

A PHENOMENOLOGICAL STUDY OF EARLY CHILDHOOD TEACHERS'  
LIVED EXPERIENCES AND PERCEPTIONS OF THEIR TRAINING  
IN RECOGNIZING DYSGRAPHIA IN YOUNG CHILDREN

by

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Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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## Abstract

The purpose of this phenomenological qualitative study was to examine the lived experiences of early childhood teachers who are seeking to recognize the warning signs of dysgraphia in young children. The learning disorder known as dysgraphia affects written expression and can affect a student's academic development, achievements, and self-efficacy. The study was conducted via Zoom at two Oklahoma public schools and one Texas public school. The 12 participants were active early childhood teachers who individually expressed their knowledge and perceptions on the recognition of dysgraphia through a written letter, an interview, and a focus group. One central research question guided the study: What are the lived experiences and perceptions of early childhood teachers of their training in recognizing dysgraphia in young children? The research focused on students with dysgraphia, the knowledge of dysgraphia warning signs, and the students' and teachers' self-efficacy concerning the recognition process of dysgraphia in their natural setting. The theoretical framework that guided this research came from Bandura's social learning theory and Vygotsky's sociocultural theory. Hermeneutic, phenomenological data studied the lived experiences, revealed important themes within the phenomenon, and assessed the researched content by reflecting the parts and the whole for a holistic understanding of the data. Four major themes emerged from the data analysis: (a) dysgraphia definition, (b) warning signs, (c) accommodations and modifications, and (d) college preparation. The interpretation of the study's findings, the limitations of the study, and future research recommendations were examined.

*Keywords:* agraphia, dysgraphia, specific learning disability, self-efficacy

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## Dedication

I dedicate this dissertation to my heavenly Father and to my loving family. Through every stage of my life, I have seen God's hand and through every step of this doctoral program, He has proven his love and faithfulness. Everything I do, and hope to do, is for His glory alone. To my family, I am forever grateful for your love, prayers, and encouragement. Mom, you allowed me to call and voice my exhaustion and fear countless times, and you always encouraged me to "rise above it" and keep moving forward. Dad, your support and prayers kept me going when everything in me wanted to give up. To know that I have made my family proud is a joy that I can't quite express. I love you all, profoundly!

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### **List of Abbreviations**

DSM-5, *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition

ICD-11, International Classification of Diseases, 11th edition

IRB, Institutional Review Board

WISC-V, Wechsler Intelligence Scale for Children, 5th edition

## **CHAPTER ONE: INTRODUCTION**

### **Overview**

Dysgraphia is one of several types of learning disabilities. The warning signs of this disorder are often not detected in early childhood classrooms since warning signs are not recognized when handwriting and written expression instruction begin. Dysgraphia is a neurological disorder that is characterized by difficulty with written expression. Dysgraphia can appear as a struggle with writing, including letter illegibility, slow, labored writing, spelling difficulty, and complications with syntax and composition (Chang & Yu, 2017). In children, it typically emerges with the introduction of handwriting. Despite instruction, errors are made in letter size, spelling, and spacing. Brian et al. (2017) identified considerable variance in early childhood training in the preparation of special needs instruction. The purpose of this study was to examine what type of preparation is provided for early childhood teachers regarding the recognition of dysgraphia. The background for this study, problem statement, purpose statement, study significance, research questions, and definitions are addressed in this chapter.

### **Background**

The learning disability known as dysgraphia is not uncommon. As many as 10% to 34% of school-aged children have dysgraphia (Rosenblum, 2018). Dysgraphia is historically labeled as an impairment with warning signs such as writing with a mixture of uppercase and lowercase letters; writing letters with irregular shapes and sizes; leaving letters unfinished; having an uncomfortable or inappropriate writing utensil grip; making spelling errors; writing too slowly or too quickly; talking aloud when writing; disliking writing tasks; experiencing stress, frustration, anxiety, or physical pain from writing; and experiencing difficulty with spatial awareness (Learning Disabilities Association, 2015). Socially, when students have dysgraphia, their self-

efficacy can suffer, and their academic achievements can be lessened (Rosenblum, 2018). The social learning theory by Bandura and the sociocultural theory by Vygotsky have examined the development of writing in a variety of contexts. According to McCloskey and Rapp (2017), it is crucial to advance our knowledge of the disorder in early childhood and adulthood to improve understanding, treatment, and recognition.

### **Historical Context**

Historically, dysgraphia has been considered an impairment with how an individual's hands operate. Dysgraphia originates from a Greek word:

The base word *graph* refers both to the hand's function in writing and to the letters formed by the hand. The prefix *dys* indicates that there is impairment. The suffix *ia* refers to having a condition. Thus, *dysgraphia* is the condition of impaired letter writing by hand, that is, disabled handwriting. (International Dyslexia Association, 2021, para. 1)

Dysgraphia can also be indicated by an impairment in written expression (Abdulkarim et al., 2017). Historically, dysgraphia was defined as an impairment of written text production (Chung et al., 2020).

Studies in the 1800s recognized a disability labeled as "agraphia" and defined it as an impairment in writing due to damage to the brain. According to Tiu and Carter (2022), agraphia is a disruption due to acquired damage to the brain where once previously intact written expression abilities occurred. With agraphia, the inability to communicate effectively through writing could be from brain damage affecting spelling, visual-spatial orientation, visual perception, language processing, motor planning, or fine motor control. Speech and written expression were researched, and disagreements have continued to surface as to what area of the brain affects memory, writing, speech, and visual acuity (Henderson, 2010). Primitive

explorations were done without the benefit of modern brain imaging, so early ideas were speculative and often erroneous.

The Russian psychologist Lev Vygotsky addressed the formation of inner speech and how it translated into written expression. This translation occurs through a method of internalization where language is the key component. Vygotsky (1978) defined the method of internalization as an “internal reconstruction of an external operation” (p. 56). He highlighted how a thought moves from word meaning to inner speech, from inner speech to oral drafts, and then finally into writing (Barrs, 2016). In his construct, he explained the progression of thoughts being expressed in writing when inner speech senses develop their meaning into symbols for others to perceive (Vygotsky, 1962).

In the 1960s, written expression difficulties were still associated with brain damage, and studies about brain representation were increased by the separation of cerebral hemispheres to regulate intractable epilepsy (Luessenhop et al., 1970). With these studies came dissociations between the brain’s two hemispheres. Michael Gazzaniga (1939- ), Joseph Bogen (1926-2005), and Roger Sperry (1913-1994) recognized that before a split-brain surgery, patients could typically write decipherably with their left hand, but after the surgery, they could only produce scribbles that appeared meaningless.

Two decades into the 21st century, we knew that dysgraphia can correlate with visual-motor impairments, coordination difficulties, language problems, motor execution, and/or cognitive impairments. Dysgraphia has been discovered in other disorders like dyslexia, attention deficit disorder, or developmental disorders that impair coordination (Gargot et al., 2020). Neither the *Diagnostic and Statistical Manual of Mental Disorders, 5th edition* (DSM-5) or the *International Classification of Diseases, 11th edition* (ICD-11) recognize dysgraphia as a



disorder, but rather they view it as a neurodevelopmental disorder (American Psychiatric Association, 2013; World Health Organization, 2021). The American Psychiatric Association (2013) recognizes dysgraphia as a specific learning disorder of written expression.

### **Social Context**

Individuals who live with disabilities reside with varied and, at times, significant limitations. Often this diverse group suffers from exclusion within their communities (Krahn et al., 2015). Frequently, learning disabilities like dyslexia are not being identified and treated in educational systems (Chung et al., 2020). When learning disabilities are not recognized and treated, the disability can present a challenge both socially and academically. Behavior marked as antisocial is documented in those experiencing substance abuse, destitution, and emotional complexities as well as those in juvenile detention facilities and prisons (Siegel, 2019). Often as a result of lack of identification and treatment of their learning disabilities, individuals suffer from emotional difficulties (Siegel, 2019). Rates of occurrence of intellectual disabilities in prisons vary widely, from 2% to 40%, contingent on the methods and diagnostic approaches used (Muñoz García-Largo, 2020). Children with unrecognized learning difficulties do not obtain adequate support or assessment to have their needs met by the authorities who surround them (Rimehaug et al., 2018).

An ability to write is critical for success in school and later in most work environments. Unfortunately, a sizeable percentage of young students struggle with the writing impairment dysgraphia (McCloskey & Rapp, 2017). It is estimated that as many as 7% to 15% of young children struggle with some form of writing deficiency (Döhla et al., 2018). Dysgraphia can impair almost all school subjects, create chaos, and devastate a child's success in school (Eide & Eide, 2006).

