professional development, and access to materials, they become confident in their professional ability to teach students with dyslexia effectively (Bernadowski, 2017; Byrd & Alexander, 2020; Feng et al., 2019). The literature review for this study highlighted student data, communication, and collaboration are effective areas teachers can incorporate within inclusive learning environments to meet the needs of dyslexic learners. The first area focused on use of *student data* to make informed decisions about student learning and teacher instruction. Student data allows teachers to analyze areas of need and provide effective classroom planning to meet the needs of students with dyslexia (Mills & Clarke, 2017). The second area to incorporate in inclusive learning environments, *communication*, focused on ensuring communication of general education teachers and other educators (i.e., special education teachers) within the academic life of dyslexic learners were able to provide a student with additional resources to foster academic achievement and performance (Byrd & Alexander, 2020; Mills & Clarke, 2017). The last area to include in inclusive learning environments, *collaboration*, focused on the partnership between general education teachers and other educators involved in a dyslexic learner's academic life and in delivering accommodations which also addressed academic achievement and support (Byrd & Alexander, 2020; Mills & Clarke, 2017; Pit-ten Cate et al., 2018; Thwala et al., 2020). As a result, teachers who received training and professional development in teaching dyslexic learners were able to select effective strategies to implement in their general education classrooms to promote learning environments conducive to teaching students with dyslexia effectively (Bernadowski, 2017; Byrd & Alexander, 2020; Feng et al., 2019).

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Conclusions

In order for students with dyslexia to be successful in general education classrooms, general education teachers must have acceptable training and professional development in teaching dyslexic students in order to provide a learning environment conducive to including and teaching dyslexic students effectively (Carvalhais & da Silva, 2010; Mills & Clarke, 2017; Pit-ten Cate et al., 2018; Stuart & Yates, 2018). Additionally, general education teachers can enhance their supports through collaborative team efforts with other educational team members (i.e., special education teachers and school administrators; Byrd & Alexander, 2020; Pit-ten Cate et al., 2018; Thwala et al., 2020). Through collaborative team efforts, general education teachers can use ongoing training and professional development opportunities to adapt their general education curriculum and materials available for students with dyslexia to make for an inclusive learning environment (Byrd & Alexander, 2020; Merga et al., 2020). Lastly, available research reports convey the importance of evidence-based training for teachers in a general education setting so that teachers can apply accurate methods and practices to their general education classrooms and thus ensure students receive appropriate resources to enhance their learning opportunities and to promote academic achievement and performance (Knight, 2017; Pit-ten Cate et al., 2018; Thwala et al., 2020).

The aforementioned areas that emerged from the literature review as important for students with dyslexia to be successful were intertwined with the themes of this study. The central theme of this study was to address teacher access to intervention supports and materials in providing instruction and learning to individuals with dyslexia. The sub themes of the study provided an awareness for enhancing teachers' personal and professional experiences when

working with individuals with dyslexia and the need for further training of general education teachers required to provide instruction and learning to individuals with dyslexia.

Overview – Research Approach to Address the Problem

The research approach taken to address the problem was a mixed methods approach with general education teachers participating. This approach was appropriate to address the problem of practice because a mixed methods approach gathered different forms of data. Data included a needs assessment and a program evaluation as it relates to training and professional development practices for general education teachers. Through interviews, surveys, and access to informational content, the researcher determined general education teachers can develop an awareness and understanding of dyslexia and ways to support an inclusive classroom environment.

This research took place with a volunteer group of 10 general education teachers instructing Grades 5-8. Students were not part of this research, but teachers may have used student work examples to identify areas of need and to measure the impact of strategies used. This research took place through electronic, individual, and asynchronous formats. Electronic formats required general education teachers to complete a qualitative survey before and after the study; an individual format required teachers to meet with the researcher to identify areas of need in their classrooms through interviews; and lastly an asynchronous format required teachers to complete a series of presentation modules providing general education teachers with background information of dyslexia and ways to transform a general education classroom into an inclusive setting.

General education teachers who participated in this study were selected on a volunteer basis. A research proposal application was submitted to the Institutional Review Board (IRB) of

the researcher's university for approval. The researcher accommodated schedules of general education teachers and ensured the study did not interfere with their employment. A limitation to this research approach was the study concentrated on one region (school district) versus many regions (multiple school districts). A study involving multiple school districts might have allowed the researcher to gain greater access to multiple perspectives.

Determination of the reliability and validity of data gathered in this study depended upon analysis of participant responses, use of general education teacher interviews to adapt "presentation modules" for future use, and an analysis of whether or not presentation modules developed as a result of this research provided participants with a better understanding of specific learning disabilities, like dyslexia. The initial survey and interviews of participating teachers helped the researcher identify further topics beyond teachers working with students with dyslexia. These topics could possibly result in more presentation modules in the future that help teachers work with other types of disabilities in their classrooms. The researcher analyzed initial surveys and interview responses to tailor particular topics on dyslexia expressed by general education teachers into a presentation module on dyslexia in order to extend available knowledge on dyslexia and provide teachers with instructional strategies supporting students with dyslexia. The last part of the study focused on evaluating teacher knowledge and teacher responses in regard to teacher preparation programs.

ARTIFACT II

RESEARCH APPROACH

Artifact II outlines the approach implemented by the researcher to gather a current (at the time of this study) understanding of general education teachers' training and preparation for working with individuals with dyslexia in the general education classroom. The selected group of participants were teachers providing instruction and learning to students in Grades 5-8 in the general education classroom. In order to gather a quantitative and qualitative understanding of general education teacher training and preparation at the time of this study, the researcher utilized surveys and interviews to gather data. Thus, the use of both quantitative and qualitative methods of research guided the researcher in this study. This is called a mixed methods approach (Creswell & Guetterman, 2019).

The selected mixed methods approach led the researcher to utilize an explanatory sequential design. An explanatory sequential design "consists of first collecting quantitative data and then gathering qualitative data to help explain or elaborate on the quantitative results" (Creswell & Guetterman, 2019, p. 553). By doing this, the researcher was able to identify the nature of the problem in two phases: (a) through the analysis of quantitative results in the first phase, and (b) analysis of qualitative results in the second phase. During the first phase of the research design, the researcher prioritized quantitative data collection and analysis through the use of surveys. In the second phase of the research design, the researcher prioritized qualitative data collection by interviewing participants to enhance the "results from the quantitative data"

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(Creswell & Guetterman, 2019, p. 554). So, the use of this design required the researcher to collect quantitative and qualitative data in sequence (Creswell & Guetterman, 2019).

The researcher conducted a review of relevant research and practitioner-based literature. Literature was available through research organizations, publications on the topic of dyslexia, and scholarly articles. This literature provided an array of information in regard to teacher preparation programs (i.e., higher education degree programs, training, and professional development) at the time of this study. The researcher focused on general education classrooms at the elementary grade levels (i.e., kindergarten through fourth grades) because there was little information on teacher preparation programs for teachers who taught in higher elementary grade levels (i.e., fifth and sixth grades) and middle school grade levels (i.e., seventh and eighth grades). This may be the result of past and recent research focusing on dyslexia understanding and awareness at lower elementary grade levels. To fill this gap in research on dyslexia, the researcher conducted the following study to ascertain general education teacher knowledge and understanding of dyslexia as a result of completed teacher preparation programs at the time of this study. The results revealed teacher preparation programs at the time of this study and general education teachers' understanding and awareness of individuals with dyslexia in late elementary and middle school grade levels. The researcher hoped to help general education teachers feel confident and comfortable providing instruction and learning opportunities to individuals with dyslexia.

Research Questions

This study will explore the following questions:

1. Are general education teachers prepared to teach individuals with dyslexia based on their university program preparation?

2.   Are general education teachers prepared to teach individuals with dyslexia based on

the training and professional development provided by their school district?

Pre-Survey and Post-Survey

Questions for a pre-survey, post-survey, and interviews were created based upon relevant

research and practitioner-based literature. The pre-survey explored the following three areas: the

Fundamental Knowledge of Dyslexia, General Education Teacher Training and Professional

Development in Dyslexia, and *In the General Education Classroom*. Before general education

teachers work with students whether recognized or unrecognized as individuals with dyslexia,

they must have a clear understanding and awareness of what causes (i.e., neurobiology behind)

dyslexia and the signs and symptoms of dyslexia (Leseyane et al., 2018). So the first question on

the pre-survey dealt with teachers' knowledge of dyslexia. The next pre-survey question covered

whether general education teachers had received training and professional development in

dyslexia. General education teachers who have training and professional development in dyslexia

are equipped to incorporate effective teacher practices and strategies into their general education

classrooms (Byrd & Alexander, 2020; Knight; 2017; Pit-ten Cate et al., 2018). The last survey

question focused on whether general education teachers were able to implement

accommodations and modifications for dyslexic students effectively in their classrooms,

effectively implement teaching practices or strategies that dyslexic students could learn from,

and whether they received support from administrators to provide an inclusive classroom

environment to individuals with dyslexia (Byrd & Alexander, 2020). The pre-survey also

contains two open-ended questions asking participants about their thoughts and feelings about

teaching dyslexic students in a general education classroom and asking participants if their

training prepared them to teach dyslexic students.

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In the post-survey, the researcher followed up responses from the pre-survey through the following areas, *A Better Understanding* of the fundamental knowledge of dyslexia, *Sharing Training Needs,* and *General Education Teacher Classroom Confidence*. The question on *A Better Understanding* was looking at whether learning modules provided to participants enhanced their fundamental knowledge of dyslexia. The next question, on *Sharing Training Needs*, provided the researcher with an understanding of the training and professional development needs of general education teachers (participants) within a school district and to which groups (i.e., colleagues/co-workers, building-level administration, and district administration) participants might share their need for training and professional development with. The last pre-survey question asked participants to analyze the level of confidence they had after completing the learning modules in regard to providing an inclusive classroom environment to individuals with dyslexia. The post-survey ended with two open-ended questions. One asked participants about their thoughts and feelings on teaching dyslexic students and whether those thoughts and feelings had changed after presentation modules provided to participants. The other asked participants if they planned on seeking further training on dyslexia.

Research Design

A mixed methods research approach through the use of an explanatory sequential design was conducted to obtain information on fundamental knowledge, training, and professional development of participants at the time of this study and on classroom applications in use at the time of this study in regard to general education teachers providing instruction to and enabling learning of individuals with dyslexia. Through the explanatory sequential design, the researcher identified common areas of need expressed by teacher participants in a general education classroom when providing instruction and enabling learning of students with dyslexia (Creswell

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& Guetterman, 2019). In the first phase of the explanatory sequential design, participants completed a pre-survey and a post-survey. In the second phase, participants completed an interview. In-between phases, participants completed two learning modules (i.e., *Dyslexia Awareness and Understanding from a Student's and Teacher's Perspective* and *Dyslexia and the General Education Classroom Teaching Strategies and More)*.

In the data analysis section of this study, the researcher kept results of the explanatory sequential design distinct in order to use qualitative results to provide an interpretation of quantitative data results (Creswell & Guetterman, 2019). The pre-survey was divided into two sections: the first three questions were closed-ended questions (used a Likert-type scale) that resulted in quantitative data. The last two questions were open-ended questions that resulted in qualitative data. The post-survey was also divided into two sections with similar type questions. A final questionnaire was developed for interviews. An explanatory sequential design occurs in two phases, during the first phase there is a collection and analysis of quantitative data followed by results. The researcher will "determine quantitative results to explain" (Creswell & Guetterman, 2019, p. 552). For this study, the researcher analyzed quantitative data first. Next, during the second phase of an explanatory sequentially designed study, there is a collection and analysis of qualitative data followed by qualitative results. In this study, the researcher analyzed qualitative data last. Lastly, the researcher will "interpret how qualitative data explains quantitative results" (Creswell & Guetterman, 2019, p. 552). Therefore, for this study, the final step to analyzing the data collected was to compare results of qualitative data to results of quantitative data and see if any conclusions could be drawn.

The use of cross-sectional surveys in the mixed method approach used in this study provided the researcher with an understanding of general education teachers' perspectives and

opinions in regard to their fundamental knowledge on dyslexia, training and professional development they received and classroom applications they were using when working with individuals with dyslexia "at one point in time" (Creswell & Guetterman, 2019, p. 386). The advantage of comparing cross-sectional surveys is it provides a researcher with an opportunity to collect points of view from general education teachers in a "short amount of time" (Creswell & Guetterman, 2019, p. 386). Additionally, the researcher used individual interviews to gather further information and insight from general education teachers' thoughts and perspectives in relation to their university program preparation, completion of learning modules in the study, and previous or present school district preparation in regard to providing learning and instruction to individuals with dyslexia (Creswell & Guetterman, 2019). Lastly, the researcher utilized surveys and interviews to identify teacher preparation programs at the time of this study within a local school district by analyzing the trends and program evaluations of participants during this research (Leseyane et al., 2018).

The use of a mixed methods approach to research was appropriate to address the problem of practice because this type of approach allowed the researcher to develop a needs assessment based upon teacher preparation of participants at the time of this study (i.e., university programs, local district programs, local education agency programs, and state education agency programs) and program requirements as they related to the need for further training and professional development practices for general education teachers who provide instruction and learning to individuals with dyslexia (Creswell & Guetterman, 2019). By the end of the study, general education teacher participants should have increased their understanding and awareness of dyslexia and added to their instructional strategies repertoire.

Participants

The finalized list of participants included 10 general education teachers who volunteered for the study from a non-rural school district. A school district is considered non-rural when it has more than 1,000 students (North Dakota Department of Public Instruction, n.d.a). In order to conduct research in the school district selected to participate in this study, the researcher sought approval from the school district's superintendent and the University of North Dakota's Institutional Review Board (IRB). Online surveys were conducted with 10 general education teachers based upon their teaching positions. In addition, out of the ten general education teachers, six teachers opted to complete extended interviews (see Appendix A). The researcher's rationale for a sample size of 10 general education teachers was based on the analysis process of qualitative and quantitative data. The researcher wanted to ensure the thoughts and perceptions of general education teachers were acknowledged and reported fully.

General education teachers have a distinctive role in general education classrooms; they provide instruction to students with and without disabilities in accordance with state and federal mandates (Gabriel, 2018; Gearin et al., 2020; Jones et al., 2019; Richardson, 1996). Because of this, the researcher sought to focus on understanding the reality of preparation programs for general education teachers from the perspective of general education teachers. General education teachers are privy to their own teacher preparation program journeys and are able to provide a researcher with a personal account of classes received through teacher preparation programs from their respective degree programs and school districts.

Before initial IRB approval in April of 2022 (Appendix B), the researcher developed a pre- and post-survey (see Appendices C and D) and two information modules (see Appendices E and F). Based upon data from four participants, the researcher pursued IRB approval of an

addendum (Appendix G) to gather further qualitative data. This resulted in the researcher

developing a set of additional questions for interviews (see Appendix A). Per the IRB *Study*

Information Sheet (Appendices B and G), participants were notified their responses were to be

recorded anonymously to ensure participants provided truthful responses on their surveys and

during their interviews.

       The following demographic information about participants was collected: educational

background (e.g., bachelor's or master's degree completed), combined number of degrees held

(e.g., participants would select an amount ranging from three choices 1-2, 3-4, or 5 +), whether

the participant planned on enrolling or was currently enrolled in a degree program (Figure 1),

years of general education teacher experience (Figure 2), expiration of general education teacher

licensure (Figure 3), and completed professional development credits (Figure 4).

       Figure 1 illustrates whether participants were planning to enroll or were currently

enrolled in a degree program. Figure 2 shows years of experience a participant had in general

education.

Figure 1

Planning to Enroll or Currently Enrolled in a Degree Program

Are you planning on enrolling/or are you currently enrolled in a degree program?
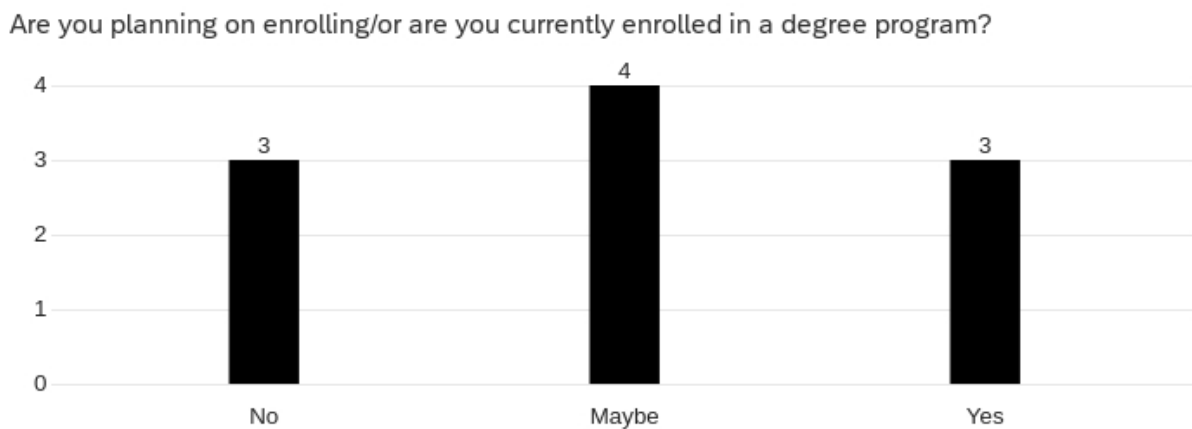
Figure 2

Years of General Education Teacher Experience

How many completed years of general education teaching experience do you have?
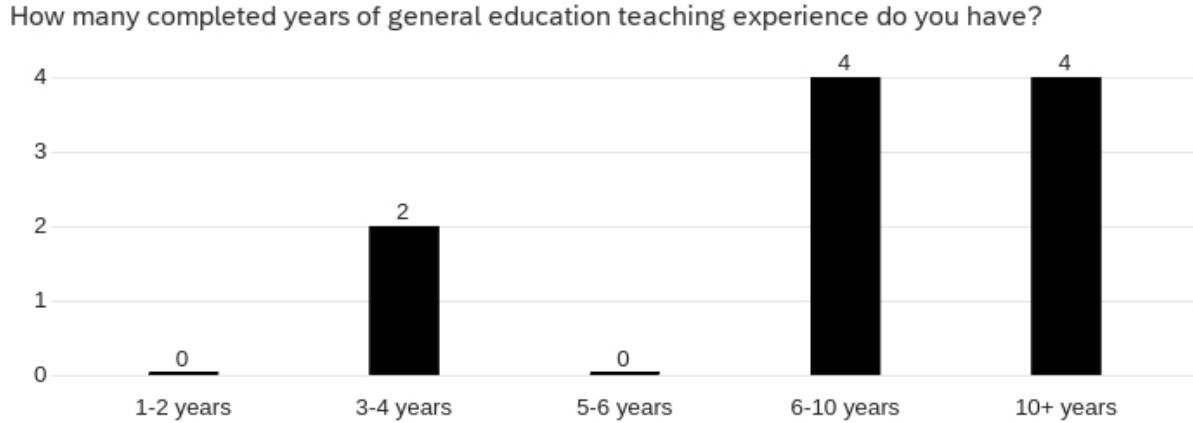
Figure 3 illustrates how many years a participant had until their general education teacher license expired, and Figure 4 shows total professional development credits participants had completed.

Figure 3

Years Until General Education Teacher License Expiration

When does your teaching license in ND expire?
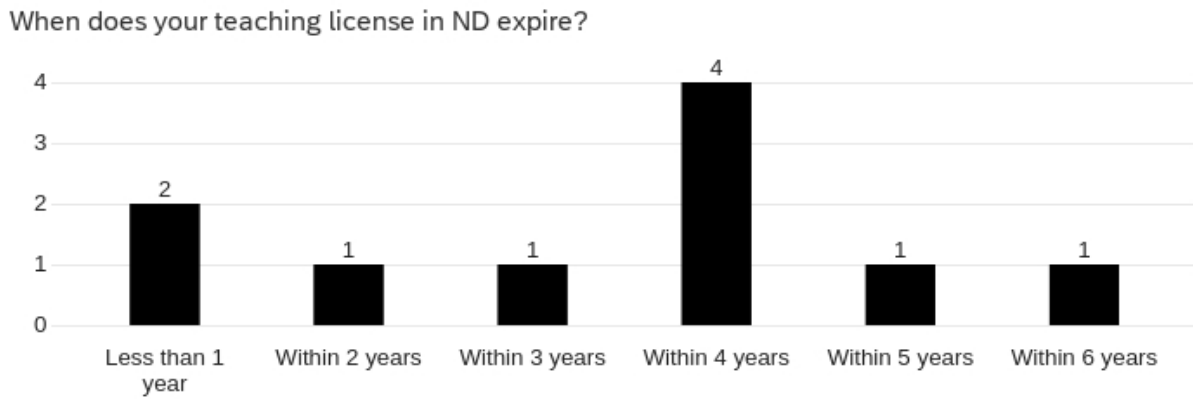
Figure 4

Completed Professional Development Credits

How many professional development credits have you completed?

Note. Eight out of ten participants completed six (or more) professional development credits.

Information from Figures 1 through 4 displays the teacher preparation milieu held by participants at the time of this study. This data compilation held by participants in the above figures (Figures 1, 2, 3, and 4) establishes some of the requirements general education teachers must possess in order to provide instruction and establish learning in general education classrooms. No other identifying demographic information was collected nor analyzed. The participants' years of experience, enrollments in further degree programs, expiration of licensure, and completed professional development credits varied.

Recruitment

The non-rural school district selected for this study was based upon the researcher's access to a population of general education teachers providing instruction to and enabling learning of students in the fifth through eighth grade levels. Selected participants in the study had to be a teacher in a general education classroom providing instruction and enabling learning to fifth through eighth grade students within an approved non-rural school district. Teachers in general education classrooms providing instruction to and enabling learning in grades

kindergarten to fourth grade levels, ninth to twelfth grade levels, and special education teachers were excluded from this study. General education teachers were selected on a volunteer basis. To ensure the study did not interfere with a general education teacher's roles and responsibilities, the researcher provided an asynchronous format for participants to complete the study. The selected participants in the study met the aforementioned criteria to participate in the study.

Upon approval from the University of North Dakota IRB, the researcher emailed a correspondence (see Appendix H) to a group of building administrators overseeing fifth through eighth grade general education teachers within the non-rural district selected to participate in this study. The non-rural building administrators responded and arranged for the researcher to present the study within their designated buildings. During each scheduled presentation, the researcher displayed a digital flyer (see Appendix I) for the study and the initially approved IRB Study Information Sheet (see Appendix B) from the University of North Dakota. Furthermore, during the presentation, general education teachers were notified their students would not be part of the study, but general education teachers were informed they could use student work examples to identify areas of need and to measure the impact of strategies used during the study. In order to accommodate the full schedules of general education teachers, participants were allowed to complete the study asynchronously. Therefore, participants interested in participating in the study were provided a checklist to complete the study asynchronously (see Appendices J and K).

Research Environment

Participants completed the study through an asynchronous format. Participants were provided a checklist to complete the study (see Appendices J and K). Participants completed the study in the following order: (a) pre-survey, (b) watch Module 1: Dyslexia Understanding and Awareness, (c) Watch Module 2: Dyslexia and the General Education Classroom, (d) post-

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survey, and (e) email the researcher to schedule a time to complete the interview, in-person or over the phone. The fifth item in the checklist was added upon approval of the IRB amendment in October 2022.

Take note of Appendix J; it is a checklist for the initial IRB approval in April 2022. During the first initial IRB approval, four participants from the non-rural school district elected to participate in the study. Whereas Appendix K is a checklist for the amended IRB approval on October 11, 2022. While waiting for the IRB approval of the amended study, an additional six participants from the participating non-rural school district elected to participate in the study. To incentivize participants to participate in the study, participants had the option to be placed in a drawing to receive a gift card. Based on the initial IRB approval, the researcher added an additional incentive in the form of a gift card for participants who opted to complete an interview with the researcher. The interview questions with the researcher were completed via Microsoft Teams or over the phone with each individual participant. The researcher ensured participants had access to interview questions beforehand, and the researcher provided a description of the interview process to each person interviewed. Interviews were conducted in a non-distracting environment and in a format (i.e., Microsoft Teams or phone call) chosen by the participant. Each participant completed their interviews within 20 minutes.

Data Analysis

The researcher utilized Qualtrics software to create pre- and post-surveys for the study. Within the Qualtrics program, the researcher exported quantitative data into an Excel spreadsheet. Within the Excel spreadsheet the researcher created a 3-D column chart and table showing percentages of responses of each subcategory within a question. (see Table 5 through Table 8) based on the sum of responses received. According to Creswell and Guetterman (2019),

the use of cross-sectional surveys allows researchers to collect data during "one point in time" (p. 386) to either measure attitudes at that point in time, practices, community needs, or program evaluations. The purpose of the surveys were to evaluate teacher preparation programs participants completed before they started teaching and how participants felt about their training after viewing the modules on dyslexia provided to them.

Within the Qualtrics surveys there were two open-ended questions at the end of each pre- and post-survey for participants to answer anonymously and in their own words. The pre-survey asked participants the following two open-ended questions:

- What are your thoughts and feelings about providing learning and instruction to students with dyslexia in a general education classroom?
- How has your educational background, training, and professional development prepared you to provide learning and instruction to students with dyslexia in a general education classroom?

After participants completed the learning modules, participants completed the post-survey which asked participants the following questions:

- How have your thoughts and feelings changed as you provide learning and instruction to students with dyslexia in a general education classroom?
- Do you plan on seeking further training or professional development opportunities to address students with dyslexia in a general education classroom?

These questions provided the researcher with qualitative data. Based on results of this qualitative data, collected within the initial research design approved by the IRB on April 10, 2022, the researcher made the determination further data collection was needed to understand the preparation programs teacher participants had completed. Therefore, the researcher added the

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collection of data through interviews to the research design. Interview questions can be seen in Appendix A. Six participants completed interviews with the researcher; interview questions asked participants to reflect, compare, and share their thoughts on teacher preparation programs for teachers in general education classrooms. Interview questions asked participants to consider their university programs, previous or present school districts, and local and state agencies as a basis for their responses. The researcher utilized a laptop to record participants' responses and informed participants their responses to interview questions were being typed during the interview.

Responses from the interviews provided the researcher with a further understanding of general education teacher preparation programs. Participants' responses corresponded with reports available in literature and research in regard to general education teacher preparation programs. The researcher's background and experience in general education and special education classrooms and her perceptions of dyslexia did not alter or interfere with her data analysis results in regard to viewpoints of participants in relation to the needs (i.e., materials and resources) of individuals with disabilities.

A thematic data analysis was the suitable option to analyze open-ended questions from pre- and post-surveys and from interview questions because thematic analysis expanded on quantitative data results and allowed the researcher to explore emerging themes derived from participants' responses (Creswell & Guetterman, 2019). The coding analysis process consisted of the researcher reviewing each participant's response by reading through the entirety of all the responses by question, then identifying common key words in regard to their thoughts and perceptions, and then organizing those key words into common themes. The purpose of utilizing

a thematic analysis was to evaluate teacher preparation programs at the time of the study in one non-rural school district.

Results: A Review of General Education Teacher Training and Preparation

Participants completed this study, which included a pre-survey, post-survey, and personal interviews during the Spring 2022 through the Winter 2023. An initial group of participants completed their pre-surveys and post-surveys during the month of May. A second group of participants completed their pre-surveys, post-surveys, and personal interviews during the months of December and January. Pre-surveys, post-surveys, and interview questions were focused on answering whether general education teachers were prepared to teach individuals with dyslexia in general education classrooms based on their university programs and training and professional development provided by their school district.

Data from surveys were analyzed; the researcher examined general education teachers' knowledge and understanding of dyslexia, thoughts and feelings, and teaching practices they were using at the time of this study when providing instruction to and enabling learning in individuals with dyslexia in a general education classroom. The researcher assumed teaching practices were based on participants' general education teacher training and preparation and their knowledge of dyslexia. Furthermore, the post-survey asked general education teachers whether they would seek further training or professional development opportunities to teach individuals with dyslexia in their general education classrooms after this study was concluded. Based upon their response to this first question, it was hoped general education teachers would share their need for general education teacher training and preparation in their school district. Results of surveys will be further discussed in combination with results of the data analysis of open-ended questions from surveys and interview questions.

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For open-ended questions from surveys and interview questions, the researcher employed a thematic analysis of responses and identified the following themes: personal and professional experience when working with individuals with dyslexia, further training required to provide instruction and learning to individuals with dyslexia, and access to intervention supports and materials in providing instruction and learning to individuals with dyslexia. Each of the themes are explained in the order data was collected and provides an understanding of the need for general education teacher training and preparation. These findings will provide school districts and state education programs with an understanding of the need for training and preparation of teachers to teach individuals with dyslexia in general education classrooms.

Quantitative Results

The following tables represent data gathered from pre- and post-surveys. Together, pre- and post-surveys asked a total of eighteen questions divided into six main topics. The first three topics from the pre-survey were, "Fundamental Knowledge of Dyslexia" (Figure 5)*,* "General Education Training and Professional Development in Dyslexia" (Figure 6), and "In your [the participants'] classroom, are you . . . ." (Figure 7). For the post-survey, the second three topics were, "I have a better understanding . . . ." (Figure 8), "I will share my need for training and professional development with . . . ." (Figure 9), and "I feel confident in . . . ." (Figure 10). A 5-point Likert scale was used to gather participant responses for three questions or queries within each topic. Results for the quantitative portion of pre- and post-surveys are indicated below.

Pre-Survey

Figure 5 represents data collected from participants in regard to "Fundamental Knowledge of Dyslexia." In this topic, a 5-point Likert scale was used to collect responses. Response options included: *not knowledgeable at all*, *slightly knowledgeable*, *moderately*

knowledgeable, *very knowledgeable*, and *extremely knowledgeable*. For the first question, 80%

of respondents indicated they were *moderately knowledgeable*" in their "Understanding and

Awareness of Dyslexia." In the second question, 78% of respondents indicated they were

moderately knowledgeable in the "Conditions of Dyslexia." For the third question, 44% of

respondents indicated they were *slightly knowledgeable* and 44% indicated they were *moderately*

knowledgeable in the "Signs and Symptoms of Dyslexia." Based on participants' responses,

general education teachers from the non-rural school district participating in this study have a

slightly knowledgeable to moderately knowledgeable understanding of dyslexia.

Figure 5

Pre-Training Module Results for Fundamental Knowledge of Dyslexia

	Not Knowledgeable At All	Slightly Knowledgeable	Moderately Knowledgeable	Very Knowledgeable	Extremely Knowledgeable
■ Understanding	0%	20%	80%	0%	0%
■ Conditions	11%	11%	78%	0%	0%
■ Signs & Symptoms	0%	44%	44%	11%	0%
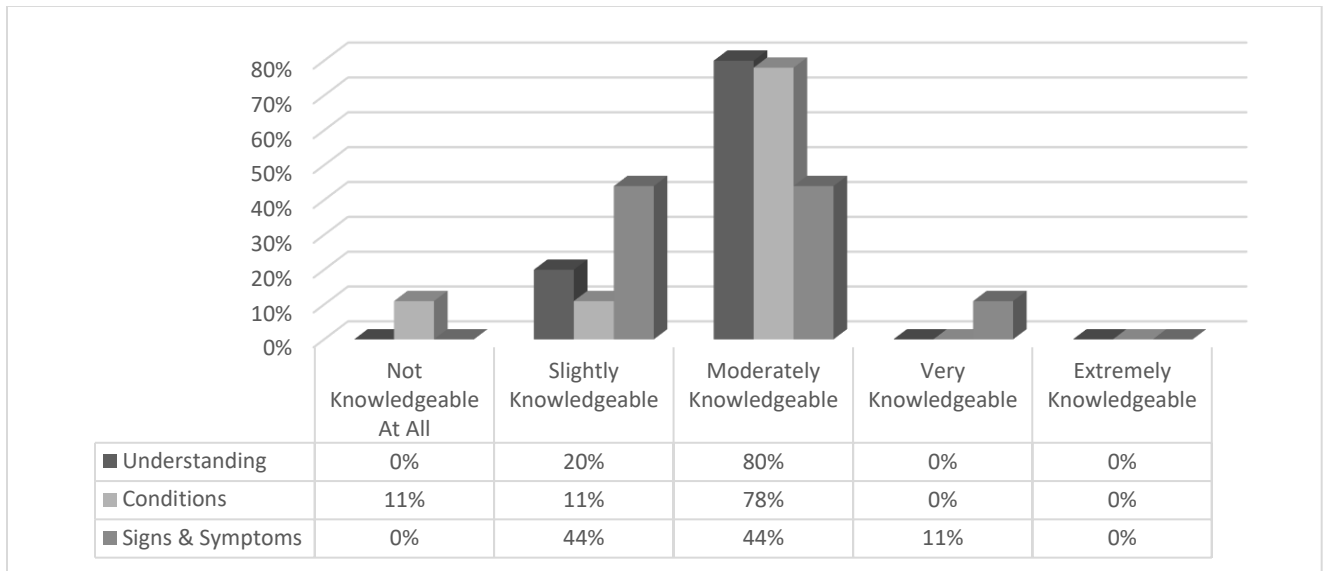
Note that in Figure 5, the first column in each set of bars represents participants'

perceptions of their degree of knowledge on "Understanding and Awareness of Dyslexia" (the

first query on fundamental knowledge of dyslexia). The second column in each set of bars

represent participants' perceptions of their degree of knowledge on "Conditions of Dyslexia."

The last column in each set of bars represents participants" perceptions of their knowledge on "Signs and Symptoms of Dyslexia."

Figure 6 represents data collected from participants in regard to "General Education Training and Professional Development in Dyslexia." In this topic, a 5-point Likert scale was used to collect responses. Response options included: *strongly disagree*, *somewhat disagree*, *neither agree or disagree*, *somewhat agree*, and *strongly agree*. For the first question, 40% of respondents indicated they *strongly disagree* and 40% *somewhat disagree* with "My school offers/provides training and professional development in Dyslexia." In the second question, 40% of respondents indicated they *somewhat agree* and 30% said they *strongly disagree* with the statement, "I have sought/requested individual training and professional development in Dyslexia." For third question, 70% of respondents indicated they *strongly disagree* with the statement, "I have received/completed individual training and professional development in Dyslexia."