If dysgraphia is not recognized until adolescence, the damage to students' self-esteem and academic performance can have lasting effects. Dysgraphia is an impairment that is unusually public and leaves visible traces on a student's schoolwork. Children who experience handwriting difficulty tend to have lower achievement and attention capabilities than their classmates without impairments. According to Ahirwal and Gupta (2022), "Children spend 31%-60% of their school day writing by hand and performing other fine motor tasks. Difficulties in these skills can adversely affect academic achievement" (p. 76). Social interactions in the classroom can decrease, and limited compositional fluency can lead to the need for more time to adequately complete classroom tasks (Verma et al., 2019). The damaging effects of dysgraphia are not limited to children. Unrecognized dysgraphia can have serious effects into adulthood. Adults who suffer from writing deficiencies can experience challenges with everyday tasks that require writing, and this obstacle can ultimately hinder career choices or advancement (McCloskey & Rapp, 2017).

Teachers' perspectives vary regarding their training and preparation in teacher education programs. According to Buğday and Sarı (2022), training "is understood to be in the form of in-service training seminars, teaching methods and techniques, understanding students with dysgraphia, material preparation seminars, individualized training program preparation seminars, exercise training seminars, and diagnostic programs" (p. 37). Often, from teachers' points of view, the teaching techniques and methods of teaching prove to be the training aspects most needed when recognizing dysgraphia in their students; the area least needed were seminars focusing on individualized education programs (Buğday & Sarı, 2022). When teachers critically evaluate their education and training in view of their classroom effectiveness, it can be beneficial to their professional growth and their students' academic progression.

## **Theoretical Context**

The theoretical framework that guided this research came from Bandura's (1977) social learning theory and Vygotsky's (1962) sociocultural theory. Both theories support a closer examination of the development of writing and the struggles that can be experienced for those who live with dysgraphia. Cooperative learning through social interactions, self-perception, and motivation that is culminated intrinsically are areas of emphasis when both theoretical frameworks are used to highlight the understanding of early childhood teachers to recognize the warning signs of dysgraphia in young children.

Social learning theory affirms that learning occurs in the context of social exchanges (Bandura, 2002). Bandura (1993) addressed the component of individuals' self-efficacy and how it can directly influence what they think, how they behave, and what motivates them. Within this study, the significance of positive self-efficacy in education is acknowledged. When considering teachers' self-efficacy, and how they can successfully identify students with dysgraphia, one must consider the learner's social setting and opportunities for observation, consequences, reinforcement, and routine behavior.

When considering teachers' perceptions of their training in recognizing dysgraphia in young children, it is significant to consider their own capabilities. Individuals' self-efficacy increases if they believe that they can successfully perform a task they previously observed others accomplish (Shi, 2018). Teachers can experience numerous demands throughout their workday, such as providing an effective learning environment for all their students. While attempting to fulfill their professional demands, educators who struggle with negative self-efficacy can experience a feeling of depression (Bandura, 1993). Bandura explained that educators who have low self-efficacy in their instructional capabilities devote extra time to

nonacademic pursuits, are disparaging of their students who are not successful, and tend to give up on their students who are not quick at attaining achievement. Numerous adverse habits can occur when individuals struggle with low self-efficacy. Often those whose self-efficacy is low will avoid tasks that seem challenging, project low aspirations, exhibit ineffectual commitment, avoid goal completion, and often experience feelings of anxiety or depression (Bandura, 1993). Students with special learning needs, like those who suffer from dysgraphia, benefit from supportive and attentive teachers.

Students who struggle with dysgraphia often feel misunderstood and lack the support and understanding needed for success. For students with learning disabilities, it is necessary to consider inclusion, peer acceptance, and their feelings towards belonging (Rose et al., 2015). Beginning in early childhood, schoolchildren can start to question their capability to succeed. According to Vygotsky (1986), writing requires thoughtful, analytical action on the part of the child. The sound structure of each internal word must be divided, copied in alphabetical symbols, and put in a particular sequence to form a sentence. When students have difficulty putting their inner thoughts into written words, they can experience negative feelings. Students with disabilities like dysgraphia often face low self-confidence and questions about their own abilities and areas of weakness; hence, there is a need for consideration of the psychological value of their self-efficacy (Ab Halim, 2019). Mastery experiences mean that an individual's self-efficacy can be increased when the person successfully completes tasks or assignments (Shi, 2018). Bandura (2001) recognized that a student's self-efficacy beliefs pertaining to social interactions, academic achievement, and self-regulation could be predictors for academic goals and achievements.

### **Problem Statement**

The learning disability labeled as dysgraphia is often not recognized and analyzed until early adolescence, and this lack of early recognition hinders students' academic success and career opportunities (Kohli et al., 2018). When early childhood teachers can recognize dysgraphia, there is a higher chance of intervention and assistance, which will increase the student's chances of academic success. A significant number of young children struggle with dysgraphia—a disorder of written expression, including letter legibility, letter development, spacing, spelling, grammar, composition, and fine motor coordination—despite cognitive potential and sufficient learning opportunities (Chung et al., 2020). Specific learning disabilities can produce scholarly underachievement. There is a prevalent demand for early identification of learning disabilities in schools so that early detection and remedial intervention can support schoolwork (Bandla et al., 2017). Current research that addresses dysgraphia is not specific on how early childhood teachers should recognize the warning signs in their classrooms. Despite the significant impact that can be caused by developmental dysgraphia, the subject has received little consideration from researchers (McCloskey & Rapp, 2017). Dysgraphia is often not recognized and treated in the early childhood grades, and this absence of identification can hinder academic achievement and future career opportunities.

### **Purpose Statement**

The purpose of this phenomenological qualitative study was to examine the lived experiences of early childhood teachers who are seeking to recognize the warning signs of dysgraphia in young children. At this stage in the research, dysgraphia is generally defined as a neurological disorder characterized by difficulty in written expression (Chang & Yu, 2017). Through this research, I hope to establish the need for early childhood teacher preservice

instruction on the recognition of dysgraphia as an area of importance for colleges and universities. The theoretical framework guiding this study is derived from Bandura's (1977) social learning theory and Vygotsky's (1962) sociocultural theory. This study bridges a gap in the literature on the topic of early childhood recognition of students with dysgraphia.

### **Significance of the Study**

It is important to recognize that all children, regardless of their unique way of learning, can be successful. The present study focused on early childhood education undergraduate courses and the potential benefits in preparing teachers to recognize dysgraphia. Dysgraphia and specific learning disabilities in written expression are more common in public schools than the fraction of students who are identified and given remediation (Harrison & McManus, 2017; Rosenblum & Gafni-Lachter, 2015). Even though learning complications may begin during early school-aged years, the difficulties may not be recognized until later grades when task complexity often increases (American Psychiatric Association, 2013). Early childhood educators must know how to recognize and address the various issues related to dysgraphia.

### **Theoretical Significance**

This study looked at Bandura's social learning theory and Vygotsky's sociocultural theory in relation to the development of writing. The study contributes to recognizing the perceptions of early childhood teachers in acknowledging dysgraphia. Writing is a skill established early in the childhood grades, and it is important for learning as well as daily living activities. Academic and environmental difficulties intensify with age. Dysgraphia, though relatively common in children, can be mistaken or overlooked by the student's school and family (Chung et al., 2020). The lack of identification can have a significant impact on a student's life in and out of school (Harrison & McManus, 2017).

### **Empirical Significance**

The empirical significance of the study is in demonstrating how early childhood teachers perceive their ability to recognize dysgraphia in the classroom. The study includes further empirical research to determine if self-efficacy can increase recognition and intervention for students with dysgraphia. Based on Bandura's research, those who believe in their own capabilities are more likely to execute a course of action. Bandura (1997) referred to self-efficacy as "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3). In this study, positive teacher self-efficacy would be demonstrated by recognizing the warning signs of dysgraphia and implementing a plan of intervention. Ma and Cavanagh (2018) stated that individuals achieve self-efficacy from vicarious involvement, and this necessitates observing others' behavior and outcomes. Teachers will be able to use this research to not only recognize their own perceived abilities in recognizing dysgraphia in their early childhood classrooms but also confidently implement accurate accommodations and interventions. Methods that indicate the knowledge and skills in teacher preparation and certification were the clearest predictors of student achievement (Pit-ten Cate et al., 2018). Bandura (1990) suggested that expertise not only involves knowledge and abilities, but also the capability to use this understanding effectively in a variety of situations and in diverse circumstances, many of which are unpredictable and demanding. There is a need for research on the training provided to early childhood teachers on the recognition of dysgraphia.