Based on participants responses, there appeared to be two factions of participants seeking training in dyslexia. One faction of general education teachers from the non-rural school district participating in this study somewhat agreed they sought or requested training and professional development in dyslexia. But a large sector of participants had not sought training in dyslexia. Also, participants indicated they somewhat disagreed or strongly disagreed their school provided or offered training and professional development in dyslexia. Note a whopping 70% of responses indicated participants had not received or completed individual training or professional development in dyslexia.

Figure 6

Pre-Training Module Results for General Education Teacher Training and Professional Development in Dyslexia

	Strongly Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Strongly Agree
■ Offered by School	40%	40%	0%	20%	0%
■ Sought/Requested	30%	10%	20%	40%	0%
■ Received/Completed	70%	0%	10%	20%	0%
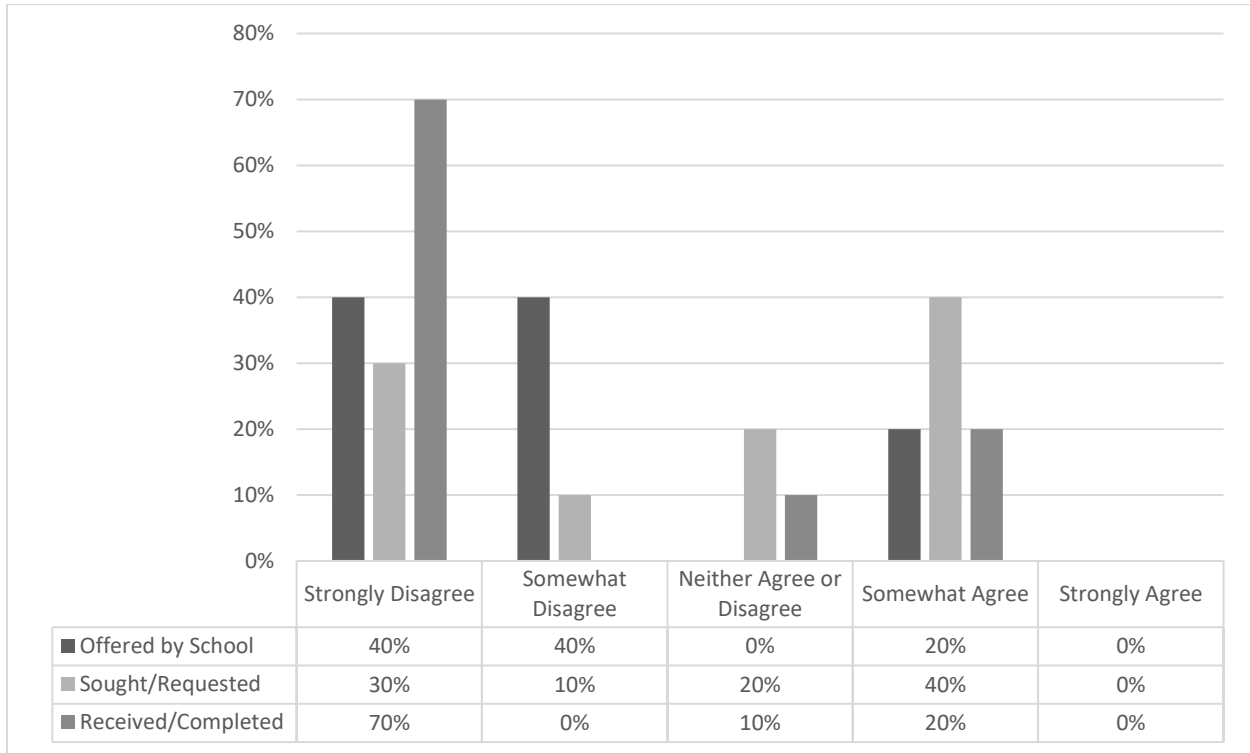
Figure 7 represents data collected from participants in regard to what participants were doing in their classrooms in regard to implementation, use of effective practices or strategies, or receiving support and guidance on engaging with students on an IEP or 504 Plan. In this topic, a 5-point Likert scale was used to collect data. Response options included: *definitely not*, *probably not*, *might or might not*, *probably yes*, *definitely yes*. For the first question, 70% of respondents indicated *definitely yes* they had been "Implementing IEP or 504 Plan accommodations/ modifications" in their classroom. In the second question, 60% of respondents indicated *definitely yes*, they were "Using effective teaching practices or strategies" in their classrooms. For the third question, 40% of respondents indicated they *might or might not* be "Receiving support and guidance with students on an IEP or 504 Plan" in their classroom.

Based on participants' responses, a majority of general education teachers from the non-rural school district participating in this study definitely and probably had been implementing IEP or 504 Plan accommodations/modifications and had been using effective teaching practices or strategies in their classrooms. On the contrary, participants also indicated they *might or might not*, probably do not, and definitely do not receive support and guidance to help them with students on an IEP or 504 plan in their classrooms.

Figure 7

Pre-Training Module Results for "In the General Education Classroom"

	Definitely Not	Probably Not	Might or Might Not	Probably Yes	Definitely Yes
■ Implementing Accommodations/Modifications	0%	0%	0%	30%	70%
▨ Using Effective Practices or Strategies	0%	0%	0%	40%	60%
▨ Receiving Support and Guidance With Students	10%	10%	40%	20%	20%
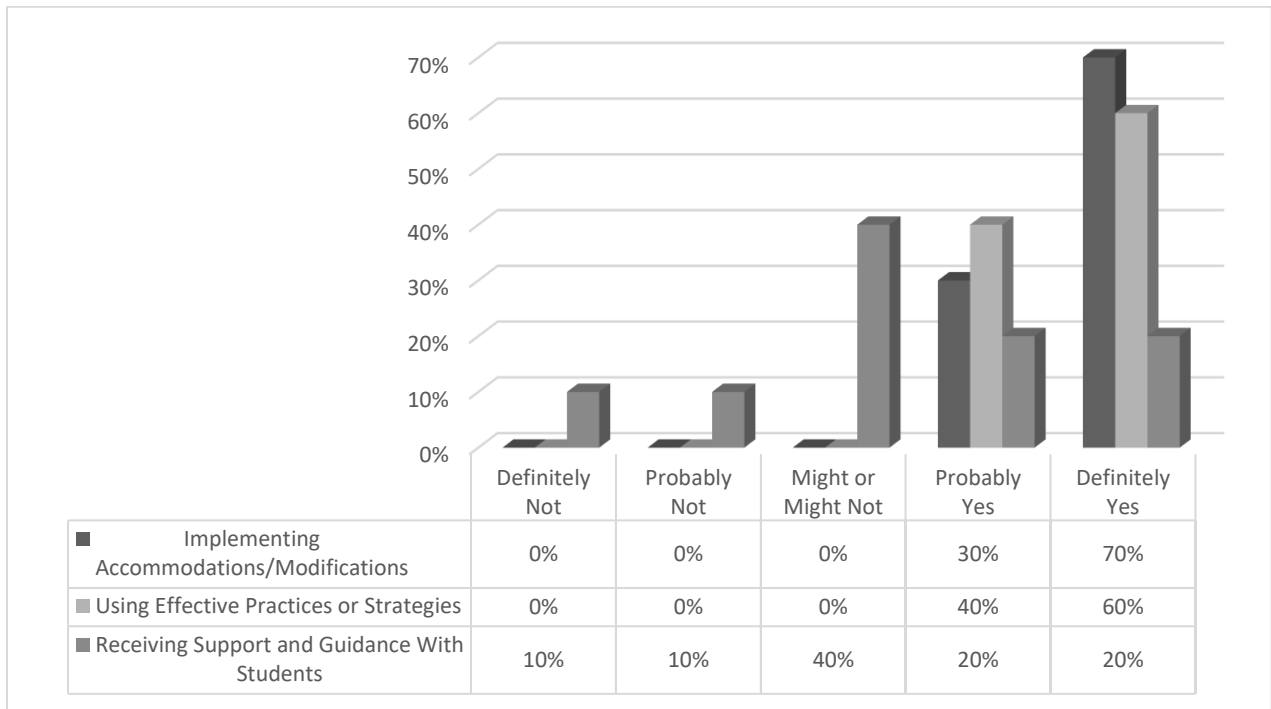
Post-Survey

Figure 8 represents data collected from participants after they completed two learning modules (see Appendices E and F) in regard to participants' increased understanding of different factors related to dyslexia. In this topic, a 5-point Likert scale was used to collect data. Response options included: *strongly disagree*, *somewhat disagree*, *neither agree nor disagree*, *somewhat*

agree, and *strongly agree*. For the first question, 90% of respondents indicated they *strongly agree* with the statement, "I have a better understanding and awareness of Dyslexia." In the second question, 70% of respondents indicated they *strongly agree* with the statement, "I have a better understanding of the conditions of Dyslexia." For third question, 60% of respondents indicated they *strongly agree* with the statement, "I have a better understanding of the signs and symptoms of Dyslexia." Based on participants' responses, general education teachers from the non-rural school district participating in this study strongly agreed after watching learning modules on dyslexia, they had a better understanding and awareness of dyslexia, the conditions of dyslexia, and better understood the signs and symptoms of dyslexia.

Figure 8

Post-Training Module Results for "A Better Understanding"

	Strongly Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Strongly Agree
■ Awareness	0%	0%	0%	10%	90%
■ Conditions	0%	0%	0%	30%	70%
■ Signs & Symptoms	0%	0%	0%	40%	60%
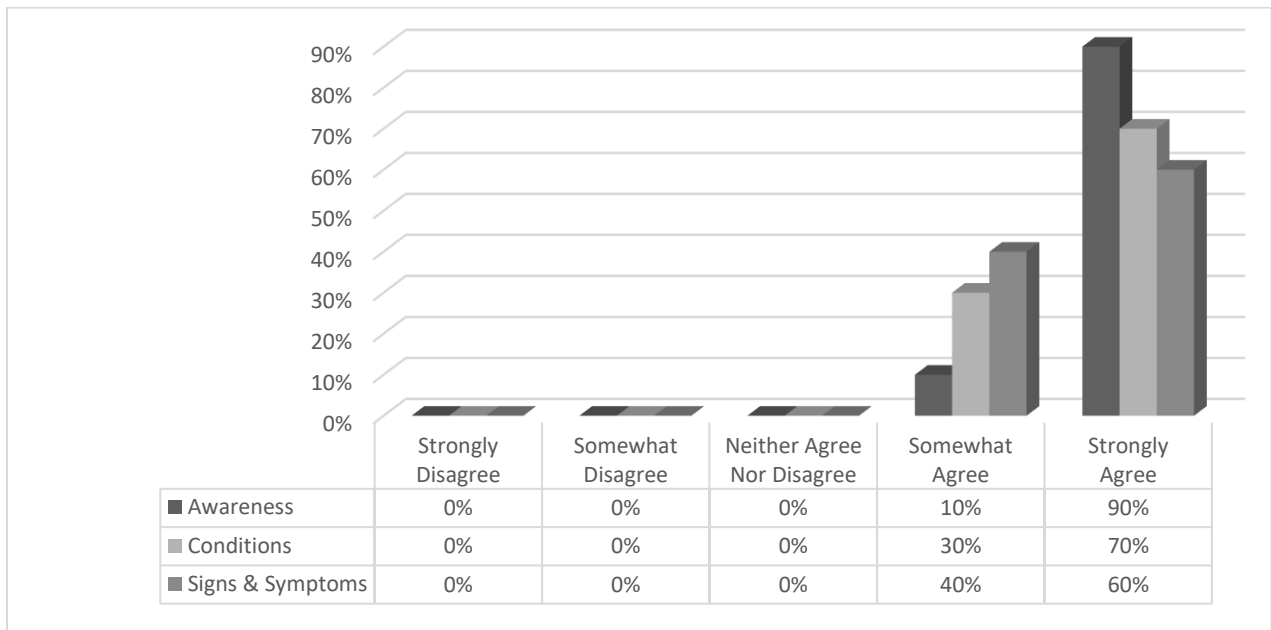
Figure 9 represents data collected from participants in regard to participants sharing their "need for training and professional development with" colleagues/co-workers, building-level administration, and district administration. In this topic, a 5-point Likert scale was used to collect

data. Response options included: *strongly disagree*, *somewhat disagree*, *neither agree nor disagree*, *somewhat agree*, and *strongly agree*. For the first question, 50% of respondents indicated they somewhat agreed and 40% of respondents indicated they strongly agreed they would share their need for training and professional development with their colleagues and co-workers. In the second question, 40% of respondents indicated they *somewhat agree* they will share their need for training and professional development with their building-level administrators. For the third question, 40% of respondents indicated they *neither agree or disagree* they will share their need for training and professional development with their district administrators.

Figure 9

Post-Training Module Results for Sharing Need for Training With . . .
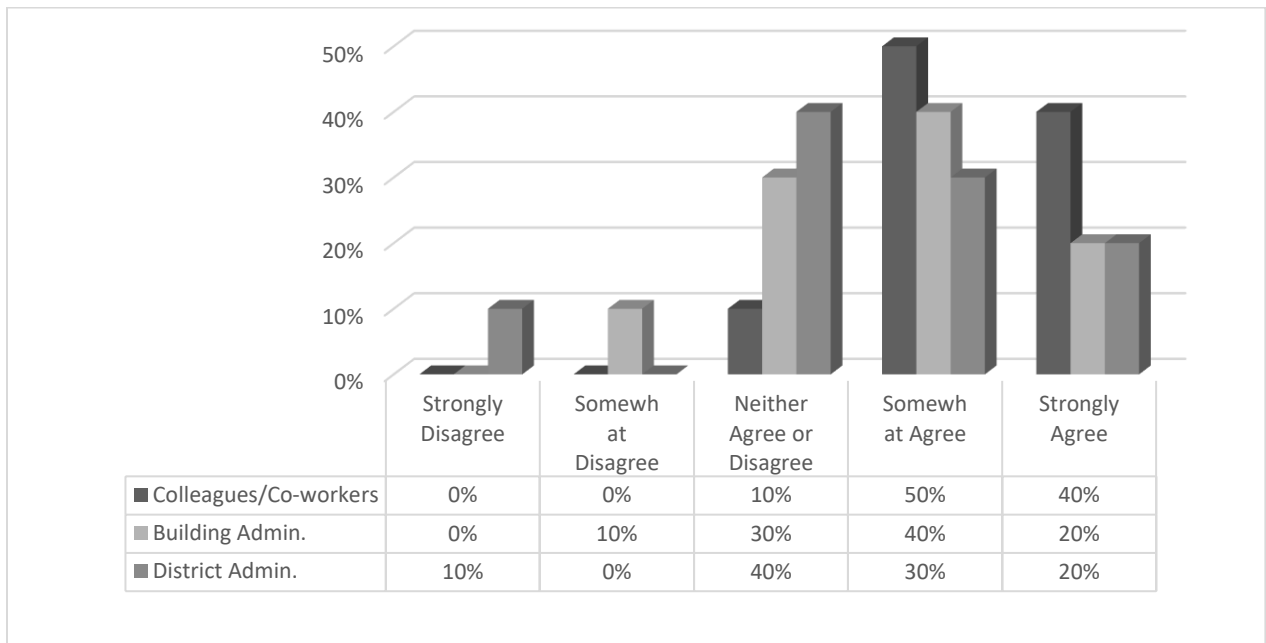
	Strongly Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Strongly Agree
■ Colleagues/Co-workers	0%	0%	10%	50%	40%
■ Building Admin.	0%	10%	30%	40%	20%
■ District Admin.	10%	0%	40%	30%	20%

Based on participants' responses, general education teachers from the non-rural school district participating in this study, to some degree, agreed they would share their need for training and professional development with their colleagues and co-workers (90% agreed), and

building-level administrators (60% agreed). Additionally, a majority of participants' neither agreed nor disagreed they would share their need for training and professional development with their district administrators, though when we combine responses to *somewhat agree* and *strongly agree*, 50% of participants did to some degree agree they would share their need for training and professional development with their district administrators.

Figure 10 represents data collected from participants in regard to the statement, "I feel confident in . . . ." Three queries completed this statement: "implementing IEP or 504 Plan accommodations/modifications," "using effective teaching practices or strategies," or "providing support and guidance to students on an IEP or 504 Plan." In this topic, a 5-point Likert scale was used to collect data. Response options included: *strongly disagree*, *somewhat disagree*, *neither agree nor disagree*, *somewhat agree*, and *strongly agree*. For the first question, 50% of respondents indicated they *strongly agree* they feel confident in "implementing IEP or 504 Plan accommodations/modifications. In the second question, 60% of respondents indicated they *strongly agree* they feel confident in "using effective teaching practices or strategies." For the third and last question, 50% of respondents indicated they *strongly agree* they feel confident in "providing support and guidance to students on an IEP or 504 Plan." Based on participants' responses, general education teachers from the non-rural school district participating in this study somewhat agreed or strongly agreed they felt confident implementing accommodations/modifications for dyslexic students. All participants agreed to some extent they were using effective practices and strategies, and all participants agreed to some extent they were confident in providing support and guidance to students with IEPs or 504 Plans.

Figure 10

Post-Training Module Results for General Education Teachers' Levels of Confidence

	Strongly Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Strongly Agree
■ Implementing Accommodations/Modifications	0%	0%	10%	40%	50%
▨ Using Effective Practices or Strategies	0%	0%	0%	40%	60%
■ Providing Support and Guidance to Students	0%	0%	0%	50%	50%
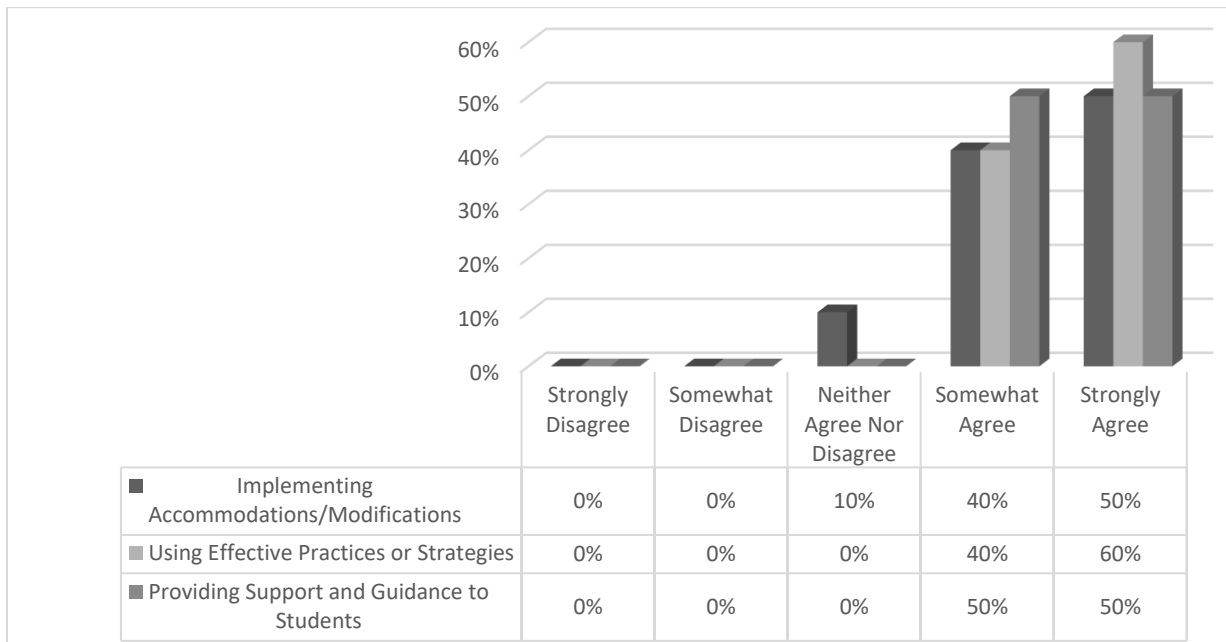
Qualitative Results

Next the researcher analyzed participants' responses to open-ended questions on the pre-and post-survey (see Appendices C and D) and from interviews (see Appendix A). For pre- and post-surveys, the researcher utilized a coding analysis process consisting of reviewing participant responses, then the researcher identified key words and phrases indicated in survey responses and reviewed those key words and phrases, and then the researcher organized those key words and phrases into common themes. For interview questions, the researcher provided an overview and a review of participants' responses. Results from surveys and interviews are displayed in Tables 1 and 2. The researcher employed a thematic analysis of responses and identified the following themes from the surveys: personal and professional experience when working with individuals with dyslexia, further training required in providing instruction to and enabling

learning in individuals with dyslexia, and access to intervention supports and materials in

providing instruction and learning to individuals with dyslexia.

Table 1

Qualitative Question 1 of Pre-Survey: What Are Your Thoughts and Feelings About Providing Learning and Instruction to Students With Dyslexia in a General Education Classroom?

Theme	Respondent Entry
Access to Interventions Supports and Materials	2, 3, 4, 5, 6 and 7
Further Training is Required	1, 9, and 10
Professional and Personal Experience	8

Note. Each respondent was assigned a number based on the order in which respondents'

completed their entry. Themes are arranged in order by most to least respondent entries.

Table 2

Qualitative Question 2 of Pre-Survey: How Has Your Educational Background, Training, and Professional Development Prepared You to Provide Learning and Instruction to Students With Dyslexia in a General Education Classroom?

Theme	Respondent Entry
Further Training is Required	1, 3, 5, 7, 8, 9, and 10
Access to Interventions Supports and Materials	2, 6, and 7
Professional and Personal Experience	1 and 4

Note. Each respondent was assigned a number based on the order in which respondents'

completed their entry. Themes are arranged in order by most to least respondent entries.

Pre-Survey

Qualitative Question 1

The first open-ended question in the pre-survey asked, "What are your thoughts and feelings about providing learning and instruction to students with dyslexia in a general education classroom?" There were three themes identified based on participants' responses. In the first theme, *Professional and Personal Experience,* one respondent mentioned general education teachers can "do a better job" at providing learning and instruction to students with dyslexia in the general education classroom. There were no further details provided by the participant and the researcher based the participants' response on professional and personal experience. In the second theme, *Further Training is Required*, participants shared they, "Would like more training to help students with dyslexia," and they would "Like to know more about how to help them succeed." In the third theme, *Access to Intervention Supports and Materials*, participants shared, "The school provides assistance about this matter," which was interpreted as providing learning and instruction to individuals with dyslexia.

Another participant also expressed the need for other supports beyond guaranteed viable curriculum. A majority of participants agreed individuals with dyslexia should have access to the general education curriculum with intervention supports and materials. Participants shared the following, "Students have to be able to read (with whatever modifications are necessary) in order to continue learning at the pace of students without dyslexia," "Most students will be Tier 2, if severe Tier 3," and . . .

It would be great to have adjustments handy. In other schools I worked at, the special ed teacher made the modifications and adjustments to the regular classroom work. Teachers

provided the work to be done to the Sped teacher and she or he made the modification. It

worked well.

These themes connect to the second qualitative question and responses in the pre-survey and show a need for further training and access to intervention supports and materials.

Qualitative Question 2

The second open-ended question in the pre-survey asked, "How has your educational background, training, and professional development prepared you to provide learning and instruction to students with dyslexia in a general education classroom?" Utilizing the aforementioned themes, the researcher provided an analysis of participants' responses. In the first theme, *Professional and Personal Experience*, one participant mentioned their years of general education teaching experience and another participant added they have personal experience, "but not severe enough cases to impeded learning too dramatically." In the second theme, *Further Training is Required*, participants shared their lack of experience, their uncertainty, lack of preparation, and a singular class covering special education. One of the participants shared, "Regular ed teachers were taught the basics." In the third theme, *Access to Intervention Supports and Materials*, participants shared, "We have ideas on what strategies" to use when providing instruction and learning to individuals with dyslexia in the general education classroom. An additional participant expressed, "Certain modification or adaptations may need to be put in place to assist [the] child," and another participant shared, they "understood that the expert was the sped teacher." These themes connect to a need for further training for teachers in the general education classroom.

Post-Survey

Qualitative Question 1

The first open-ended question in the post-survey asked, "How have your thoughts and feelings changed as you provide learning and instruction to students with dyslexia in the general education classroom?" Responses showed participants recognized an increase in their knowledge and awareness of individuals with dyslexia in the general education classroom after viewing learning modules provided by the researcher. Participants mentioned unlearning misconceptions about dyslexia, understanding how to implement and provide accommodations to individuals with dyslexia and their struggling peers, gaining tools and strategies to use with individuals with dyslexia and their struggling peers, and reinforcing tools and strategies used in the general education classroom at the time of this study. Based on participants' responses, the learning modules apparently enhanced and reaffirmed teaching strategies participants were using in their general education classrooms.

Qualitative Question 2

The second open-ended question in the post-survey asked, "Do you plan on seeking further training or professional development opportunities to address students with dyslexia in a general education classroom? There was a unanimous agreement expressed by participants to seek further training or professional development opportunities in regard to providing instruction and learning to individuals with dyslexia in the general education classroom. Participants shared they would take advantage of training and professional development opportunities within their non-rural school district if it was offered. Another participant mentioned it would be "a great topic for general education teacher as well as those wanting to join the profession of teacher. Each child is unique and needs different interventions to become successful." Lastly, a

participant brought up their plan to take a "3 credit class . . . [on] strategies for learning

disabilities." Based on participants' responses, it appeared the learning modules supported

general education teachers' decisions in seeking further training or professional development

opportunities for providing instruction and learning to individuals with dyslexia and their

struggling peers.

Interview Questions

The first interview question asked participants to reflect on their university program and

the coursework they completed that supported them in providing instruction and learning to

individuals with a disability and other struggling learners. Two participants shared they had a

coursework that supported their understanding when working with students with disabilities

through implementing accommodations and working with students who have an IEP or 504 plan.

Conversely, another participant shared they did not complete coursework to support them in

providing instruction and learning to individuals with a disability and other struggling learners.

Below are participants' responses to the first interview question. Participant 1 said the following:

> For undergrad, I took a course that had to do with children in special education. I do not
>
> remember anything specifically to dyslexia per se. More, the challenges and types of
>
> teaching that you have to do, hands on. I do not remember a lot of that. I remember I
>
> enjoyed the course, and it was fascinating to me. We did hands on things to get an idea,
>
> but it was a requirement. Right now, I know we had one class that talked about IEPs and
>
> 504 plans and what they mean. We did an assignment of how we would accommodate
>
> with specific disabilities. But I don't know if anyone of us focused on dyslexia per se.

Participant 3 said the following:

> In my university, since I am a general education teacher, we had an introduction to sped.
> Even though it's not specific to a learning disability, it taught me strategies on how to
> deal with students with disabilities and what are the signs I need to see for a learning
> disability. That coursework helped me a lot even though it was not specific to a sped
> course.

Participant 5 said the following:

> Minus the dyslexia part, I was never taught. No one focused just on dyslexia. The special
> ed professional development I received . . . years ago, and other professional
> development classes were not IEP or 504. There were love and logic and trauma sensitive
> for my bachelor's program for education.

The second interview question asked participants to compare their coursework with the
completed learning modules from this study. They were asked to share what changes university
programs can make in order to prepare general education teachers to teach individuals with a
disability and other struggling learners. Participants expressed a need for education practicums to
also occur in special education classrooms to prepare them to teach individuals with a disability.
Another participant expressed a need for understanding and implementing a student's IEP, so
teachers are prepared to make appropriate decisions in their instructional delivery. Lastly, a
participant shared the need for additional coursework to address other disabilities such as autism,
blindness, and deafness. Below are participants' responses to the second interview question.

Participant 1 said the following:

> I think part of their practicum needs to include working in a sped room. I think a lot of
> new teachers are afraid. I know I was. I am now helping out in the sped room during first

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period. I had no idea what it all entails; all the prep and work is overwhelming. It's a

disadvantage for teachers not to do their practicum in the sped room. When they get

ready . . . when they go into another class like art or music, it would prepare the teacher

with ideas on specific students with mobility or cognitive issues that can help them. They

(teachers) need that experience.

Participant 2 said the following:

In college there was a lot of emphasis put on lesson planning, even with learners from

exceptional needs class. There was not an emphasis on IEPs or modifying instruction.

Because we were general education students, they probably didn't train us. They did not

train us on how to read an IEP.

Participant 3 said the following:

The modules refreshed my knowledge from college. It helped me a lot in remembering

those data to help me with students who have learning disabilities. If I am going to

compare my coursework in my college days, I think, the university program should add

more courses to teach, for example, students with autism and students that are blind or

deaf.

The third interview question asked participants to reflect on professional development or training

opportunities which supported them in teaching individuals with a disability and other struggling

learners within their present or previous school district. Participants shared they did not have

professional development or training opportunities specific to teaching individuals with a

disability and other struggling learners. Below are participants' responses to the third interview

question. Participant 1 said the following:

Honestly, I don't know that I have been to anything that has been with students with disabilities. Everything is focused on trauma and social emotional learning. This is my . . . year; I do not think that I have been to anything that is about working with children with special needs.

Participant 5 said the following: "Honestly, I have not seen this in my current district. There was a colleague who taught reading strategies once. There was no professional development that was specifically special education. There was one about modifications." Participant 10 said the following: "Possibly PLC's [Professional Learning Communities], I don't think we do provide training or professional development. PLC's have helped us [teachers] the most with struggling students. …We [teachers] are disconnected with which students have an IEP."

The fourth interview question asked participants to compare their professional development and training with the learning modules from this study. Based on that comparison, participants were asked to share what changes school districts can make to ensure general education teachers are prepared to teach individuals with a disability and other struggling learners. Participants shared a need for further professional development and training opportunities that are meaningful and interactive by including their special education colleagues. Additionally, a participant expressed the need for ongoing communication to address learning needs. Below are participants' responses to the fourth interview question. Participant 1 said the following:

They need to have that professional development speaker for all of the general education teachers. Sometimes teachers don't think that applies to them. You may have higher functioning students that still need that support. We need to have more than acronyms; we need activities where we are doing something. I do have to do a lot of hands-on activities to get their (sped students) attention. . . .This is something that needs to be

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addressed to the entire district, not just the special education teachers, and it needs to be

more hands on, maybe videos showing examples of what you should be doing in your

classroom.

Participant 4 said the following:

I would suggest they have some sort of intervention of the problems and what needs to be

addressed. Some sort of a meeting to discuss what we will do to teach the child and what

will we do to support the situation. Communication with each other, every other week,

To address student needs and disabilities. More communication is needed.

Participant 5 said the following:

Provide examples, you gave really good examples on your slide show, just working with

teachers one on one. Whether its math or history, if they look at an assignment that is

non-modified, they can give an example of a modified activity. I never thought about

enlarging text. I would really like our special education team to teach us with examples. I

would like them to sit with us to modify examples until we get the hang of it. Most of the

time, I do not get [the] IEP or 504 until after school has started. I would like [a] special

education teacher to sit with us and give us examples.

The fifth interview question asked participants to share with local and state agencies, from a

general education teacher's perspective, what changes need to be made in order to prepare

general education teachers to teach individuals with a disability and other struggling learners.

Participant responses varied, one participant shared a need for further training opportunities for

general education teachers; another participant shared supporting learnings with

accommodations and recognizing them as general education learners; and the last participant

shared the need to keep learning at a localized level. Below are participants' responses to the

fifth interview question. Participant 1 said the following: "What I would take to state legislature, the need for more training for the general education teacher populations. Having more than acronyms reviewed because students are being underserved." Participant 4 said the following:

> Everybody is a genius; everyone has the ability to learn. They are special in their own ways. They need accommodations suited to them. Treat them as a regular student with accommodations. What I am trying to say is they are regular students with accommodations.

Participant 5 said the following:

> Each state or district may have different disabilities at a time. It would be nice to have support, rather than current legislation. Give us the tools. I want each district to be its own. I don't like the state telling us what to do. Where it comes from it has to stay local, it's up to the special education department to teach us too.

Discussion – Pulling It All Together

Researchers confirmed the need for further training and professional development for general education teachers when working with individuals with a disability or other struggling learners (Allen, 2022; Reid Lyon & Weiser, 2009; Richardson, 1996). Participants of this study agreed with researchers. Results of this study indicated general education teachers have limited knowledge, awareness, and skills to engage with individuals with dyslexia, knowledge their special education teacher colleagues possess due to previous and present teacher preparation programs. Fortuitously, this study demystified participants' learned misconceptions as described in Anderson (2021) and White et al. (2020) about dyslexia and provided participants with additional teaching strategies and resources to enhance their knowledge and awareness. Furthermore, the study reaffirmed teaching practices and strategies participants already were

implementing in their general education classrooms that supported individuals with dyslexia and other struggling learners.

Unclear policies and attempts to implement those unclear policies inhibit teachers from providing suitable adjustments in general education classrooms for individuals with a disability and other struggling learners (Gearin et al., 2020; Makgato et al., 2022). Considering local, state, and federal mandated requirements in the field of education at the time of this study, it is understandable that teachers in general education classrooms have felt a sense of inadequacy and are often unsuccessful in providing instruction and learning to all learners, especially individuals with dyslexia and other struggling learners (Anderson, 2021; Gabriel, 2018; Gearin et al., 2020; Jones et al., 2019; National Joint Committee on Learning Disabilities, 1998; Reid Lyon & Weiser, 2009; Richardson, 1996).

A resolution to this quandary is to provide general education teachers with necessary supports, materials, and teacher preparation programs to improve teachers' effectiveness and improve learning outcomes for individuals with dyslexia and other struggling learners (Reid Lyon & Weiser, 2009; Richardson, 1996). An example of supports, materials, and teacher preparation programs suggested by a participant in this study was to enrich preservice or in-service trainings by providing general education teachers and special education teachers with hands-on activities or videos that model evidence-based strategies.