### **Practical Significance**

The practical significance of the study is its impact on the preparation of early childhood teachers in recognizing dysgraphia. Higher education, school administration, teachers, and parents can use the findings to acknowledge the need for dysgraphia recognition in the early

grades to avoid academic struggle. The study's findings assist in creating beneficial learning and intermediation opportunities inside and outside of the classroom. Teachers can adapt their diagnosis and teaching interventions in their students' earlier learning stages (Drotár & Dobeš, 2020). Early analysis is imperative to treatment and success. The longer a student suffers with writing difficulty, the more challenging it can be to treat; hence, diagnosis and treatment are important steps in the remediation of dysgraphia (Abdulkarim et al., 2017).

### **Research Questions**

The central research question of the study asked: *What are the lived experiences and perceptions of early childhood teachers of their training in recognizing dysgraphia in young children?* The research subquestions concentrated on the lived experiences and what preparation was provided to early childhood teachers as they completed their certification. The inquiries attempted to examine how warning signs of dysgraphia were discussed in undergraduate early childhood courses and what prior experiences may affect the formulation of discernment toward the recognition of dysgraphia. It was the goal of the research questions to gain knowledge about the perceptions of early childhood teachers regarding their preparation related to recognizing the warning signs of dysgraphia.

#### **Research Question One**

*How do early childhood teachers describe their lived experiences and preparation for the signs of dysgraphia with students in prekindergarten through third grade?*

This question addresses the need for thorough instruction concerning the warning signs that can be recognized with dysgraphia. This question addresses what instruction was presented in undergraduate courses and if assessment and intervention were included in assisting with learning disorders. According to Rosenblum (2018),



Despite evidence of dysgraphia among 10% to 34% of all school-aged children, research on developmental dysgraphia is sparse. Fine motor activities and predominantly writing tasks compose 31% to 60% of an average school day. Therefore, handwriting deficits as such or dysgraphia can harm children's confidence and self-image, and consequently affect their academic achievements. (p. 377)

### **Research Question Two**

*How do early childhood teachers regard their training concerning the warning signs of dysgraphia in undergraduate early childhood courses?*

This question refers to the assessment data and reflective practices that are collected from the curriculum and methods that introduce dysgraphia in undergraduate courses. Rather than simply presenting the information, does the instructor assess the preservice teachers' understanding of the content? The constant new demands on society and the economy, the continuous specializations in scientific fields, and the integration of innovative technologies for education create a need for review of the characteristic procedures for teacher training (Gormaz-Lobos et al., 2021).

### **Research Question Three**

*What lived experiences do early childhood teachers believe may have affected their self-efficacy in how children learn through social interaction, and how does this assist in recognizing the early warning signs of dysgraphia?*

This question refers to previous experiences that may have occurred outside of undergraduate education courses. This question also references Vygotsky's sociocultural theory and the more knowledgeable other skill that focuses on how children learn from someone more proficient in the tasks being taught. By seeking to illuminate specific perceptions, one must

consider the prior knowledge of the content area and where instruction needs to begin. Educators can provide their students with a content-specific assessment that targets their prior knowledge most relevant to the material addressed in the course. As data are organized, factors on student engagement and prior knowledge may potentially influence their students' academic achievement (Davis et al., 2020).

### **Definitions**

The following terms are defined to help the reader understand the context of each term in the study:

1. *Agraphia*. The disruption due to acquired damage to the brain where once previously intact written expression abilities occurred (Tiu & Carter, 2022).
2. *Dysgraphia*. A neurological disorder that is characterized by difficulty in written expression. This disorder can appear as a struggle with writing, including letter illegibility, slow, labored writing, spelling difficulty, and complications with syntax and composition (Chang & Yu, 2017).
3. *Specific learning disability*. A neurodevelopmental condition that can hinder the ability to learn (Verma et al., 2019).
4. *Self-efficacy*. A multiplicative capability with cognitive, behavioral, and social subskills that must be structured into cohesive courses of action for innumerable purposes (Bandura, 1986a).

### **Summary**

The learning disability characterized as dysgraphia is often not recognized and treated until early adolescence. As many as 10% to 30% of children may experience impediments with written expression (Chung et al., 2020). When dysgraphia is not identified and handled in the

early childhood grades, academic achievement and future career opportunities can be hindered. This area of study is significant for early childhood teachers because of the positive impact that can be made on their students and their own self-efficacy. Educators may falsely label students who have dysgraphia as lazy or sloppy instead of recognizing and correctly diagnosing their disorder. When children have difficulties with handwriting, they can begin to have low self-esteem, poor relationships with peers, and negative perceptions of their abilities (Chung et al., 2020). Current research on dysgraphia does not specifically address how early childhood teachers should recognize the warning signs in their classrooms. If early childhood teachers are to integrate identification and possible treatments for dysgraphia, they must receive the proper training and know how to implement what they have learned. Becoming aware of the perceptions of early childhood teachers regarding their training in recognizing dysgraphia will assist in closing this gap.

## **CHAPTER TWO: LITERATURE REVIEW**

### **Overview**

Dysgraphia is an impairment in spelling and/or handwriting despite instructional opportunities and with a nonexistence of a gross sensory-motor or neuropathology disorder (McCloskey & Rapp, 2017). The early stages of writing are an important part of early literacy and ultimately success in school. A significant number of children suffer with dysgraphia, and this type of developmental deficit has received little attention from research (McCloskey & Rapp, 2017). In 2016, 7% to 15% of school-aged students were estimated to exhibit a form of writing deficit (Döhla & Heim, 2016). It is imperative that early childhood educators are adequately trained in recognizing the warning signs for dysgraphia. When young students with learning deficits receive intervention in the early developmental grades, they will have a better chance at succeeding academically. Within this chapter, the section on the theoretical framework examines social learning theory and sociocultural theory. The section on related literature focuses on dysgraphia, diagnostic assessments, executive function, handwriting instruction, warning signs, and teacher education programs.

### **Theoretical Framework**

The theories that guided this study are Bandura's (1971, 1977, 1986a) social learning theory and Vygotsky's (1962, 1978, 1986) sociocultural theory. Through interaction, intrinsic motivation, and self-perception, students' writing development can be analyzed through these theories. The developmental stages of writing differ for students with dysgraphia, and Bandura's and Vygotsky's theories assist in looking at the individual's developmental delays and struggles more clearly.

## **Social Learning Theory**

Social learning theory emphasizes the cognitive factors that make up a learner's perception and self-efficacy towards learning (Bandura, 1986a). The self-efficacy of students with dysgraphia can be affected when they are attempting to learn without a formal diagnosis and intervention. Teachers' self-efficacy can be affected when they do not perceive a sense of confidence when instructing, differentiating, and recognizing special needs within their students. Bandura (1993) linked individuals' self-efficacy to their thought patterns, behavior, and motivation.

The recognition for intervention assistance is imperative to the student's social-emotional health and academic success. Bandura (1986a) focused on the importance of observational learning and how self-efficacy is influenced. Social learning theory has three main constructs: observational learning, imitation, and modeling (Bandura, 1986a). Low self-efficacy can inhibit learning and instruction, and as Bandura (2001) stated, these factors can be predictors for academic success.

### ***Observational Learning***

Bandura's (1971) first social learning theory detailed many aspects of learning and attempted to incorporate the higher-level thought processes that are fundamental to human learning. As Bandura continued his research, he further refined social learning theory and expanded it to address how learning often takes place through observation (Bandura, 1986a). Teachers in the early childhood setting are continuously providing instruction while their young students observe. In addition to children observing the teacher to learn, the teacher is also (and constantly) observing students and is learning about them.

Observational learning necessitates the coordination of cognitive tasks and the processing of social intelligence (Foti et al., 2019). With observational learning, children learn behaviors based on observing the people around them (i.e., facial expressions, body movements, vocal inflections, etc.) (Bandura, 1986a). For a young child, observing the actions of others underpins the presentation of modeling and imitative actions. These actions can assist and support the advancement and development of motor skills (Hayton et al., 2020). When a learner can observe the successful representation of a task, the observer can more effectively perform the task (Harris et al., 2017).

Learning how to write can be presented through observing daily routines and schedules. Regular classroom routines often include taking attendance, coordinating daily events, reviewing content topics, and documenting topics for open discussion. Each of these ideas can encompass writing elements through observation. Instead of simply calling out names to see who is present, students could write their names on the board to establish that they are present (Zhang & Quinn, 2018); they could also cross off accomplished tasks on a visual schedule and record daily weather events on a calendar. Teachers can model handwriting instruction through correct pencil grasp (resulting in comfortable and efficient writing), letter and number formation (starting at the top, using continuous strokes, lifting pencils from the paper at appropriate times, skywriting, tracing, starting points to avoid common reversals), correct legibility (spacing between words, distinguishing the difference in paper and pencil placement for right-handed and left-handed students), and pacing (pencil pressure on paper causing writing fatigue or muscle weakness, writing with a variety of materials) (Mackenzie & Spokes, 2018).

For students with dysgraphia, with their weakness in visual-perceptual skills, efforts to observe handwriting instruction and adequately mirror what is taught may have negative results.

Visual-perceptual abilities are essential components of handwriting performance, together with writing speed and legibility (Chang & Yu, 2017; Klein et al., 2011). What may seem an ordinary, age-appropriate task learned through observation may be a difficult obstacle for a student with dysgraphia.

### ***Imitation***

Imitation is achieved when a child copies a behavior from a role model (Bandura, 1986a). Imitation plays an extremely important role in early cognitive development (Wang et al., 2018). Early childhood teachers must recognize how their instructional techniques foster their students' development. Imitation that leads to mastery starts at a young age. Infants often mimic advantageous actions in a methodical way by focusing on the reasonableness of the act along with the actor's intents (Hardecker & Tomasello, 2017). One must consider how the actions are structured and displayed toward the young learner to positively impact memory and segmentation of the actions (Wang et al., 2018).

Piaget (1962) explained how imitation is a vital precursor to symbolic implementation. When a deficit or disability is present, a student can find it difficult to imitate accurately. The deficiency of imitation can be a deficit related to language and learning impairments (Hanika & Boyer, 2019). Teachers must consider how their students will imitate their example, particularly those who struggle with dysgraphia and often lack age-appropriate development.

Imitation in writing is not simply having a student imitate or copy the writing style of the teacher; it is an interactive process that requires participation and perceptual skills. Handwriting is a complex perceptual-motor skill dependent on the maturation and integration of several cognitive, perceptual, and motor skills. According to Verma, Begum, and Kapoor (2019), "Handwriting develops through instruction and is a complex process of managing written

language by coordinating the eyes, arms, hands, pencil grip, letter formation, and body posture” (p. 86). Dysgraphia is recognized as a transcription disability, indicating that it is a writing disorder correlated with handwriting impairments, finger sequencing movements to write, and orthographic coding (Verma et al., 2019). When students have dysgraphia, the complex processes of development needed to write are often absent, making imitation a difficult technique.

### ***Modeling***

Modeling is the effort made by teachers to support their students in reaching a goal of independence. Bandura (1986a) described this learning construct as a time when behavioral changes can be noted after observing the modeled behavior of another person. Modeling can be categorized by verbal, live, or symbolic demonstrations of how someone acts (Bandura, 1986a). Modeling can be viewed as both a demonstration and a time of thinking aloud to make an action’s process visible so that learners can repeat the process independently (Schutz & Rainey, 2020).

When handwriting instruction is taught, it is necessary for the learner to follow what is modeled by the instructor. Modeling is an essential instructional strategy that permits instructors to draw attention to writing processes and purposes (Zhang & Quinn, 2018). A systematic method is displayed, and the learner is expected to follow what is being presented. Responsive and adaptable modeling of the systematic release of responsibility drive the teacher demonstrating in reaction to the learner’s individual needs (Webb et al., 2019). Modeling can assist with recognizing learners’ specific needs as they engage in the activity (Schutz & Rainey, 2020). Modeling, when used correctly, can be an effective instructional technique for students



with dysgraphia; however, if the teacher is unaware of the student's disability, the learner can experience unnecessary struggle.

According to Bandura (1986a), the three types of learning (observational learning, imitation, and modeling) lead to a child's self-efficacy and the capability to succeed. Explicit instruction is needed when working with students with dysgraphia. Archer and Hughes (2011) explained that explicit instruction is systematic (critical content is focused on, skills are sequenced logically, lessons are organized and on topic, and instructional routines are used), relentless (opportunities are given for adequate initial practice, practice is deliberate, spaced, and time is given for retrieval, and teaching is used for mastery), engaging (frequent responses are elicited, performance is carefully monitored, feedback is provided, and the delivery is presented at a brisk pace), and successful.

### *Self-Efficacy*

Self-efficacy, the belief in one's ability to cope with adverse situations, influences an individual's choice, perseverance, and effort (Sharpe, 2013). Early childhood teachers are often given extensive training in child development, mathematical concepts, teaching strategies, and literacy instruction; however, when educators are unable to recognize a disability like dysgraphia, numerous areas of academic growth can be affected, and the student's self-efficacy can be impacted. Bandura's studies focused on what motivates students in psychosocial functioning and how their thought processes affect their motivations and actions.

Resiliency is a quality that assists with overcoming challenging tasks, and individuals who are resilient can typically face challenges with commitment. A high self-efficacy can assist individuals in approaching challenges, overcoming setbacks, and maintaining commitments (Bandura, 1993). When individuals perceive their self-efficacy positively, they can approach

difficulty with inner strength and commitment. Positive self-efficacy beliefs can influence individuals' resiliency when faced with setbacks like adversity, failure, apprehension, and depression (Bandura, 2001). Social learning theory recognizes the belief individuals have in their own ability and the impact this can have on their overall success. When recognizing the warning signs of a learning disability like dysgraphia, a student's self-efficacy and resiliency towards learning can be a strong indicator of an emotional or physical challenge.

Self-efficacy and the art of written expression were correlated in research beginning in the mid-1980s (Aydin, 2019). A variety of variables (writing standards, anxiety, quality, grade level, gender) present possible reasons for low and high self-efficacy (Bruning et al., 2013). Often individuals create their own interpretations and comparisons based on their previous experiences. People generate self-efficacy through an understanding of their own success or mastery, how they observe others, and the comparisons made with other skilled people (Pajares, 2003). Poor work habits that can be caused by a lack of success can ultimately cause a poor attitude toward school and school achievement. Students with learning, emotional, and behavioral difficulties often live with poor study habits and short attention spans. Their negative concept and interest toward learning and attending school cause poor academic achievement (Kuronja et al., 2019). Those who feel more effective while learning or performing a task can tackle challenges more readily and can attain a higher level of success when compared to students who doubt their learning talents.

Therefore, improvement in writing self-efficacy can be accepted as an important variable in overcoming challenges that students may face in writing. Studies show that writing is, in principle, a process-driven act requiring complex cognitive/metacognitive skills and that some practices entail certain efforts in different stages of education. The skill of writing involves

generating ideas, converting the ideas into oral language, and moving the ideas into written text (Kim & Park, 2019). According to Polatcan and Sahin (2019), a variety of factors are involved in becoming a successful writer:

Emerging in cognitive, affective, and psychomotor dimensions, these factors have a direct impact on writing to achieve its goal. Writing disposition, writing attitude, and writing self-efficacy of students are primary factors in this regard. It is considered important to identify writing disposition, writing attitude and perceived writing self-efficacy of students, and to develop them in a positive direction for achieving the desired goal in writing. (p. 740)

The difficulties in writing that students with dysgraphia may experience can influence their self-efficacy in participating in certain written activities. Since writing plays a major part in school performance, the negative cycle of handwriting difficulties and low perceived self-efficacy among children with dysgraphia may be perpetuated in relation to their writing abilities (Engel-Yeger et al., 2009).

When teachers provide ample learning opportunities, students with various learning skills frequently succeed (Connor et al., 2020). According to Bandura (1993), teachers who possess a stronger sense of self-efficacy tend to provide various learning opportunities for students to experience success, thus demonstrating that teachers' self-efficacy may potentially predict their students' achievement. When children who have dysgraphia have the assistance of teachers with high self-efficacy, there is a greater probability that their academic needs will be met under their care. Teachers' self-efficacy can provide a perception of competency and the ability to control specific situations successfully (Bandura, 1994). When educators have high self-efficacy, their work is characterized by commitment, responsibility, and a strong persistence in assisting their

students with difficulties (Woolfolk Hoy et al., 2009). Self-efficacy can substantially affect competencies related to cognition and academic success (Bandura, 1993). The more educators recognize self-efficacy, the more academic opportunities will be adequately prepared for (Bandura et al., 1996).

Undergraduate education programs need to prepare teachers for the variety of students they will teach. Research has shown that awareness and direct experience in teaching students with disabilities leads to higher self-efficacy (Romi & Leyser, 2006; Specht et al., 2016). Bandura provided a method for developing self-efficacy for teachers by providing strong models and vicarious learning encounters so that observations could be made. According to Bandura (1997), opportunities to observe and participate provide a greater probability of increasing efficacy in teaching specific disciplines. Some undergraduate education programs provide opportunities for their preservice candidates to complete fieldwork, personal reflection, and student teaching opportunities. Bandura (1997) suggested that direct impacts that assist in achieving mastery and provide interactive experiences could contribute to teaching efficacy.

Bandura linked self-efficacy to one's own patterns of thought, motivation, and behavior. Within social learning theory, Bandura (1986b) addressed three main learning constructs that can affect self-efficacy. Through observational learning, imitation, and modeling, academic success can be found when both the teacher's and student's self-efficacy is positive. For students with dysgraphia that is unrecognized and undiagnosed, the learning constructs for success may not be beneficial.