Also, based on results of this study and other research, teachers within a school district would benefit from preparation programs with transmission-style workshops and by incorporating collaboration sessions between general education teachers and special education teachers into preparation programs and then classrooms (Gabriel, 2018). Workshops support skill acquisition through the use of audio-visual demonstrations, practice of a strategy or method, and

prompt feedback from a workshop facilitator. Additionally, through these workshop sessions general education and special education teachers can work together to plan and provide instructional supports and materials appropriate for individuals with dyslexia and other struggling learners in a general education classroom (National Joint Committee on Learning Disabilities, 1998; Richardson, 1996). For example, a participant shared the need for collaboration with special education teachers. Through collaboration sessions, general education teachers and special education teachers could provide strategies on differentiating instruction and "how to determine when and how to make accommodations and modifications" (National Joint Committee on Learning Disabilities, 1998, p. 183) for individuals with dyslexia and other struggling learners in the general education classroom (National Joint Committee on Learning Disabilities, 1998). The aforementioned findings are ways in which school districts can address the need for general education teacher preparation programs within a school district at a district level.

Summary

The second artifact of this paper provided a description of the research approach and data analysis methods for this study, results, and further thoughts in regard to the need for general education teacher training. The researcher shared results of pre-surveys, post-surveys, and interviews based on the use of an explanatory sequential design. The design allowed the researcher to implement two phases of data collection where quantitative results and qualitative results were collected in order to determine the nature of the problem.

Results from surveys and interviews identified three themes, evolving themes which identified general education teachers' need for:

1.   personal and professional experience when working with individuals with dyslexia,

2.   further training required to provide instruction and learning to individuals with

dyslexia, and

3.   access to intervention supports and materials in providing instruction and learning

to individuals with dyslexia.

In the third artifact, a solution to the implementation and monitoring of accommodations and

modifications in the classroom in the form of a leaflet supports the role and responsibilities of

teachers in the general education classroom who provide instruction and learning to individuals

with dyslexia and other struggling learners.

ARTIFACT III

IMPLEMENTATION OF SOLUTION

The purpose of this study was to identify needs of general education teachers in their classrooms in regard to their roles and responsibilities of providing instruction to and enabling learning in individuals with dyslexia. Results of this study indicated general education teachers require further supportive measures from fellow special education teachers, specialists, and applicable professionals that are part of an education team involved in a student's Individualized Education Program (IEP) or 504 Plan. Further, general education teachers at the time of this study would benefit from guidance in their classrooms on implementing and monitoring accommodations and modifications for teaching individuals with disabilities like dyslexia effectively and appropriately. Effective use of accommodations and modifications for individuals with disabilities like dyslexia contribute to students' academic outcomes in the general education classrooms.

The researcher created a leaflet (Figure 11) for general education teachers based upon past research and results of this study, which uncovered a need for supports and materials for teachers implementing interventions in general education classrooms as a way to address the problem of practice. The leaflet titled *An Implementation Guide for General Education Teachers* was designed as a reflective guide for teachers to read, reflect, and practice implementing accommodations and modifications in general education classrooms for dyslexic students. The intention of using a leaflet was to provide teachers with one supportive material, which would
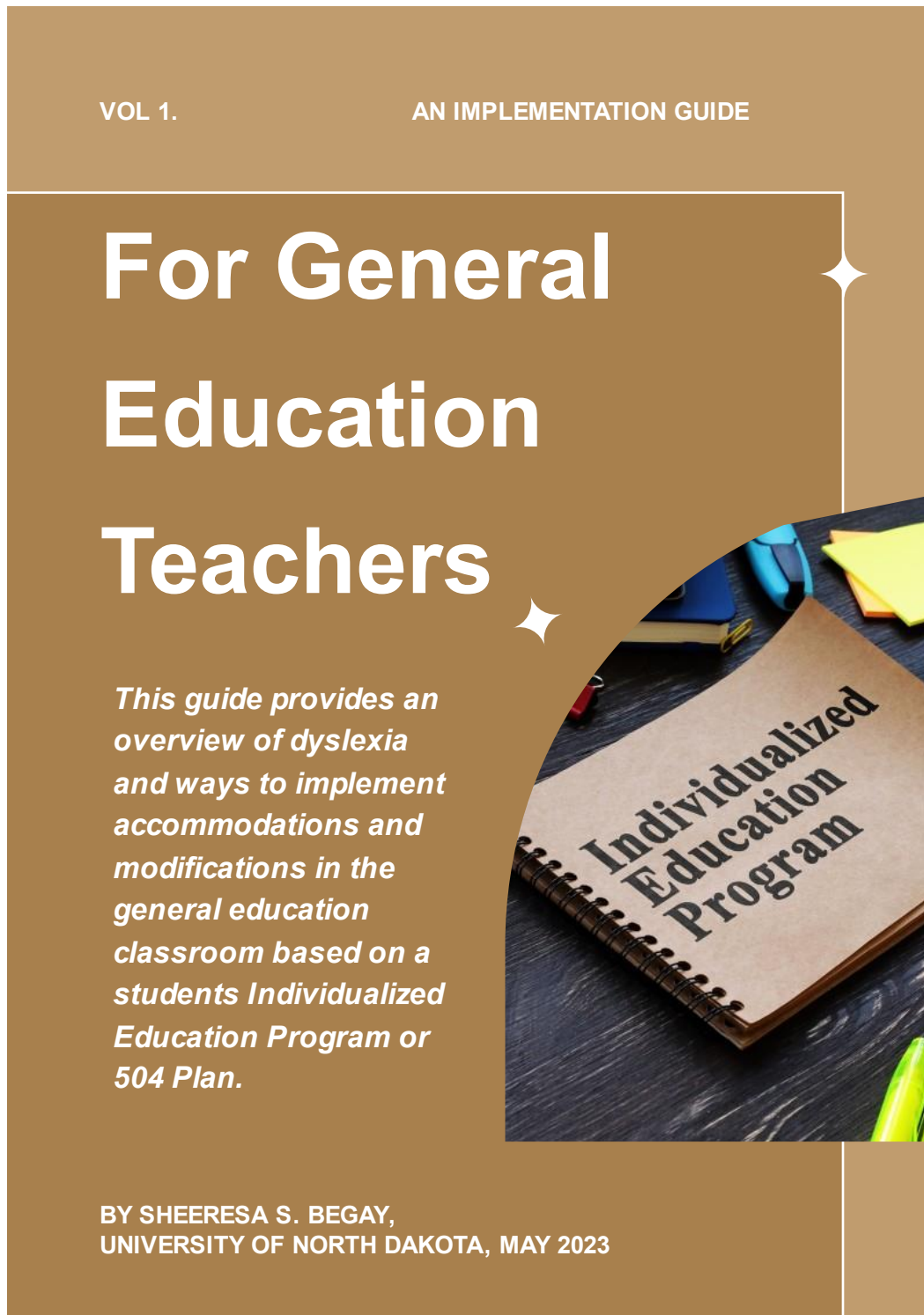
enhance implementation of accommodations and modifications for teaching dyslexic students in a general education classroom. The use of supportive materials was identified as an effective way to provide general education teachers with necessary training and professional development. Moreover, the use of a leaflet provides general education teachers with practical supportive material they can use directly in their classrooms. The leaflet was designed to share findings of this study in a serviceable manner to general education teachers responsible for providing instruction and learning to individuals with disabilities like dyslexia.

The leaflet provides general education teachers with information and knowledge about possible accommodations and modifications they might try in their classrooms. Teachers are encouraged to reflect upon their current classroom reality as it relates to implementation of accommodations and modifications for dyslexic students, and lastly it allows teachers to put information from the leaflet and their reflections into practice.

Teachers are provided with four distinct sections in the leaflet where they will read, reflect, and practice. The four sections provides general education teachers with: (a) a summary of the study, *Dyslexia and the Need for General Education Teacher Training*, (b) legal responsibilities of a general education teacher pertaining to accommodation and modification sections of an IEP or 504 plan, (c) an explanation of types of accommodations and modifications (i.e., presentation, response, setting, and timing/scheduling) that can be made for individuals with dyslexia, with accompanying examples teachers may find in IEPs or 504 plans, and (d) ideas on implementing accommodations and modifications for dyslexic students. The advantage of the leaflet is it's a compact guide teachers can utilize as part of their professional development collection to ensure they are implementing and monitoring IEP and 504 plan accommodations and modifications effectively.

Figure 11

A Guide for General Education Teachers Teaching Dyslexic Students

VOL 1.   AN IMPLEMENTATION GUIDE

For General Education Teachers

This guide provides an overview of dyslexia and ways to implement accommodations and modifications in the general education classroom based on a students Individualized Education Program or 504 Plan.

BY SHEERESA S. BEGAY,
UNIVERSITY OF NORTH DAKOTA, MAY 2023

Inside of this Guide

Begay's study uncovered a need for teacher support from colleagues, training programs, and access to materials to help accommodate students with dyslexia in the general education classroom (Begay, 2023).

Contents

Making The Most of The Guide

As you move through this guide, there are pages at the end of each section intended for you to reflect on what you've learned. Think about how you will apply it to your classroom.

1
Read

Each section provides information and an overview of the general education classroom as it relates to individuals with dyslexia.

2
Reflect

At the end of the section, take a moment to reflect on the reading. Use the prompt to guide your reflection.

3
Practice

After each section, put the information and your reflection into practice in your classroom.

Section 1
A Summary of a Study: Dyslexia and the Need for General Education Teacher Training

The Purpose of the Study

Education policy from local, state, and federal agencies address the roles and responsibilities of general education teachers in regard to providing individuals with disabilities access to the curriculum and materials in a general education classroom.

In this study the researcher gathered an understanding of general education teachers' training and professional development in relation to providing instruction and learning to individuals with dyslexia. Results from the study indicate the need to understand and implement accommodations and modifications according to an Individualized Education Program (IEP) or 504 Plan.

85% *Individuals with disabilities will spend their time in the general education classroom learning.*
(Allday et al., 2013; Goldstein et al., 2013).

Section 1
A Summary of a Study: Dyslexia and the Need for General Education Teacher Training

In the
General Education Classroom

70% Participants indicated *"definitely yes"* they implement IEP or 504 Plan accommodations/modifications in their classroom.

60% Participants indicated *"definitely yes"* they are using effective teaching practices or strategies in their classroom.

40% Participants indicated they *"might or might not"* be receiving support and guidance with students on an IEP or 504 plan in their classroom.

Teachers Level of Confidence in the
General Education Classroom

50% Participants indicated they *"strongly agree"* that they feel confident in implementing IEP or 504 Plan accommodations/modifications in their classroom.

60% Participants indicated they *"strongly agree"* that they feel confident in using effective teaching practices or strategies in their classroom

50% Participants indicated they *"somewhat agree"* that they feel confident in providing support and guidance to students on an IEP or 504 plan.

"Certain modifications and adaptations may need to be put in place to assist [the] child."
- Study Participant -

Section 1
A Summary of a Study: Dyslexia and the Need for General Education Teacher Training

Interpretation of Results

The participants shared that they needed support and guidance beyond special education definitions. It was concluded from participant responses that a general education teacher's previous experience with implementing IEP's and 504 Plans entailed working closely with special education teachers who would make modifications or adjustments to curriculum and materials in the general education classroom.

Additionally, the participants mentioned that their higher education coursework did not provide in-depth knowledge or understanding of accommodations and modifications for individuals with disabilities.

As a result of a lack of training and professional development, general education teachers are less confident in implementing IEP or 504 plan accommodations and modifications in their classrooms.

"There was not an emphasis on IEP's or modifying instruction Because we were general education students...they did not train us on how to read an IEP".

-Study Participant

Section 1 Reflection

What comes to mind as it relates to your professional training and development when working with individuals with dyslexia?

How confident are you in implementing IEP or 504 Plan accommodations/modifications?

Notes

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Section 2
A Teacher's Role and Responsibility with Accommodations and Modifications in the General Education Classroom
The Individual Education Program

Each state has its own designated IEP forms and these forms may vary by school district.

For context, the North Dakota IEP Form will be referenced. A student's IEP team will meet to develop the plan. Section G of the plan is where teachers will find a student's adaptations/modifications.

Further descriptions for Section G as it pertains to teachers are described below:

- *Sec.300.320 (6)(i)* states documentation and reasoning will be provided for students utilizing accommodations/modifications during the North Dakota State Assessment (NDSA).
- *Sec.300.323 (d)(2)(ii)* states accommodations, modifications must be provided accordingly by a student's IEP team.
- *Sec.300.324(3)(i) and (ii)* states general education teachers are part of the students IEP team and provide their expertise during the development of a plan.

Did you know...
Students with an IEP are covered under the Individuals with Disabilities Education Act (IDEA)

Section 2
A Teacher's Role and Responsibility with Accommodations and Modifications in the General Education Classroom
The 504 Plan

Guidance from the United States Department of Education Office of Civil Rights provides school districts with direction in providing education services to student's who qualify for a 504 plan.

The 504 Plan process entails an education team to review documents (i.e., specialist report, private evaluation, or health records) and/or to conduct an evaluation in order to determine whether a student qualifies for a 504 plan.

Once a student qualifies for services, a plan is created to address their needs so they may thrive in the general education classroom. Teachers are responsible for implementing the accommodations and modifications of a plan (Section 504/ADA guidelines for parents and educators, n.d.)

Did you know ...
Students with a 504 Plan are covered under Section 504 of Rehabilitation Act of 1973 which is enforced by the Office of Civil Rights.

A 504 Plan is created by a student's education team. The team members are "knowledgeable about the student and also about the disability" (Section 504/ADA Guidelines for Parents and Educators, n.d., p.3).

Who is on the education team?
- School administrator (s)
- 504 Coordinator
- Classroom teacher(s)
- Education Staff working with student (i.e., para educator, tutor, interventionist, specialist, coordinator, etc.)
- Parent(s) and/or Guardian(s)
- Student, if applicable

Section 2
Reflection

Select either an IEP or 504 Plan of a student in your classroom.

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Review Section G of the IEP or the 504 Student Accommodation Plan.

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Write down questions you have about the plan.

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Share you questions with the students case manager or 504 Coordinator.

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Section 3
An Understanding of Classroom Accommodations and Modifications for Individuals with Dyslexia

In the Classroom

An **accommodation** alters the way a student accesses grade-level curriculum and materials.

A *modification* changes learning expectations and lessens access to grade-level curriculum and materials.

An Understanding

Education teams will typically see written accommodations in an IEP or 504 plan. Whereas the modifications are determined in an IEP.

The support and implementation of an accommodation allows students to utilize tools and resources which will allow them to demonstrate their skills and abilities by removing barriers which would otherwise inhibit them. On the other hand, modifications change the entire trajectory of a students education experience and achievement.

"The purpose of accommodations is to ensure equal access to the full school experience for students with dyslexia." (International Dyslexia Association, 2020, p.1)

Therefore, it is important for the education team to decide whether accommodations or modifications are valid.

Section 3
An Understanding of Classroom Accommodations and Modifications for Individuals with Dyslexia

Types of Accommodations

Presentation

Students are able to use an alternative format that supports their reading understanding rather than standard print.

- Use of verbal directions
- Use of font and size

Response

Students are able demonstrate their understanding of the content or subject matter through alternative ways.

- Annotate answers
- Use of a speech-text software
- Provide oral response

Setting

Students are able to access an alternative location to complete an assignment or assessment.

- Provide different groupings
- Limit distractions

Timing/Schedule

(Students are given varying options or arranged times to support the completion of an assignment or assessment.

- Use of breaks
- Sequencing tasks

"Accomodations are only helpful if the student knows how to use them effectively." (International Dyslexia Association, 2020, p.2)

Section 3 Reflection

Recap Section 2. Use your selected student's plan.

What type of accomodations are part of your student's plan?

Does your student know their accommodations and how to use them?

Notes

Section 4

The General Education Classroom and Implementation of Accommodations and Modifications or Individuals with Dyslexia

Teachers are responsible for ensuring that a student's IEP or 504 plan accommodations or modifications are implemented in the classroom (Understanding Accommodations, n.d).

Preparation, planning, collaboration, and monitoring a student's use of accommodations and modifications will support the classroom outcomes for student's with an IEP or 504 plan.

A student may use their accommodations or modifications for one or more subjects depending on what is listed in their IEP or 504 plan.

Take your time implementing, supporting, and monitoring the use of a student's accommodation or modification to ensure they are utilized effectively.

How to Implement Accommodations/Modifications?

- Review the student's IEP or 504 Plan.
- Get acquainted with the list of accommodations and modifications
- Collaborate with special education teachers and other applicable professionals to support classroom implementation.
- Arrange instruction, assessment, and the classroom setting to support accommodations and modifications.
- Support the student with practicing and using their accommodations and modifications.

NOTE: Familiarize yourself with district and state policies and guidelines.

Section 4
The General Education Classroom and Implementation of Accommodations and Modifications or Individuals with Dyslexia
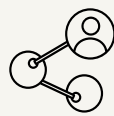
Why monitor accommodations/modifications?

The reason for monitoring accommodations and modifications is to measure whether they are useful and effective for the student's learning and instruction. Accommodations and modifications are used to support student outcomes and allow students to participate and access classroom curriculum, materials, and instruction. Data collection provides the student's education team with evidence in determining the continuance of accommodations and modifications.