### **Sociocultural Theory**

Vygotsky's sociocultural theory provided this research with a second theoretical construct. Vygotsky (1978) considered the early childhood years as a critical learning period for

child development. In early childhood, learning is a cooperative and interactive process. Vygotsky's theory holds that both teaching and learning are highly shared and interactive activities (Putman, 2017). Three main themes from sociocultural theory further assist in understanding early childhood teachers' perceptions of their training in recognizing dysgraphia in young children. The three main themes are the zone of proximal development, scaffolding, and the more knowledgeable other.

### *Zone of Proximal Development*

The zone of proximal development focuses on what learners can do when they have assistance from others. Vygotsky (1978) described the zone of proximal development as "the distance between the actual developmental level (independent problem solving) and the level of potential development (problem solving under adult guidance or in collaboration with more capable peers" (p. 86).

Vygotsky (1978) claimed that a child's development is his or her ability to generalize thoughts and actions resulting as consequences from mediation provided by others that is receptive to their zone of proximal development. According to Zhu (2020),

There are three types of mediation that are involved in such a process. The first stage is known as Object-regulation, where children are regulated by objects in their environment. For example, when mastering addition, children often rely on external support, such as blocks, to facilitate their thinking. The second stage is Other-regulation, where children can only carry out tasks under guidance or assistance from someone else, including adults or peers to support their mental processes. The final stage is Self-regulation, where external assi39

stance finally becomes internally available to individuals. As mediation is appropriated and internalized, the individual gradually achieves autonomy, or self-regulation, and is able to recontextualize the ability. (p. 132)

The development of writing is achieved through similar states of learning presented by this theorist. Vygotsky (1978) detailed three stages that learners move through: (1) the inability to perform the task without assistance, (2) the mastery of concepts within the zone of proximal development with the assistance of a more knowledgeable other, and (3) performance of tasks without assistance, dependent on their own abilities. Early childhood educators must be receptive to their students' zone of proximal development and developmental stages of learning.

### *Scaffolding*

Scaffolding is found within the zone of proximal development and is connected to Vygotsky's (1978) sociocultural theory through demonstrating a shared and interactive process. When a learner is presented with a new concept, the instructor first provides explicit modeling, and then as the student becomes more comfortable, the instructor provides less and less assistance. Scaffolding offers an appropriate representation for this approach; the scaffold offers a temporary support, meant to be dismantled once the structure is developed (Nordlof, 2014).

When scaffolding is used, instructors are providing various approaches for their learners to discover and achieve their developmental level. Scaffolding could be considered a metaphor to illustrate the approaches instructors might adopt to help learners reach the restrictions of their zones of proximal development (Nordlof, 2014). Through social interactions, a young writer can experience success when provided with personalized instruction by a knowledgeable individual. Vygotsky's theory indicates that young learners develop interpretations about language, literacy, and writing through social interactions with the more knowledgeable other (Putman, 2017).

### ***The More Knowledgeable Other***

Vygotsky (1978) believed that within the early childhood years, development is dependent upon exposure to complex mental activities through the assistance of more advanced individuals. He deemed that learning occurs in the zone of proximal development, and the learner can complete challenges with the support of the more knowledgeable other (Dastpak et al., 2017). The more knowledgeable other emphasizes the importance of the individual who, through social interactions, scaffolds the learner's skills to further development. The more knowledgeable other could be an adult, a capable peer, or technological assistance. The concept of the zone of proximal development or scaffolding can be extended to examine the support offered by technology (Putman, 2017). The more knowledgeable other correlates with the zone of proximal development and scaffolding in that they are needed for the learner to gain developmental skills and conceptual understanding.

### **Related Literature**

The lack of knowledge about dysgraphia leads to educators being unaware of how to recognize the disability and how to assist their students with remediation. A student with an undiagnosed learning disability can suffer from poor self-efficacy. Learning disabilities that are not properly identified and treated signify a serious problem (Siegel, 2019). This research focused on what is being addressed in higher education programs through the perceptions of early childhood teachers, specifically focusing on assessment, executive function, handwriting instruction, and the warning signs of the learning disability known as dysgraphia.

The topic of dyslexia is commonly taught in early childhood programs; however, the topic of dysgraphia is often hidden under the "umbrella" term of dyslexia or a specific learner disorder. *The Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5)*

includes dysgraphia under the category of specific learning disorders but does not identify it as a distinct disorder (Chung et al., 2020). Although the two specific learning disabilities both affect how students learn and use written language, they differ in learning and working memory profiles (Bahr et al., 2020). Gender differences point to boys being more likely to have acute writing problems, and most writing difficulties are usually not detected and treated until an average age of 9½ years (Dunn et al., 2021). Early identification and treatment are vital for preventing the severe writing difficulties that occur in both genders, but more frequently in males (Dunn et al., 2021). Dysgraphia can cause considerable emotional frustration for learners and can interfere with the capability to learn, finish schoolwork, adequately communicate written ideas, and demonstrate understanding (Mayes et al., 2018).

### **Dysgraphia**

Two main types of dysgraphia are acquired dysgraphia and developmental dysgraphia. With acquired dysgraphia, the individual acquires the disorder from an injury or illness that affects the brain (McCloskey & Rapp, 2017). Acquired dysgraphia (or aphasia) is often identified as the partial or complete inability to generate language, including written language, in the wake of neurological damage (Rodrigues et al., 2014). Developmental dysgraphia exhibits difficulties in the acquisition of writing despite ample learning opportunities with the absence of recognizable neuropathology or gross sensory–motor dysfunction (Hepner et al., 2017). Developmental dysgraphia can often have greater detrimental effects. For many learners with dysgraphia, any writing assignment is a torment; the struggle to spell accurately or write legibly is extremely discouraging (McCloskey & Rapp, 2017).

When young students commonly reverse letters and numbers, resist learning proper handwriting, and struggle with spelling, most early childhood teachers label this as varying



stages of development (Richards, 1999). This assumption is often due to a lack of training on the topic of dysgraphia. With dysgraphia, a student may have poor hand posture, varied pencil grip force, and uncomfortable pencil tilt. Dysgraphic writing can involve inappropriate pencil pressure, variations in writing velocity and/or pauses, repetitive actions and/or lifts, and oversized movements (Biotteau et al., 2019).

Dysgraphia can cause homework strain for families and psychosocial ramifications for the learner, including low self-esteem, increased anxiety, grief, a negative view of school, and incorrect perceptions of the learner as lazy or unmotivated (Mayes et al., 2018). Along with physical pain due to cramping in the hands and arms, a student with dysgraphia can also struggle with self-efficacy. Negative impacts relate not just to handwriting performance; writing disorders can have repercussions on self-esteem and motivation (Biotteau et al., 2019).

Through a lack of acknowledgment of what is absent or out of the ordinary, many young students move through the early elementary grades without receiving a diagnosis of dysgraphia. Students who struggle with foundational writing skills are likely to exhibit greater delays as they fail to match their peers' growth in writing ability (Chung et al., 2020). Early diagnosis supports children in seeking assistance and enhances their production of written work.

### **Diagnostic Assessment**

Assessment is a topic covered comprehensively in most higher education teacher programs; however, teacher education coursework and field work often create apprehension for preservice teachers in instructing and assessing students with learning disabilities. Early childhood preservice coursework frequently does not improve optimistic attitudes in working with learners with disabilities (Yu & Park, 2020). Often, early childhood teachers are required to take one or two undergraduate courses covering students' exceptionalities in learning; however,

many learning disabilities like dysgraphia are not mentioned due to the lack of research about them. A frequently noted barrier to effective initial teacher education programs in training preservice teachers is knowing how to create inclusive environments for learners who have special learning needs and disabilities (Coates et al., 2020). Providing specific assessments that highlight inclusiveness and differentiation when the disability is not yet fully understood can be a great challenge for educators.

Using traditional classroom assessments to identify learning difficulties, rather than diagnostic assessments, can cause students to be inaccurately assessed or diagnosed. There is sufficient research indicating that traditional academic assessments do not adequately evaluate all cognitive abilities that are required to complete everyday activities. By assessing conventionalities such as letter forms and invented spelling, teachers may receive only a partial understanding of children's writing abilities (Zhang & Quinn, 2018). This fact may be acutely accurate for underperforming student populaces that include students with disabilities (Dahlstrom-Hakki et al., 2019).

A diagnostic assessment can assist with providing information for individualized instruction. Diagnostic assessments, as stated by Drigas et al. (2017), can offer the possibility of identifying various learning complexities by looking at specific skills of early development such as psycho-mobility, laterality, visual perception, phonological awareness, and prewriting skills. Formal identification and subsequent implementation of interventions to stimulate development of significant skills should enhance the probability of achievement in school; however, before successful interventions can be implemented, educators must be able to detect those students who have deficits in these areas (Drigas et al., 2017).