What should be monitored?

The monitoring document should list and describe the accommodations and modifications. Teachers can create a data matrix with the following columns: date, the accommodation or modification being tracked, identify whether it was initiated by the teacher or student, whether it was used, and notes that will support the continued or discontinued use of the accommodations or modifications.

Section 4 Reflection

Practice implementing and tracking accommodations/modifications:

- Choose an assignment or assessment to support the student in using materials, tools, or resources according to their IEP or 504 Plan.
- Use a tracking document to monitor their use of accommodations/modifications.

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✦ Resources and References

Accommodation Central

Accommodation Central is an all-one site that provides accommodation supports, examples, and tips for educators. Testing information is only for the state of Texas.

Website: http://acentral.education/

IRIS Center

The IRIS Center provides information, resources, and professional development to support struggling learners and individuals with disabilities.

Website: https://iris.peabody.vanderbilt.edu/ or https://iriscenter.com

National Center on Educational Outcomes

The NCEO provides information and resources in assessment practices for individuals with disabilities.

Website: *https://nceo.info/*

National Center for Learning Disabilities

The NCLD provides information and resources to support individuals with "learning and attention issues" (National Center for Learning Disabilities About Us, 2023).

Website: https://www.ncld.org/?s=dyslexia

Understood

Understood provides information and resources to for individuals "who learn and think differently." (Understood Mission, 2014 2023).

Website: *https://www.understood.org/*

★ Resources and References

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CONCLUSIONS

Summary

The purpose of this study was to identify the needs of general education teachers in the classroom in regard to their roles and responsibilities when providing instruction to and enabling learning of individuals with dyslexia. Additionally, the researcher sought to understand what type of teacher preparation programs (i.e., higher education degree programs, training, and professional development) teachers completed in order to prepare them to provide instruction and learning to individuals with dyslexia in general education classrooms. The completed artifacts delineated the problem of practice according to its impact on education, a review of relevant research and practitioner-based literature, a rational approach to the research focused on addressing the problem of practice, results from the study conducted by the researcher led to the creation of a leaflet for general education teachers as a way to ameliorate the problem of practice. The emphasis of this section discusses the significance of the artifacts and reflects upon their use in the field of education.

The researcher conducted a thorough study centered on the use of an explanatory sequential design method to gather participant responses from surveys and interviews of general education teachers in a non-rural school district to examine at the time of the study needs of general education teachers providing instruction to and enabling learning of individuals with dyslexia in general education classrooms. Surveys and interviews gathered classroom experiences and teacher perceptions about delivering instruction to and measuring learning of

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individuals with dyslexia. Due to local, state, and federal mandates in education in regard to IEP and 504 plan accommodations and modifications, it's of vital importance general education teachers are trained and prepared to implement and monitor the efficacy and appropriateness of accommodations in general education classrooms in order to provide individuals with dyslexia an environment conducive to learning. It is therefore unequivocal this study and it results reveal a practical resolution to the problem of practice.

Discussion

Teachers going into the field of education must understand their roles and responsibilities as it relates to local, state, and federal mandates for individuals with disabilities like dyslexia. A progression of individuals with disabilities accessing general education classrooms in the recent past has enhanced opportunities for individuals with disabilities to learn alongside their peers as outlined in the Individuals with Disabilities Education Act (IDEA) for students with an IEP and outlined in Section 504 of the Rehabilitation Act of 1973 for students with a 504 plan (Office for Civil Rights, 2020; U.S. Department of Education, 2022). To ensure teachers and school districts are in compliance with local, state, and federal mandates, administrators must ascertain teachers are equipped to implement and monitor accommodations and modifications in general education classrooms for children needing those interventions.

For the implementation and monitoring of accommodations and modifications according to a student's IEP, teachers must know their roles and responsibilities in accordance with local and state mandates. In the state of North Dakota, general education teachers can find a list and description of modifications and accommodations in Section G of an IEP. There are three sections (i.e., 300.320(6)(i), 300.323 (d)(2)(ii), and 300.324 (3)(i) and (ii)) according to North Dakota state mandates which general education teachers must follow (North Dakota Department

of Public Instruction, 2017). These sections state an education team, which includes a general

education teacher must: (a) document the reasoning for the use of accommodations/

modifications during the North Dakota State Assessment (NDSA), (b) provide accommodations/

modifications accordingly, and (c) explicitly state involvement of general education teachers

based on their classroom expertise when it comes to developing an IEP.

Additionally, teachers must know their role and responsibilities as it pertains to

development and implementation of 504 plans. Guidance from federal mandates supports

implementation and monitoring of accommodations for students with a 504 plan. The United

States Department of Education, Office of Civil Rights, provides local and state education

agencies with thorough guidance in this area. The role and responsibility of a general education

teacher is to contribute their knowledge of a student's skills and abilities in accordance with

observations and evidence (North Dakota Department of Public Instruction, n.d.b). In addition to

their roles and responsibilities, it is also imperative general education teachers understand laws

that enforce IEPs (i.e., Individuals with Disabilities Education Act (IDEA)) and 504 plans (i.e.,

Section 504 of the Rehabilitation Act of 1973) as they are required to follow these laws.

According to Allday et al. (2013) and Goldstein et al., (2013), individuals with a

disability have a right to participate in a general education classroom at least 85% of a school

day in accordance with implementation of IDEA. IDEA requires students with disabilities have a

right to be educated in a least restrictive environment. At the time of this study, results indicated

teacher participants received substandard support and guidance on teaching students on an IEP or

504 plan in their classrooms. A participant shared, "Most of the time, I do not get IEP or 504

plans until after school has started. I would like special education teachers to sit with us and give

us examples" in order to provide support and guidance in implementing accommodations and modifications in the general education classroom.

General education teachers expressed their need to collaborate with special education teachers as a way to implement and monitor accommodations and modifications in their general education classrooms. Participants agreed, special education teachers possess a particular understanding in how to modify or alter general education curricula and materials to meet the needs of individuals with disabilities. A participant shared, "The Special Education teacher made modification adjustments to the regular classroom work." Additionally, participants agreed, general education teachers possess a particular understanding in how to deliver adopted curricula and materials to students in a general education classroom and work with special education teachers to support individuals with disabilities. A participant shared, "We [general education] teachers have ideas on what strategies [to use] and how [we can use] them with students" in the general education classroom in order to ensure individuals with disabilities are able to access curricula and materials in a general education classroom. Collaboration efforts between general education teachers and special education teachers add to effectiveness and appropriateness of implementing and monitoring accommodations and modifications for individuals with disabilities in a general education classroom on an IEP or 504 plan. Furthermore, use of effective and appropriate accommodations and modifications allow individuals with disabilities to demonstrate their skills and abilities on assignments and activities in a general education classroom.

According to the IRIS Center, Peabody College, Vanderbilt University (n.d.), individuals with a disability in the general education classroom will experience obstacles that may impede their access to curricula and materials to support their instruction and learning. The

aforementioned obstacles can be resolved using a combination of four types of accommodations which are: (a) presentations, (b) responses, (c) settings, and (d) timing and scheduling. A description of the four types of accommodations with examples can provide general education teachers with support and guidance in ensuring individuals with a disability have access to curricula and materials in their classrooms.

The International Dyslexia Association (2020a) has provided a description and examples of four types of accommodations for individuals with dyslexia. The first accommodation, presentation, provides a student with an alternative format for printed material that supports their understanding of reading material beyond standard print. An example of a presentation accommodation is the use of verbal directions for an assignment or assessment. The second accommodation type, response, allows students to demonstrate their understanding of the content or subject matter through alternative ways. An example of a response accommodation is the use of speech-to-text software. The third accommodation type, setting, allows students to access an alternative location to complete an assignment or assessment. An example of a setting accommodation is limiting distractions in a classroom by providing a student with a private seating area or location like a study room or a library. The fourth accommodation type, timing and scheduling, provides an option for arranged times to support completion of an assignment or assessment. An example of timing and scheduling is by sequencing tasks.

Because teachers are also responsible for guaranteeing implementation and monitoring of accommodations and modifications for students with disabilities in their general education classroom is taking place, it is essential general education teachers understand how to implement these accommodations and modifications. A participant shared, "Certain modifications or adaptations may need to be put in place to assist [the] child" in order for the student to be

successful in a general education classroom. In order for teachers to implement and monitor accommodations and modifications, they must understand how, why they should monitor accommodations and modifications, and what they should monitor in order to provide an education team with relevant evidence that supports continued use of an accommodation or modification.

In order to understand the "how" of implementing accommodations and modifications, teachers must collaborate with other education team members (i.e., school administrators, special education teachers, other general education teachers, specialists, consultants, parent(s)/guardian(s), and students). General education teachers will usually complete the following steps in order to ensure they are implementing accommodations or modifications efficiently: (a) review a student's IEP or 504 plan, (b) acquaint themselves with accommodations and modifications needed, (c) collaborate with the student's education team, (d) arrange instructional delivery, classroom assessment, and an environment in accordance with a student's needed accommodations and modifications, and (e) provide the student with opportunities to practice and refine their use of their accommodations and modifications. By using these steps, general education teachers can guarantee they are abiding by local, state, and federal mandates.

In sync with the "how" of implementing accommodations and modifications, teachers must also understand "why" and "what" should be monitored when it comes to accommodations and modifications in a general education classroom. The "why" of monitoring has to deal with ensuring that accommodations and modifications are effective and appropriate to the instruction and learning opportunities provided in a classroom. Effective and appropriate accommodations allow students to access general curricula and materials and to participate in a general education classroom (Morin, 2021b). The "what" of monitoring has to deal with capturing evidence.

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Evidence will guide an education team in the continuation of using a selected accommodation or modification. Encompassing the "how," "why," and "what" will foster accountability measures to help teachers comply with local, state, and federal mandates when it comes to implementing and monitoring accommodations and modifications in their general education classrooms.

Collectively, participants agreed they needed further support and guidance in order to implement and monitor accommodations and modifications for students with IEPs or 504 plans. Separate participants shared the following in regard to support and guidance with IEP/504 accommodations and modifications: "There are so many disabilities under 504s and IEPs," "It would be nice to have support," and the support and guidance will help "to address student needs and disabilities." If general education teachers are provided with an explicit understanding of their roles and responsibilities and: laws which enforce IEPs and 504 plans, needed accommodations and modifications, steps to implement accommodations and modifications in their general education classrooms, and the importance of monitoring accommodations and modifications to determine their effectiveness, they (teachers) will be better equipped to support individuals with disabilities like dyslexia in their general education classrooms.

Limitations

A premier limitation to this study is that it concentrated on one region, a non-rural district rather than many regions, including rural and other non-rural districts. If the researcher had expanded the research population to multiple districts, it would have provided access to general education teacher perspectives from multiple regions. In addition to this study's one concentrated region, selected criteria for the study were limited to teachers in general education classrooms providing instruction and learning to fifth through eighth grade students. This posed a challenge for the researcher since the literature review showed past research has focused mainly on early

elementary grade levels—kindergarten through fourth grade. Furthermore, initial research

following the first IRB approval of the study, the researcher struggled with gathering enough

participants for the study. After initial IRB approval four out of eight of the required participants

completed the study. Upon evaluating completed participant responses, the researcher decided to

amend the research design and seek additional IRB approval for the amendment by adding

personal interviews to the research design and a corresponding interview questionnaire.

Ways in which the researcher sought to overcome limitations started by corresponding

with building administrators, creating a check list of what to do for interested participants, and

following up with participants interested in the study. During the recruitment phase of the study,

building administrators were contacted with an initial email. All administrators in the district

were responsive and eager to support the researcher in relaying the study to staff. The researcher

was scheduled to present the study and pertinent information to building level staff. A follow-up

email after the presentation was provided to each administrator for their prompt response and

support. During the first presentation at a larger building, an individual from the crowd suggested

a checklist for participants interested in the study. After that presentation, the researcher created

a checklist (see Appendix J) for participants to use to complete the study. This checklist was

updated (Appendix K) upon the IRB's approval of the amendment to the study. Lastly, the

researcher followed up with participants interested in the study. Follow ups consisted of email

reminders.

Reflecting upon the initial presentation of the study after IRB initially approved the

study, the researcher presented to potential participants of the non-rural school district

participating in the study at the end of the fourth quarter of a school year. Presentations later in

the school year may have conflicted with a general education teacher's schedule and professional

commitments. The researcher evaluated the responses after the initial presentation during the summer break and determined an IRB amendment was in order. Personal interviews and interview questions were added to an amendment to the research design and additional approval from the IRB sought. The result was the researcher gathered lengthy responses in regard to the preparation program experience of general education teachers. IRB approval for the amendment was received during the start of the second quarter of a school year, which provided the researcher with an advantageous timeframe to gather additional participants for the study. Based on the timeline of this study, it is recommended that future studies refrain from collecting survey data at the closing of a school year or right before an extended break.

Reflections

The findings of this research further supports a need for general education teacher training and preparation programs for teachers who provide individuals with a disability with instruction and, hopefully, learning within a general education classroom. Participants in the study represented a group of fifth through eighth grade general education teachers in charge of providing the majority of instruction and learning within their general education classrooms in a school district. At the time of this study, general education teachers agreed their own training and preparation programs did not entirely prepare them to teach individuals with a disability in their general education classrooms. As a result, we could generalize that teachers in general education classrooms require further knowledge and expertise in implementing and monitoring accommodations and modifications for individuals with a disability who have an IEP or 504 plan.

General education teachers must be aware of their role and responsibility as an education team member as it relates to implementation and monitoring of accommodations and

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modifications defined in an individual's IEP or 504 plan. An IEP is protected under the Individuals with Disabilities Education Act (IDEA), a special education law, and a 504 plan is protected by Section 504 of the Rehabilitation Act of 1973, a civil rights law. Since these documents are protected by federal laws, they are considered legal documents. Therefore, teachers must abide by the formalities of these legal documents in order to remain in compliance with local, state, and federal mandates. Based on these explanations, general education teachers require further support and guidance concerning the implementation and monitoring of accommodations and modifications for students on an IEP or 504 plan in their classrooms.

To meet legal requirements at local, state, and federal levels, school district administrators must consider what the best course of action is to address further training and professional development opportunities for general education teachers as it relates to implementation and monitoring of accommodations and modifications of students with difficulties learning in a general education classroom. A few ways school district administrators can improve general education teacher knowledge and understanding of accommodations and modifications for dyslexic students and other individuals with disabilities as shared by participants is to provide teachers with up to date information of IEPs and 504 plans in a timely manner, by utilizing pre-service, in-service, or building wide professional development to cover necessary information. In addition to the leaflet created by the researcher of this study, a school district could consider distributing a district guide for teachers to reference as an added support material for teachers. These incremental pieces of support and guidance might ensure teachers are equipped with an awareness of their roles and responsibilities and develop a willingness to implement and monitor accommodations and modifications for dyslexic students or other students with disabilities.

Lastly, participants expressed an eagerness to collaborate with their fellow special education counterparts. This eagerness was confirmed by Byrd and Alexander (2020), who explained student outcomes are reliant on the professional ties between general education teachers and special education teachers. The amalgamation of future staff and training opportunities involving general education teachers and special education teachers will merely enhance instruction procedures and learning outcomes for individuals with disabilities like dyslexia in classrooms. Coupled with the use of the leaflet presented by the researcher as a result of this study, teachers may be able to convey their effectiveness in implementing and monitoring accommodations and modifications in their general education classrooms by using reflective prompts in the leaflet.

Implications for Research

Further research in teacher preparation frameworks in three areas can produce further understanding and resolutions in regard to the need for general education teacher training. The three areas are in university programs, school districts, and state legislation. Based on participants' responses and in accordance with the research, general education teachers are more often than not completing at least one class that provides an overview of working with individuals with disabilities within their university teacher preparation programs. Further studies on higher education teacher preparation programs can ascertain whether teachers going into the field of general education are adequately prepared to provide instruction and learning to individuals with a disability and other struggling learners based on their teacher preparation program coursework.

In a second area of further research, according to participants' responses, general education teachers would like additional peer support from special education teachers, peer

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support in the form of communication and collaboration between general education teachers and special education teachers. A study could look at cooperative efforts between general education teachers and special education teachers and establish whether joint efforts increase student outcomes and teacher efficacy when general education teachers and special education teachers plan, model, and co-teach together.

Lastly, as state legislations around the country continue to implement certification, training, and professional development policy in regard to dyslexia, researchers need to examine effective teacher preparation programs that fulfill policy requirements. Further study and analysis can examine effective certification, training, and professional development frameworks that support general education teachers in late elementary grade levels—fifth and sixth—and the secondary education grade levels—seventh through twelfth grade. Since a good deal of research has been tailored towards supporting general education teachers in the primary education grade levels of kindergarten through fourth grade, more research is needed in higher grades.

Suggestions for Future Inquiry

The given study on *Dyslexia and the Need for General Education Teacher Training*, included 10 participants, teachers from general education classrooms. At the time of the study, these participants provided instruction and learning to fifth grade through eighth grade students in a non-rural school district. Participants completed surveys and interviews basing their responses upon their attitudes and perceptions of providing individuals with dyslexia instruction and learning in a general education classroom.