The Wechsler Intelligence Scale for Children, 5th Edition (WISC-V) is a cognitive abilities test that measures processes that could enhance or impair learning for students aged 6 to 16 (Weiss et al., 2016). The WISC-V contains a subtest entitled Coding that assesses visual-motor dexterity and memory, and the index score, Processing Speed Index, measures visual discrimination, visual scanning, short-term visual memory, concentration, and visuomotor coordination (NCS Pearson, 2015). At this time, there is not a diagnostic test designed for early childhood that specifically seeks to determine deficits in visual-motor integration.

Proper screenings can assist in identifying deficits like developmental coordination disorder that impact learners with dysgraphia. Developmental coordination disorder is one of the most significant issues that school-aged children face (Magalhaes et al., 2011). When collecting data, it is imperative to consider what types of things children with developmental coordination disorder participate in every day to guide individualized intervention. Handwriting disorders associated with developmental coordination disorder can be diagnosed too quickly if only a handwriting legibility and speed assessment are used. Sufficient understanding of dysgraphia and its origin is significant (Lopez et al., 2018).

Understanding the proper use of diagnostic assessments, adequate interpretation of the data, and recognition of the warning signs of disabilities are critical tools for educators to use when providing intervention assistance. The signs, diagnosis, and therapy of both developmental coordination disorder and dysgraphia continue to receive far too little consideration from researchers and clinicians (Biotteau et al., 2019). Treatment should be guided from thorough diagnostic assessments and should be data driven to ensure accuracy.

With diagnostic assessments, it is essential to recognize that the acquisition of writing follows a sequential progression in early childhood, and this will often be disrupted when a child

has a learning disability that can have executive function impairments. Various writing tasks require unique cognitive processes, and students with dysgraphia may have impairments in more than one cognitive area (Chung et al., 2020). Executive function should be carefully considered by early childhood teachers as they recognize the warning signs for dysgraphia in their classrooms.

### **Executive Function**

Writing is considered a multifaceted skill to develop, with high expectations starting in lower elementary grades. The Common Core State Standards state that by the conclusion of kindergarten, students should (a) print numerous upper- and lowercase letters, (b) transcribe letters for nearly all consonants and short-vowel sounds, (c) spell beginning words phonetically, and (d) practice drawing, speaking, and writing to initiate compositional methods (Guo et al., 2021). Writing has been revealed to be a complex process that necessitates higher-order reasoning (working memory, organization, and language), motor planning, and implementation to represent functional written expression (Chung et al., 2020). Numerous cognitive depictions and operations are involved in the process of cognitive linguistic translation, which functions bidirectionally and is controlled by executive function for language by hand, eye, mouth, and/or ear (Berninger et al., 2012, 2017). Often disabilities that are associated with oral and written language are recognized in the early developmental stages. Berninger, Abbott, Cook, and Nagy (2017) described an oral and written language disability as a disability that “emerges between ages 1 and 3, initially affects language by ear and mouth but later language by eye and hand; dysgraphia, which emerges between ages 5 and 6, affects language by hand” (p. 434).

When writers have dysgraphia, their executive function skills can display areas of weakness or nonexistence. Executive function weakness can affect writing through initiating

(lack of idea generation or independence), sustaining (losing thought processes, difficulty in task completion, disjointed sentences), inhibition (impulsivity, distractibility), shifting (perseverations), poor organization (frequent erasures, forgetfulness, disjointed content), poor planning (lack of cohesive ties), poor word retrieval (limited word choice, simplistic sentences), and poor self-monitoring (careless miscues, sloppy work) (Feifer, 2022).

Teachers must understand the levels of executive function (inhibitory control, working memory, flexible thinking) when instructing students with learning disabilities. Writing requires the generation of thoughts, decoding them into oral language, and transcribing the language into written expression (Kim & Park, 2019). The process of writing is heavily dependent on working memory in converting inner language into symbolic representations. Spelling is a basic cognitive procedure that supports the writer in translating internal language into externally represented symbols (Berninger et al., 2009; Hayes & Berninger, 2009; Richards et al., 2009). Writing involves accuracy in holding and retrieving audiovisual data alongside components of verbal and visual complex working memory (executive function), as well as skills related to transcription (Davis et al., 2020).

Executive function skills are typically organized into three core areas: inhibitory control (attention, emotions, and behavior control), working memory (the ability to keep information in one's mind and manipulate it as needed), and cognitive flexibility (the ability to adjust one's perspective to changing requirements or priorities) (Cordeiro et al., 2020; Olive, 2004, 2012, 2014). Inhibitory control, working memory, and cognitive flexibility are critical for executive function as young learners begin to use written expression. When learners begin to compose a piece of writing, they must use inhibitory control to ignore external distractions that might deviate their focus from the task at hand. Working memory is also essential in producing written

text by building and storing a text in one's mind (Cordeiro et al., 2020; Olive, 2004, 2012, 2014). Students with dysgraphia may lack the ability to use inhibitory control, working memory, and cognitive flexibility in their writing due to a lack of executive function skills.

The detection of executive function deficiencies through handwriting is significant because the components of working memory, emotional control, inhibition, and monitoring are required. The detection of executive function deficiencies may be one of the first stages in addressing daily function needs (Rosenblum, 2018). Often a writing deficiency can be detected through the lack of a conscious writing control or the ability to think about *what* they should write rather than *how* to write. Failure to build writing automaticity by the end of third grade can greatly increase the probability of difficulty in more complicated tasks involving writing, as learners' higher cognitive functions may be disturbed by graphomotor formation of letters (Chung et al., 2020).

Efficient or well-developed executive functioning skills contribute to how individuals act, feel, perceive things, and think and how successful they are at goal-directed behavior (Rosenblum, 2018). Executive abilities like daily organization and function, specifically with time and space, are often significantly inferior among those with dysgraphia (Rosenblum, 2018). Letter creation and transcription skills can be affected by students' emotional control, working memory (executive function), and inhibition (Kim & Park, 2019). When relationships between executive functions are measured, children with dysgraphia often have an absence in the measurement of handwriting.

### **Handwriting Instruction**

Along with recognizing the learning deficit of dysgraphia through assessment and through the observation of deficits in executive functioning, it is also important to recognize the

impact of preparation in appropriate handwriting instruction for early childhood teachers. The subject of handwriting is often debated as something unnecessary for students today and is pushed to the end of the long list of requirements needing to be met. Verma, Begum, and Kapoor (2019) described handwriting instruction:

Handwriting is not only the most important academic requirement but is also used in our daily life, e.g., filling forms, taking notes, making lists, putting up reminders, and so on. Poor handwriting can have a significant effect on school performance and children who lack some of these skills may miss learning opportunities and lack self-esteem. (pp. 85-86)

Schoolchildren who learn from instructors who have had professional training in handwriting instruction demonstrate more progress in their writing and composing. Thus, professional development in handwriting instruction could be an essential component to helping young children master writing (Berninger, 2012). The proper training for early childhood teachers is not always offered when it is not deemed necessary to include in the curriculum.

The art of proper handwriting is frequently pushed aside in progressive curriculums, and students who suffer with dysgraphia are not recognized. For progressive countries, writing with pen or pencil is an outdated activity that is inconsistent with modern times (Doug, 2019). The issue some students experience with handwriting can present difficulties in conquering academics, with a subsequent need for additional services from an occupational therapist or specialized remedial training (McCarroll & Fletcher, 2017).

New forms of digital testing are being introduced to create more positive handwriting experiences and to detect dysgraphia through therapeutic digital games. Educators must be careful to not rely solely on digital alerts in recognizing the various warning signs of dysgraphia

in their young students (Nye & Sood, 2018). Teachers often feel that the absence of a curriculum and formalized training negatively impacts their teaching related to handwriting instruction.

When there is a deficit in fine motor and/or visual-perceptual skills, handwriting skills can suffer, causing negative consequences with academics and self-esteem (Nye & Sood, 2018). It is necessary to recognize how significant the ability to write is for academic achievement.

Handwriting is crucial for young students to function, operate, and participate in a classroom; it is through handwriting that their academic success is evaluated (Donica et al., 2012).

Efficient writing instruction should begin at the orthographic loop followed with a visual plan of numbered, sequential strokes; practice in copying letters and writing the letters from memory; practice writing the alphabet in sequential order in long-term memory; an emphasis on legibility and automaticity; and a transfer from handwriting to composition (Berninger, 2012).

Common handwriting difficulties that have been reported by teachers are letter development, motor memory, letter and word spacing, grip, legibility, fine motor skills, perceptual difficulties, and poor writing habits (Collette et al., 2017).

Written work is the foundation of every school subject, and poor writing skills make it challenging to know whether the weakness is in content acquisition or writing ability. The first signs of handwriting struggles are detected during the assessment of handwritten assignments (Collette et al., 2017). When a written assignment is challenging to decipher, it may not be assessed thoroughly and may be given an incomplete grade. An illegible paper can often be assessed inaccurately based on a bias on the content's quality or the writer's capabilities. Either scenario produces an inaccurate assessment (Santangelo & Graham, 2016). Often the most conventional method of classroom-based handwriting remediation is extra handwriting practice. Other remediation methods include using additional tools such as pencil grips, special paper, and



some occupational therapy-provided strategies; however, due to a lack of sufficient time, application of the strategies can be inconsistent (Collette et al., 2017).

Handwriting difficulties are a recurrent reason for referrals to occupational therapists (Benson et al., 2016). When early childhood educators can work with school-based therapy practice (i.e., occupational therapy), the number of intervention strategies teachers can use to assist students with dysgraphia can increase significantly. Rosenblum (2018) noted:

Handwriting is a complex activity that entails an intricate blend of cognitive, kinesthetic, and perceptual-motor components. In order to produce a hand-written product, the child needs to simultaneously activate sensory-motor and cognitive skills, devise an idea, plan the structure of the sentence syntax and spelling, attain motor-orthographic integration to create the text, and appraise the obtained result. (p. 2)

Between 10% and 30% of school-aged children are observed having handwriting difficulties with no other recognized disabilities (Verma et al., 2019). Students who have difficulty with handwriting must be given assistance in the early childhood grades so that they do not fall behind academically. With handwriting being a complex skill to master, students with dysgraphia can have anxiety and negative educational experiences (Gargot et al., 2020). When young students are unsuccessful in developing efficient handwriting, their academic achievements may be severely affected. Therefore, students with dysgraphia need a formal diagnosis because handwriting difficulties cannot be resolved without intervention (Biotteau et al., 2019). Discovering the need for a diagnosis comes from the knowledge of dysgraphia's warning signs.

## **Warning Signs**

Dysgraphia is classified under neurodevelopmental disabilities. The DSM-5 (American Psychiatric Association, 2013) does not recognize dysgraphia as a separate category but includes it in the category of specific learning disorders. A specific learning disorder is recognized as complications in learning and exercising academic skills, indicated by the occurrence of at least one symptom persisting at least 6 months, despite targeted interventions (American Psychiatric Association, 2013). The Individuals with Disabilities Education Act, revised in 2004, defined a child with a specific learning disability as a child who does not achieve state-approved grade-level expectations in one or more areas (listening and reading fluency and comprehension, basic reading skills, math problem-solving and calculation, oral expression, and written expression) with provided instructional experiences.

When creating a complete picture of children with dysgraphia, areas of consideration include working memory, inhibition, monitoring, and emotional control (Rosenblum, 2018). Educators must constantly document and watch their students as they progress developmentally and academically. Teachers must also watch for warning signs for unusual behavior or problems with learning that have not been adequately addressed. If teachers are not adequately trained in knowing what to watch for, their students could move on to the next grade with little to no assistance for the challenges they face. Discovering the warning signs of a learning deficit like dysgraphia can be an undertaking, since little research and information has been provided on the topic. Developmental deficits in the achievement of writing, like dysgraphia, are commonplace and have substantial consequences, yet these writing disabilities have received little attention from scholars (McCloskey & Rapp, 2017).

Teachers can recognize errors in handwriting, spelling, and written expression; however, in the early childhood years, this is not always a sign of a learning deficit. Variables in handwriting that are impacted by dysgraphia can appear as poor legibility, movement, speed, fluidity, and letter size and inaccurate orientation or curvature of written strokes (Biotteau et al., 2019). Early childhood instructors may recognize other symptoms that involve visual or motor impairments that affect fine motor skills (e.g., pencil grasp); however, it is important to realize that there may be other relevant indicators (i.e., neural injury) when recognizing dysgraphia and the need for intervention.

The impairment is a neurocognitive disorder linked with executive functioning, visual-motor deficits, and fine motor skills (Mayes et al., 2017). Richards (1999) defined the characteristics of dysgraphia as

cramped fingers on writing tool, odd wrist, body, and paper positions, excessive erasures, mixture of upper- and lowercase letters, mixture of printed and cursive letters, inconsistent letter formations and slant, irregular letter sizes and shapes, unfinished cursive letters, misuse of line and margin, poor organization on the page, inefficient speed in copying, decreased speed of writing, general illegibility, inattentiveness about details when writing, frequent need of verbal cues and use of sub-vocalizing, heavy reliance on vision to monitor what the hand is doing during writing, slow implementation of verbal directions that involve sequencing and planning. (p. 4)

The age of students in the early childhood grades and their fine and gross motor development make the recognition of dysgraphia a challenge for educators who are not familiar with handwriting instruction and the warning signs of dysgraphia. A closer look needs to be taken when evaluating how dysgraphia is presented in undergraduate education courses.

According to Nye and Sood (2018), in a 2018 study, teachers felt there were gaps in their knowledge base in relation to their early childhood students' developmental progression, their own ability to assist struggling students, and their awareness of strategies to use for those who were struggling. Teachers who experienced this gap of knowledge indicated the desire to have “formal” training, as well as in-service, lesson modeling, and problem-solving instruction (Nye & Sood, 2018).

It is important to consider those students who have already been given access to assistive technology (typing instead of writing) rather than developing the motor skills necessary for handwriting. Learning the art of written expression is a significant component in a student's education. The lack of fine motor and visual perceptual skills can adversely impact the achievement of handwriting skills as well as have extensive consequences with academic accomplishments and self-confidence (Feder & Majnemer, 2007; Nye & Sood, 2018; Sharp & Titus, 2016). Young students who have missed the association between hand manipulation skills (i.e., rotation and translation) may need more focus on specific fine motor skills before beginning a handwriting curriculum. When young children struggle with expressing themselves adequately through written expression, spelling, or putting their thoughts into a rational sequence, they quickly become disadvantaged academically.

Receiving a diagnosis enables students with dysgraphia to seek support and develop their writing more quickly. Early diagnosis and intervention for children with dysgraphia have been associated with improved outcomes. Because young students often experience a typical delay in a dysgraphia diagnosis, the primary caregiver can perform a crucial role in recognizing the child's condition and initiating the intervention (Chung et al., 2020). By better understanding what dysgraphia is, its warning signs, what it affects, and what it looks like in the early

childhood learning environment, early childhood teachers can successfully identify those learners who may need extra assistance or intervention for academic success.

### **Teacher Education Programs**

It is essential for teacher education programs to analyze their expectations and identify if they are promoting instructional effectiveness to meet the needs of all their students. To train preservice teachers successfully, educational practices must thoroughly analyze the elements within the program to promote effective instruction (Beers, 2018). Specific learning disabilities and their warning signs are areas within the teacher education programs that are not always effectively addressed. The existence of some struggles in teacher education programs suggests that initial training courses do not offer students all essential knowledge and skills to support them in working effectively with young students (Buettner et al., 2015; Mroz, 2006).

Questions arise related to coursework and instruction, with each university creating early childhood education programs designed based on their own expectations and what they feel is most beneficial for their education students. Are these programs and courses reflecting current research and providing specialized instruction to meet the needs of all students? Apprehension has been expressed for many years concerning whether early childhood teacher programs offer the depth of expertise and experiences pertinent to the early years of learning; whether academic staff instructing in the programs have the necessary early childhood education expertise and experience; and whether universities have the ability to ensure their teacher education programs reflect current research in the early childhood field (Boyd et al., 2020; Early & Winton, 2001).

Often the focus of teacher education programs is to assist students in passing the variety of certification exams that are necessary to obtain their teacher license. Within the state, and on a national level, statistics of pass rates are electronically posted, and often those who oversee

teacher education programs feel pressure to increase their pass rates. Teacher preparation programs need to exercise caution while planning for the realities of being in the field and licensure rather than following the inclination to teach to the tests (Brown, 2018). There must be careful consideration when planning coursework for preservice teachers to fully prepare them for challenges that will need to be addressed in their classroom. To prepare early childhood teacher candidates to instruct young students from birth to age 8, the courses in the teacher preparation programs must offer them the knowledge and expertise of learning processes, child development, and specific content while offering support in passing required certification exams (Brown, 2018).