Selection criteria for this study were limited to general education teachers teaching late elementary grade levels (i.e., fifth and sixth grade) and middle school grade levels (i.e., seventh and eighth grade). Special education teachers were excluded from the study and general

education teachers teaching kindergarten through fourth grade or high school (i.e., ninth grade through twelfth grade) were also excluded. The researcher sought to understand thoughts and perceptions of teachers teaching the aforementioned grade levels since much of the research and the practitioner-based literature was centered on general education teachers teaching early to mid-elementary grade levels (i.e., kindergarten through fourth grade). It is possible, though, that results of this study could be generalized and applied to earlier or later grade levels.

A potential extension to this study would be to examine special education teachers' attitudes and perceptions in supporting and collaborating with general education teachers who provide instruction to and enable learning in individuals with dyslexia in a general education classroom. Special education teachers have experience working with individuals with disabilities. Special education teachers are often able to tailor their instruction to meet the needs of a student within their given learning environment (i.e., special education resource room or a general education classroom). Studying the dynamics of general education and special education teachers may support effective implementation and monitoring of accommodations and modifications for dyslexic students or individuals with disabilities in a general education classroom.

Furthermore, a study centered on effective implementation and monitoring practices in regard to accommodations and modifications in a general education classroom may further support general education teachers' attitudes and perceptions of individuals with dyslexia. Additionally, general education teachers could set effective and appropriate processes into practice based on results of this study. Results from this study may lead to teachers from all grade levels incorporating effective and appropriate processes for implementing and monitoring

accommodations and modifications for individuals with dyslexia. In other words, results of this study may be generalized or applied to grade levels outside the study.

Lastly, the researcher considered participants' responses and proposes further research is needed to meet training needs of teachers in general education who provide instruction and learning to individuals with dyslexia. Participants from this study suggested additional supportive materials, video tutorials, and modeling effective practices in a general education classroom conducted by a special education teacher or an instructional coach might be helpful. Further topics of study that would provide for dyslexic individuals in education, should be identified from research and practitioner-based literature. Topics should be based on peer reviewed journals, experts, and research-based models. Accommodations to help dyslexic students should be implemented and monitored for effectiveness.

APPENDICES

Appendix A

Interview Questions With Researcher

1. Reflect on your university program, what coursework supported you in teaching students with a disability (i.e., specific learning disability, dyslexia) and other struggling learners?

2. Compare your coursework and the completed modules, what changes can university programs do to ensure general education teachers are prepared to teach students with a disability (i.e., specific learning disability, dyslexia) and other struggling learners?

3. Reflect on your previous or present district, what professional development or training supported/supports you in teaching students with a disability (i.e., specific learning disability, dyslexia) and other struggling learners?

4. Compare your professional development/training and the completed modules, what changes can districts do to ensure general education teachers are prepared to teach students with a disability (i.e., specific learning disability, dyslexia) and other struggling learners?

5. From a general education teachers' perspective, what would you share with local and state agencies in order to ensure general education teachers are prepared to teach students with a disability (i.e., specific learning disability, dyslexia) and other struggling learners?

UNIVERSITY OF NORTH DAKOTA
Institutional Review Board
Study Information Sheet

Title of Project: **Dyslexia and the Need for General Education Teacher Training**

Principal Investigator: *Dr. Jared Schlenker, (701) 777-3584, jared.schlenker@und.edu*

Co-Investigator(s):   *Sheeresa S. Begay, sheeresa.begay@und.edu*

Purpose of the Study:
The purpose of this research study is to assess the needs of general education teachers delivering learning and instructional to students with dyslexia. Also, to provide general education teachers with an overview of dyslexia and teaching strategies to enhance learning and instruction for students with dyslexia.

Procedures to be followed:
You will complete a pre and post survey and along with a needs-based questionnaire at the beginning and end of the study to assess the needs of general education teachers. You will also complete two presentation modules with the topics of: dyslexia awareness and understanding from the students' and teachers' perspective and learning about effective teaching practices or strategies to use with students with dyslexia (i.e., how to assess students with dyslexia in the classroom, how to accommodate or modify assignments or classroom assessments for students with dyslexia, and how to support students with dyslexia in the classroom).

Risks:
There are no risks in participating in this research beyond those experienced in everyday life.

Benefits:
- You might learn effective teaching practices and strategies to use with students with dyslexia.
- The researcher might provide a better understanding to district, local, and state education representatives in reference to the needs of general education teachers when providing learning and instruction to students with dyslexia.
- This information could help improve current training and professional development practices and support future opportunities for general education teachers.
- This information might support students with dyslexia in general education classrooms.

Duration:
It will take you about 2 hours to complete all study activities.

Statement of Confidentiality:
The survey and questionnaire do not ask for any information that would identify who the responses belong to. Therefore, your responses are recorded anonymously. If this research is published, no information that would identify you will be included since your name is in no way linked to your responses.

All survey responses that we receive will be treated confidentially and stored on a secure server connected to the researcher's university. However, given that the surveys can be completed from any computer (e.g.,

Approval Date: __4/10/2022__

Expiration Date: _4/9/2025_

University of North Dakota IRB

personal, work, school), we are unable to guarantee the security of the computer on which you choose to enter your responses. As a participant in our study, we want you to be aware that certain "key logging" software programs exist that can be used to track or capture data that you enter and/or websites that you visit.

Right to Ask Questions:
The researchers conducting this study are Dr. Jared Schlenker and Sheeresa S. Begay You may ask any questions you have now. If you later have questions, concerns, or complaints about the research please contact Dr. Jared Schlenker at (701) 777-3584 during the day.

If you have questions regarding your rights as a research subject, you may contact The University of North Dakota Institutional Review Board at (701) 777-4279 or UND.irb@UND.edu. You may contact the UND IRB with problems, complaints, or concerns about the research. Please contact the UND IRB if you cannot reach research staff, or you wish to talk with someone who is an informed individual who is independent of the research team.

General information about being a research subject can be found on the Institutional Review Board website "Information for Research Participants" http://und.edu/research/resources/human-subjects/research-participants.html

Compensation:
You will have the option to be placed in a drawing to receive a $40 gift card.

Voluntary Participation:
You do not have to participate in this research. You can stop your participation at any time. You may refuse to participate or choose to discontinue participation at any time.

You do not have to answer any questions you do not want to answer.

You must be 18 years of age older to participate in this research study.

Completion and return of the survey, questionnaire, and presentation modules imply that you have read the information in this form and consent to participate in the research.

Please keep this form for your records or future reference.

| Approval Date: 4/10/2022 |
| Expiration Date: 4/9/2025 |
| **University of North Dakota IRB** |

Click on the link to access the UND Study Information Sheet you may send a copy to yourself or print the sheet. After reading you can click back into the Initial Survey and Questionnaire to complete your responses.

Please take a moment to read the University of North Dakota Institutional Review Board Study Information Sheet

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Educational Background

  ○ Bachelor's Degree (1)

  ○ Master's Degree (2)

How many degrees do you hold? (combined Educational Background for Bachelors and Master's only)

  ○ 1-2 (1)

  ○ 3-4 (2)

  ○ 5+ (3)

Are you planning on enrolling/or are you currently enrolled in a degree program?

    ○ No (1)

    ○ Maybe (2)

    ○ Yes (3)

How many completed years of general education teaching experience do you have?

    ○ 1-2 years (1)

    ○ 3-4 years (2)

    ○ 5-6 years (3)

    ○ 6-10 years (4)

    ○ 10+ years (5)

When does your teaching license in ND expire?

○ Less than 1 year (1)

○ Within 2 years (2)

○ Within 3 years (3)

○ Within 4 years (4)

○ Within 5 years (5)

○ Within 6 years (6)

How many professional development credits have you completed?

○ 1 (1)

○ 2 (2)

○ 3 (3)

○ 4 (4)

○ 5 (5)

○ 6 (6)

Fundamental Knowledge of Dyslexia

	Not knowledgeable at all (1)	Slightly knowledgeable (2)	Moderately knowledgeable (3)	Very knowledgeable (4)	Extremely knowledgeable (5)
Understanding and Awareness of Dyslexia (1)	○	○	○	○	○
Conditions of Dyslexia (2)	○	○	○	○	○
Signs and Symptoms of Dyslexia (3)	○	○	○	○	○

General Education Training and Professional Development in Dyslexia

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
My school offers/provides training and professional development in Dyslexia (1)	○	○	○	○	○
I have sought/requested individual training and professional development in Dyslexia (2)	○	○	○	○	○
I have received/completed individual training and professional development in Dyslexia (3)	○	○	○	○	○

In your classroom, are you ...

	Definitely not (1)	Probably not (2)	Might or might not (3)	Probably yes (4)	Definitely yes (5)
Implementing IEP or 504 Plan accommodations/modifications (1)	○	○	○	○	○
Using effective Teaching Practices or Strategies (2)	○	○	○	○	○
Receiving support and guidance with students on an IEP or 504 Plan (3)	○	○	○	○	○

What are your thoughts and feelings about providing learning and instruction to students with dyslexia in a general education classroom?

_____

How has your educational background, training, and professional development prepared you to provide learning and instruction to students with dyslexia in a general education classroom?

_____

After completing the Dyslexia Presentation Modules answer the following:

I have a better understanding _____.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
and awareness of Dyslexia (1)	○	○	○	○	○
of the conditions of Dyslexia (2)	○	○	○	○	○
of the signs and symptoms of Dyslexia (3)	○	○	○	○	○

I will share my need for training and professional development with _____.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Colleagues/Co-Workers (1)	○	○	○	○	○
Building-Level Administration (2)	○	○	○	○	○
District Administration (3)	○	○	○	○	○

I feel confident in _____.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Implementing IEP or 504 Plan accommodations/modifications (1)	○	○	○	○	○
Using effective Teaching Practices or Strategies (2)	○	○	○	○	○
Providing support and guidance to students on an IEP or 504 Plan (3)	○	○	○	○	○

How have your thoughts and feelings changed as you provide learning and instruction to students with dyslexia in a general education classroom?

_____

Do you plan on seeking further training or professional development opportunities to address students with dyslexia in a general education classroom?

_____

Appendix E

Script for Module Titled: Dyslexia Awareness and Understanding from a Student's and Teacher's Perspective

Slide 1

Welcome to the study titled, *Dyslexia and the Need for General Education Teacher Training.* In this first module you will get a clearer awareness and understanding of Dyslexia from a student's and teacher's perspective.

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Feel free to take notes and follow along. There will be pauses and times for you to write down thoughts and reflections.

Slide 2

Did you know that dyslexia effects approximately 20% of the population in the United States? (Bernadowski, 2017; Mills & Clarke, 2017)

Dyslexia is considered a specific learning disability. A specific learning disability is covered under the Individuals with Disabilities Education Act (IDEA). IDEA ensures "that all children with disabilities have available to them a free appropriate public education . . . to meet their unique needs and prepare them for further education, employment, and independent living" (Individuals with Disabilities Education Act, Sec. 300.1 Purposes, 2017, part a). If a student has an Individual Education Program often referred to as an IEP, they are covered under IDEA.

Dyslexia is also covered under Section 504 of the Rehabilitation Act. If a student has a 504 Plan, they are covered under the Rehabilitation act.

Slide 3

Let's take a moment … Get out a writing tool and paper and jot down your thoughts. How would you define dyslexia? Take 30 seconds to write your thoughts. (Pause for 30 seconds)

Here is a definition. Dyslexia is a neurobiological condition which "impacts an individual's phonological processing and phonological memory" (Mills & Clarke, 2017, p. 78). It affects an individual's capacity in spoken and written language within the areas of reading, comprehension, and fluency.

Let's talk about some misconceptions of dyslexia.

- Individuals with dyslexia see letters, words, and numbers backwards.

- Dyslexia can be treated through rigorous practice and through diligent teaching efforts.

- Dyslexia is only found in primary students.

- Dyslexia is due to the lack of exposure to literacy.

Now let's dispel these misconceptions of dyslexia with research.

- Dyslexia is more than seeing letters, words, and numbers backwards. It has to deal with how the brain receives messages and interprets them. Individuals with dyslexia struggle with "rapid-memory recall, fluently organizing thoughts for storing and retrieving, and the ability to fluently express thoughts."

- Dyslexia is not a disorder that can be treated, rather individuals can learn effective strategies to ameliorate their condition.

- Dyslexia can be diagnosed early in life during the preschool years or later in life during adulthood.

- Dyslexia is not due to lack of exposure to literacy; it is a neurobiological condition an individual has inherited.

Slide 5

Let's do an activity: Take a minute to read this excerpt. (Pause for 1 minute)

E ach chilb miths le arm imp biza dili tyis a niudiuib uald ut s omeg sne ral oberat eris tic a bo exist:

Ye oraye yas ever ape or ado veanerape Iwtel lip ence; so me oft he we re gre nelevt syw gto ws ap pear tod e — bis or ber sof wotor ac tivity; d. so r ber sofe wotional ity; b. sor be Rs off ber ceptiou; D i sorbersof concegtion; D, so. R be r s o f a tt en tiow; d, s orbers ofwe wory. (Anderson, 2006, p. 37)

Okay, let's come back. After reading this excerpt, write down your reflections after each prompt or question is read. Take a few seconds to write down your thoughts.

"1. List some of the things that made your reading task more difficult" (Anderson, 2006, p. 37). (Pause for 15 seconds)

"2. List some of the things you did that enabled you to read this paper" (Anderson, 2006, p. 37). (Pause for 15 seconds)

Let's come back to the next question. Lastly, *"What were some of your reactions or thoughts while attempting to read this?" (Anderson, 2006, p. 37)*. (Pause for 30 seconds). That concludes the 30 seconds. Here is the translation of the excerpt:

> *Each child with a learning disability is an individual but some general characteristics do exist:*
>
> *He/she has average or above average intelligence; some of the more prevalent symptoms appear to be — disorders of motor activity; disorders of emotionality; disorders of perception; disorders of conception; disorder[s] of attention; disorders of memory. (Anderson, 2006, p. 37)*

This activity captures what it is like for individuals with dyslexia to read.

Slide 6

From a student's perspective…

Individuals with dyslexia are aware of their learning differences compared to their peers. So, they learn to "compensate" for their differences. A student with dyslexia will: "**follow** their peers, **verbally [process] information**, rely on **rote memorization**, and [use] **hands-on or experiential learning contexts**" (Leseyane et al., 2018, p. 2).

Students with dyslexia often experience "distress" and "failure" and they lose confidence in their abilities and dislike going to school (Leseyane et al., 2018, p. 6). At school they isolate themselves from others to "avoid embarrassment" or being noticed. (Leseyane et al., 2018, p. 4). These external pressures lead to social-emotional and academic challenges (Leseyane et al., 2018).

Slide 7

Most often individuals with dyslexia are noticed when their "oral abilities" outweigh their written abilities. For instance, you may have a student that participates in class and is on task during discussions or conversations but if the student is taking a written assessment on the same topic, you notice inconsistencies (Hudson & English, 2016). Sometimes their behavior and performance in the classroom can be misinterpreted as being lazy or disorganized (Foss, 2013).

Common performance indicators can be found in **reading, spelling**, note-taking, tests and exams and written work.

Let's take a look at a few common indicators:

In the area of **reading**, a student with dyslexia will read inaccurately, have difficulty with comprehension if they are left to read aloud or independently because they "are concentrating on deciphering the words, so may miss the overall meaning" (Hudson & English, 2016, p. 29), and

they will often "substitute a similar looking word often starting with the same letter" (Hudson & English, 2016, p. 29).

In the areas of **writing and spelling**, a student with dyslexia may have "inconsistent spelling of the same word" (Hudson & English, 2016, p. 30) within a writing assignment, they may know how to spell a word one day and forget the next. Their written work may be difficult to read, and during a test or an exam they have "difficulty organising thoughts clearly and logically, so essays may ramble" (Hudson & English, 2016, p. 31), and they often run out of time to clearly state a response.

Slide 8

Next let's take a look at common behavior indicators of individuals with dyslexia in the classroom. Teachers may observe a **lack of concentration**, **slow processing speed**, poor short-term memory, struggles to learn information, **organization,** emotional response, and **fatigue**.

Students with dyslexia lack concentration and become easily distracted with their surroundings, they often make "rapid lateral mental leaps and connections" (Hudson & English, 2016, p. 32), which may appear as though they are off topic. They look at the big picture rather than details and they think out of sequence (Foss, 2013).

Students with dyslexia demonstrate slow processing speed; they may take a while to answer questions when asked to respond to a writing prompt. This happens because they are "having to change the information mentally" (Hudson & English, 2016, p. 32) into an understandable cognitive pathway before they are able to decode it and show their understanding (Hudson & English, 2016). Sometimes individuals with dyslexia become perplexed under pressure and they forget everything entirely even if its information they know well.

Students with dyslexia struggle with organization. They often "forget instructions and directions" (Hudson & English, 2016, p. 33). They get distracted; they are forgetful of materials and supplies needed for class, and they misplace their belongings (Hudson, 2016).

Students with dyslexia often become fatigued at school because they have "to put more effort into keeping up with work" (Hudson & English, 2016, p. 34) not to mention the amount of cognitive power they exude. Sometimes this "leads to increased tiredness, stress, and anxiety" (Hudson & English, 2016, p. 34).

Slide 9

Are you prepared to provide instructional delivery and support to students with dyslexia?

Indeed, "instructional practices for [student's] with dyslexia is a challenge for [general] education teachers, reading specialists, and special education teachers alike" (Bernadowski, 2017, p. 52).

Quality instruction for students with dyslexia "is explicit and systematic" (Bernadowski, 2017, p. 55). Educators must have in-depth understanding and knowledge in "phonology, semantics, sound-symbol correspondence, syntax and morphology" to support students with dyslexia (Bernadowski, 2017, p.55).

The next module will provide teaching strategies when working with individuals with dyslexia as well as understanding and implementing accommodations and modifications in the classroom to support a student's IEP or 504 Plan.

Slide 10

Here are words from Albert Einstein, an individual with dyslexia.

"Everybody is a genius. But if you judge a fish by its ability to climb a tree it will live its whole life believing that it is stupid" (Einstein, n.d., para. 1).

Thank you for completing the first presentation module in the series, you will advance to the next module titled, *Dyslexia and the General Education Classroom.*

Script for Module Titled: Dyslexia and the General Education Classroom Teaching Strategies and More

Slide 1

Welcome to the study titled, *Dyslexia and the Need for General Education Teacher Training.* In this second module you will learn effective teaching strategies to use in the general education classroom. As well as understanding and implementing accommodations and modifications for individuals with dyslexia who have an Individualized Education Program, an IEP or a 504 Plan.

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Slide 2

While it may be easy to gravitate towards challenges and struggles individuals with dyslexia exhibit in the classroom. It is equally important to highlight the many strengths and capabilities individuals with dyslexia possess. For instance, individuals with dyslexia are **innovative**, they can think of the unimaginable or unfathomable. They "excel in art" (Hudson & English, 2016, p. 34) and **creativity**. Their **multidirectional** thinking allows them to see the big picture. They are **problem-solvers**, and they have an **entrepreneurial mindset** which makes them successful (Foss, 2013; Hudson & English, 2016,).

Your attitude will foster the growth and progress individuals with dyslexia will achieve in the general education classroom. Continue to support their efforts by praising their progress, edifying their capabilities, and encouraging them to reach their goals. Your support and commitment will create a learning environment which fosters their efforts and empowers them as individuals (Hudson & English, 2016).

Slide 3

Next let's take a look at the most common areas of struggle for individuals with dyslexia and how you can incorporate explicit instructional strategies in the areas of reading, spelling, writing, homework, and lastly in tests and exams.

- Reading/Spelling-
- Writing
- Homework
- Tests and Exams

Most instruction and delivery in the general education classroom only meets two areas of the senses, sight and sound. Yet individuals with dyslexia learn concepts, tasks, and skills better when it's taught through a multisensory approach.

A multisensory approach addresses all the senses "visual, auditory, tactile and kinesthetic learning elements that activate different parts of the brain and benefits" individuals with dyslexia and their peers (Johnston, 2019, p. 340).

When incorporating a multisensory approach, think about ways instructional delivery can be enhanced using the following strategies. It's important to know your teaching style can remain the same you are just changing your delivery approach to implement the teaching strategies to support learning for individuals with dyslexia.

Slide 4 - Reading/Spelling Strategies

To support individuals with dyslexia in reading:

- Individuals with dyslexia need more time to read text, especially longer passages. If possible, provide use of audiobooks so they can focus on comprehending the subject matter. (Redford, 2014*).*

- The speed of processing information is slower with individuals with dyslexia because they are using their brain power to manage fluency, comprehension, and understanding while they read.

    o Peers and teachers can support individuals with dyslexia in rereading passages or instructions for accuracy

- Teachers "should always state the purpose for reading, which provides the student a reason for listening" (Johnston, 2019, p.343).

- For "greater reading fluency" use of font size/type and highlighting is helpful.

    o Font Size can make a difference in reading, 14-point font on paper and 18-point font on the screen.

    o Font types like Arial, Verdana and Helvetica have less crowded letters. Whenever possible avoid the use of italics.

    o Highlighting helps "improve reading comprehension," for assignments highlight "keywords or bold text" for students. (Haight, 2022, p. 39, Kindle Edition).

Individuals with dyslexia "struggle to properly hear individual letters in a word, they often mispronounce the word, which causes them to spell it based on the phonetic mispronunciation" (Johnston, 2019, 341).

To support individuals with dyslexia in spelling:

- "Create a list of key spellings for each [learning] topic" (Hudson & English, 2016, p. 37).

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Individuals with dyslexia can create a "vocabulary book or glossary" (Hudson & English, 2016, p. 37) to extend their spelling knowledge.

- "Electronic/dictionaries/spellers are technology tools that can be used to strengthen critical thinking skills, vocabulary skills, and background knowledge" (Johnston, 2019, 343).

  - Give individuals with dyslexia time to practice these tools and monitor their use. Sometimes spell checkers will spell a word correctly but it could be used in the incorrect context, for example, They're from North Dakota could be spelled T-H-E-R-E rather than T-H-E-Y apostrophe R-E.

Slide 5 - Writing Strategies

Because "students with dyslexia have difficulty expressing their ideas on paper", the use of writing strategies will support their writing process (Johnston, 2019, 341).

To support individuals with dyslexia in Writing:

- When applicable individuals with dyslexia can use a computer to record their thoughts and ideas.

- "Graphic organizers have been found to help students with dyslexia internalize how the ideas of the content are related, and this leads to greater comprehension as they are [] writing" (Johnston, 2019, 342).

- Peers and teachers can provide individuals with dyslexia additional support by "helping them expand or develop their ideas by asking questions" (Johnston, 2019, 343).

- "Provide sentence starters that give examples for written responses" to support the writing process. (Johnston, 2019, p.343).

- Indicate the amount of pages and timeframe for writing pieces. Have the student turn-in their work so you can check for accuracy of the prompt (Hudson & English, 2016).

"Until a student's writing becomes automatic and fluent, their ability to focus on other parts of the writing process is impeded." (Johnston, 2019, 342). During the writing process focus on the content rather than spelling and grammar.

Slide 6

To support individuals with dyslexia in Homework:

- Provide an example of what you want the student to demonstrate. Giving the student an example of assignment expectations improves their understanding (Haight, 2022).

- Reducing the amount homework will support a balanced course load for individuals with dyslexia. Focus on the essential content you want the student to demonstrate (Hudson & English, 2016; Johnston, 2019).

- Because individuals with dyslexia struggle with details make sure your instructions are short and explicit leaving no room for ambiguity (Haight, 2022). For instance, write a paragraph about what happens to the characters from Chapter 13 is a vast question open to interpretation. Instead say, Write about **one important event** the character experienced in Chapter 13, next share how the character felt **before and after** the event.

Slide 7

To support individuals with dyslexia in **Test and Exams**:

- "New or difficult information should be presented in small, sequential steps. This helps [individuals] with dyslexia who may have limited prior knowledge and need explicit or part-to-whole instruction" (Johnston, 2019, 344).

- Whenever possible, provide students with the option to take their test or exam orally (Hudson & English, 2016).

- Consider reducing the number of questions when student's need to complete their assessment in one sitting (Hudson & English, 2016).

- Consider giving the student more time to take an assessment. If reducing the number of questions is not possible (Hudson & English, 2016; Morin, 2021b).

Slide 8

"Accommodations in the classroom can be the difference between academic success and academic failure and frustration" (Sandman-Hurley, 2014, para. 9).

What's the difference?

The definition of **accommodations** is an "alteration of environment, curriculum format, or equipment that allows an individual with a disability to gain access to content and/or complete assigned tasks" (AccessComputing, n.d., para 1). The definition of **modification** is "a change in what is being taught to or expected from the student" (Center for Parent Information & Resources, 2020, para 5).

Slide 9

Let's look at the implementation of accommodations and modifications in different contexts:

- The Curriculum:

    o An accommodation to the curriculum gives the student access to the same curriculum given to peers and is categorized as an accommodation when a student receives large-print text to follow along in class.

    o A modification to the curriculum lets the student achieve the given curriculum as peers when a student continues to work on prerequisite skills before moving onto the next step in a lesson.

- Learning Expectations:

    o Learning expectations and outcomes are the same in an accommodation because a student has access to a text-to-speech software for a reading assignment also given to their peers.

    o Learning expectations and outcome are different with modifications because a student will be offered few homework problems than their peers.

- Tools and Materials:

    o Tools and materials are considered an accommodation when the student is able annotate their response rather than writing their response.

    o Tools and materials are considered a modification when the student's questions for an assessment are reworded compared to their peer's assessment questions.

- Grading:

    o For an accommodation to grading, a student may be read the same questions on an assessment given to the class.

    o For a modification to grading, a student might only work on 3 out of 5 concepts. A modification in grading is focused on meeting a student's development level and learning need.

Accommodations and modifications are meant to help individuals with disabilities succeed in general education.

Slide 10

Here are a few resources you can look into to continue to support your understanding and awareness of dyslexia.

Resources

- **International Dyslexia Association (IDA)** is "dedicated to helping dyslexic individuals and the families who support them" (DyslexiaHelp, n.d., para 4).

- **LD Online** "provides up-to-date information on learning disabilities and ADHD for adolescents, adults, parents, and professionals. There are numerous articles and forums, . . . a directory of professionals, schools, products, and much more" (DyslexiaHelp, n.d., para 5).

- **Yale Center for Dyslexia & Creativity** provides information, resources and advocacy, and current research to support individuals with dyslexia and increase the awareness and understanding of dyslexia (The Yale Center for Dyslexia & Creativity, n.d.)

Further Professional Development and Training Opportunities

- **International Dyslexia Association (IDA)** offers webinar series to education professional and families to address the instructional needs of individuals with dyslexia and other learning differences (International Dyslexia Association, 2021).

- **Language Essentials for Teachers of Reading and Spelling (LETRS® Suite)**, a professional development program, provides educators and administrators with intense knowledge in literacy and language through evidence-based research (Lexia®, n.d.).

- **Keys to Literacy** offers professional development and free resources to educators to "teach literacy skills to all students in all subjects" (Keys to Literacy, n.d., para. 1).

Slide 11

Closing

General education teachers can use the aforementioned strategies to enhance instruction and learning opportunities for students with dyslexia. With appropriate interventions and instructional strategies "students with dyslexia can be successful in learning to read and write" (Johnston, 2019, p.344). Additionally, the research supports the effectiveness of implementing teaching strategies and interventions that are "explicit, structured, multisensory, and engaging." (Johnston, 2019, p.344).

In closing individuals with dyslexia can reach academic success when their general education teachers have an awareness and understanding of dyslexia paired with effective teaching strategies and interventions.

Thank you for completing the second presentation module in the series. Next take a moment to complete the post survey and questionnaire.

Institutional Review Board Amendment Approval on 10/11/2022

UNIVERSITY OF NORTH DAKOTA
Institutional Review Board
Study Information Sheet

Title of Project: **Dyslexia and the Need for General Education Teacher Training**

Principal Investigator: Dr. Jared Schlenker, (701) 777-3584, jared.schlenker@und.edu

Co-Investigator(s):   Sheeresa S. Begay, sheeresa.begay@und.edu

Purpose of the Study:
The purpose of this research study is to assess the needs of general education teachers delivering learning and instruction to students with dyslexia. Also, to provide general education teachers with an overview of dyslexia and teaching strategies to enhance learning and instruction for students with dyslexia.

Procedures to be followed:
You will complete a pre and post survey and along with a needs-based questionnaire at the beginning and end of the study to assess the needs of general education teachers. You will also complete two presentation modules with the topics of: dyslexia awareness and understanding from the students' and teachers' perspective and learning about effective teaching practices or strategies to use with students with dyslexia (i.e., how to assess students with dyslexia in the classroom, how to accommodate or modify assignments or classroom assessments for students with dyslexia, and how to support students with dyslexia in the classroom). Lastly, you may opt in for the in-person extension questionnaire with the researcher.

Risks:
There are no risks in participating in this research beyond those experienced in everyday life.

Benefits:

- You might learn effective teaching practices and strategies to use with students with dyslexia.
- The researcher might provide a better understanding to district, local, and state education representatives in reference to the needs of general education teachers when providing learning and instruction to students with dyslexia.
- This information could help improve current training and professional development practices and support future opportunities for general education teachers.
- This information might support students with dyslexia in general education classrooms.

Duration:
It will take you about 2 hours to complete all study activities. An additional 30 minutes will be needed to complete the opt-in in-person questionnaire.

| Approval Date: ___10/11/2022_____ |
| Expiration Date: _4/9/2025_____ |
| **University of North Dakota IRB** |

Statement of Confidentiality:

The survey and questionnaire do not ask for any information that would identify who the responses belong to. Therefore, your responses are recorded anonymously. If this research is published, no information that would identify you will be included since your name is in no way linked to your responses.

All survey responses that we receive will be treated confidentially and stored on a secure server connected to the researcher's university. However, given that the surveys can be completed from any computer (e.g., personal, work, school), we are unable to guarantee the security of the computer on which you choose to enter your responses. As a participant in our study, we want you to be aware that certain "key logging" software programs exist that can be used to track or capture data that you enter and/or websites that you visit.

Right to Ask Questions:

The researchers conducting this study are Dr. Jared Schlenker and Sheeresa S. Begay You may ask any questions you have now. If you later have questions, concerns, or complaints about the research please contact Dr. Jared Schlenker at (701) 777-3584 during the day. If you have questions regarding your rights as a research subject, you may contact The University of North Dakota Institutional Review Board at (701) 777-4279 or UND.irb@UND.edu. You may contact the UND IRB with problems, complaints, or concerns about the research. Please contact the UND IRB if you cannot reach research staff, or you wish to talk with someone who is an informed individual who is independent of the research team.

General information about being a research subject can be found on the Institutional Review Board website "Information for Research Participants" http://und.edu/research/resources/human-subjects/research-participants.html

Compensation:

You will have the option to be placed in a drawing to receive a $40 gift card. Additionally, participants who complete the in-person extension questions will receive a $15 gift card to a place of their choice (i.e., local shop or eatery, online retailer). This option is limited to the five participants.

Voluntary Participation:

You do not have to participate in this research. You can stop your participation at any time. You may refuse to participate or choose to discontinue participation at any time.

You do not have to answer any questions you do not want to answer.

You must be 18 years of age older to participate in this research study.

Completion and return of the survey, questionnaire, and presentation modules imply that you have read the information in this form and consent to participate in the research.

Please keep this form for your records or future reference.

| Approval Date: 10/11/2022 |
| Expiration Date: 4/9/2025 |
| **University of North Dakota IRB** |

Appendix H

Email Sent to Building Administrators to Present Study to Staff

Good _____,

My name is Sheeresa S. Begay. I am approaching my last year as a graduate student at the University of North Dakota within the Educational Practice and Leadership program. I am delighted to be part of the "non-rural" school district; we have a wealth of experienced and dedicated educational professionals. In determining where my research should be conducted it was without hesitation I thought of our district.

On April 10, 2022, I received approval from my Institutional Review Board at the University of North Dakota to conduct research on human subjects to fulfill my graduate degree requirements for my dissertation. I wanted your guidance on the best way to reach out to your teachers in Grades 5-8 within your building in order to complete my study.

Attached you will find the following supporting documents:

- District Letter of Support
- Flyer for the Study *
- Study Information Sheet *

* Grade 5-8 Teachers will receive this document.

Let me know if you have any further questions. I look forward to hearing from you

Best,

Sheeresa S. Begay, M.A.Ed. and M.S. Ed

Appendix J

Initial Email Sent to Teachers Interested in Study

Hello _____,

Below is a checklist to complete the study anonymously if you are interested:

Begay UND Study: Dyslexia and the Need for General Education Teacher Training

Duration: At least 1 hour, each step can be completed at your own pace individually or all at once.

Completion by June 15, 2022

- Step 1: Complete Initial Survey and Questionnaire for the Study
- Step 2: Watch Module 1: Dyslexia Understanding and Awareness
- Step 3: Watch Module 2: Dyslexia and the General Education Classroom
- Step 4*: Complete the Post Survey and Questionnaire for the Study

* Optional Gift Cart ($40 amount) at the end of Step 4

Best,

Sheeresa S. Begay, M.A.Ed. and M.S. Ed

Email Sent to Teachers Interested in Study After IRB Amendment

Hello _____,

Thank you for your interest in participating in the study. Here is a checklist to complete the

study:

Begay UND Study: Dyslexia and the Need for General Education Teacher Training

- Step 1: Complete Initial Survey and Questionnaire for the Study
- Step 2: Watch Module 1: Dyslexia Understanding and Awareness
- Step 3: Watch Module 2: Dyslexia and the General Education Classroom
- Step 4: Complete the Post Survey and Questionnaire for the Study
- Step 5: Email Sheeresa, schedule a time to complete extension questionnaire (attached for reference) in-person or over the phone.

Best,

Sheeresa S. Begay, M.A.Ed. and M.S. Ed

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