Many early childhood teacher education programs focus on connecting the content taught with research theories and developmentally appropriate practices. Child development stages are often taught, and the methods of instruction are connected to a variety of assessments. According to Al-Hassan (2020):

Research evidence discusses that the criteria underpinning quality early childhood teacher education include providing students with a knowledge base of the different theories of child development, particularly developmental and socio-cultural theories, different types of early childhood curricula, appropriate learning environments, developmentally appropriate practices, the role of play in child development, teaching methods in early childhood, and evaluation and assessment in Early Childhood Education. (p. 91)

Method courses in teacher education programs focus on how to teach the subject matter and the appropriate ways to differentiate activities to meet the needs of all learners. To qualify as high-quality teacher education preparation, programs must offer teachers specialized training to support the special needs of young students. A program that does not address specific learning

disabilities like dysgraphia is not providing that specialized knowledge. High-quality early childhood teacher training and development for preservice professional development should provide assistance to teacher candidates in creating specialized knowledge, competencies, and practices that strengthen the academic achievement of young children (National Association for the Education of Young Children, 2009).

In higher education settings, early childhood teacher education programs are typically organized within a degree plan that students must complete to receive their degree. Courses are created and arranged within the degree program to provide opportunities for growth and specialization within the content matter that will be taught. Effective learning opportunities qualify as specialized classes in child development, childcare, early childhood education, literacy, environments for optimum learning, play, assessment of development stages and discovery, and hands-on experiences with young students (Al-Hassan, 2020).

Various programs require a brief overview of special education and how to accommodate and modify instructional practices for students' learning needs; however, the specialized training that qualifies as effective preparation is not always a requirement. The question in need of a closer look is if these courses are addressing dysgraphia and the warning signs that can be discovered in the early childhood grades. The recurring connection among lesson planning, teaching, and assessment, with an emphasis on young students' learning needs, should be stressed throughout the coursework in an early childhood teacher education preparation program (Brown, 2018). Some degree plans require completion of courses addressing diagnosis and evaluation. An undergraduate early childhood education program that comprises 132 credit hours for a bachelor's degree includes courses in child development, counseling, psychology, children's thought processes, curricula of childhood, numeracy, literacy, parenting, abuse in

childhood, producing and designing teaching aids, diagnosis and evaluation, the learning environment, and field training (Al-Hassan, 2020).

It is necessary for teacher education programs to continuously evaluate and improve their programs to stay relevant to changing needs and new insight and discoveries through research. The ideal teacher education program constantly improves its courses to promote the learning needs of preservice educators (Beers, 2018). Research is addressing new discoveries about learning disabilities. Early childhood teachers need a variety of learning opportunities in developmentally appropriate practices and specialized instruction to recognize learning disabilities to be effective in their classrooms. For developmentally appropriate practice to happen, every learning environment must have an instructor who is well educated on a variety of teaching strategies and practices (Beers, 2018; Janssen et al., 2015).

The field of early childhood education is invaluable, and the proper training of these teacher candidates is imperative when considering the lasting impact that can be made on the lives of students. Early childhood teachers are one of the greatest predictors of excellence that positively impact a young child's educational outcome (Boyd et al., 2020; Manning et al., 2017). When early childhood teachers are trained to recognize the warning signs of dysgraphia, they will in turn be trained to meet the needs of all their students because thoughtful consideration will have been given to their preparation and training. Teacher preparation programs should be required to provide teacher candidates with numerous opportunities, throughout their courses and field experiences, to obtain the critical knowledge, proficiencies, and dispositions required to teach all young children (Brown, 2018).



## Summary

Research on the preparation and perceptions of early childhood teachers in recognizing the warning signs of dysgraphia relates to social learning theory and sociocultural theory. Albert Bandura addressed the components of an individual's self-efficacy and how it can directly influence what individuals think, how they behave, and what motivates them (Bandura, 1993). This theoretical framework acknowledges the importance of both the teacher's and student's self-efficacy in the recognition of dysgraphia. Vygotsky's sociocultural theory explained how both teaching and learning are shared, interactive activities (Putman, 2017), and this theory assists in understanding teachers' perceptions of their training in recognizing dysgraphia in young children.

Written expression deficits that are a part of dysgraphia have a crucial impact on individuals' well-being. Writing tasks and activities that involve fine motor activities make up 31% to 60% of a typical school day (Rosenblum, 2018). Emotional difficulties (Livingston et al., 2018) are frequently the result of learning disabilities not being appropriately recognized and/or treated (Siegel, 2019). Therefore, dysgraphia can cause harm in students' self-image and subsequently affect academic achievements (Rosenblum, 2018). When dysgraphia is unrecognized until early adolescence or later, a learner can struggle unnecessarily.

Even with evidence showing dysgraphia in as many as 10% to 34% of all school-aged children, the research on this deficit is scarce. Despite the considerable impact of dysgraphia, the topic has received little attention from researchers (McCloskey & Rapp, 2017). It is imperative that more research is conducted on the recognition of dysgraphia in young children to assist with teacher preparation, recognition, diagnosis, and treatment. The current study addressed teacher perceptions of dysgraphia, and the methods are detailed in the next chapter.

## **CHAPTER THREE: METHODS**

### **Overview**

The purpose of this phenomenological qualitative study was to examine the lived experiences of early childhood teachers who are seeking to recognize the warning signs of dysgraphia. Young children with dysgraphia have the inability to produce legible and accurate handwriting in a functional amount of time (Eide & Eide, 2006). When young children exhibit signs of dysgraphia in a school setting, it can affect their self-esteem and academic development (Rosenblum et al., 2006). Early recognition of dysgraphia enables the teacher to improve the child's writing and assists with proper differentiation within the classroom (Richards, 1999). This chapter details the study's research design, the setting and participants, researcher positionality, procedures for data collection and analysis, data synthesis, trustworthiness, and ethical considerations.

### **Research Design**

In this study, I used a qualitative approach to understand the perceptions of early childhood teachers on their training in recognizing dysgraphia. A qualitative analysis is based on the exploration of a social or human problem. This approach is designed to explore the meaning of human phenomena expressed through lived experiences (Creswell, 2014; Van Manen, 2015). Qualitative research assists in expanding current knowledge in an underresearched subject like dysgraphia and assists in encouraging further examination.

A phenomenological research design was used in this study. Through word analysis and a holistic picture, data were collected from the views of the participants in their natural setting (Creswell & Poth, 2018). The recognition of dysgraphia was examined within the work location of the early childhood teachers. A phenomenological design examines a problem within a

specific setting from the perspectives of those who are involved (Creswell, 2013). As teachers reflected on their training and self-efficacy, the research problem was identified within their working environment. The method of phenomenological qualitative inquiry describes a person's perception of his or her surroundings (Merriam, 2009).

I selected a hermeneutic approach for this phenomenological study to better understand the lived experiences of the participants. This particular methodology focuses on the unique life stories of the individual participant. According to Moustakas (1994), hermeneutic science is the art of studying a text in a way that meanings and intentions are understood fully. The early childhood teachers reflected upon how they were trained and their ability to recognize the warning signs of dysgraphia. When the interrelationship of the experience and the underlying dynamics are understood, the essence is found in the experience. Gadamer (1984) explained that with hermeneutics, the clarification of text is not an isolated action but is the basic construct of the practice.

According to Moustakas (1994), inquiry is a process that starts with a question that has been a puzzle or personal challenge in hopes to understand the world in which one lives. This study attempted to seek a better understanding of the perceptions of individuals who have experienced early childhood training, and hermeneutic phenomenology offered the framework that allowed the participants to tell their individual stories.

### **Research Questions**

The research questions focused the inquiry on teacher perceptions and their lived experiences with students with dysgraphia, the knowledge of dysgraphia warning signs, and their self-efficacy concerning the recognition process of dysgraphia in their natural setting. The central research question of the study asked: What are the lived experiences and perceptions of

early childhood teachers of their training in recognizing dysgraphia in young children? There were three subquestions:

### **Research Question One**

How do early childhood teachers describe their lived experiences and preparation for the signs of dysgraphia with students in pre-kindergarten through 3<sup>rd</sup> grade?

### **Research Question Two**

How do early childhood teachers regard their training concerning the warning signs of dysgraphia in undergraduate, early childhood courses?

### **Research Question Three**

What lived experiences do early childhood teachers believe may have affected their self-efficacy in how children learn through social interaction and how does this assist in recognizing the early warning signs of dysgraphia?

The goal of the three research subquestions was to obtain information about the early childhood teacher participants' lived experiences and perceptions in regard to their preparation for the classroom. The participants were asked to reflect upon their self-efficacy in dysgraphia recognition and how their training was regarded. Each question attempted to examine the specific lived experiences and practices that were used in undergraduate early childhood courses.

## **Setting and Participants**

The setting of the research familiarizes the reader with the area in which the participants worked and how the recognition of the warning signs of dysgraphia may have occurred. The unique setting where the participants worked illuminated specified situations and fostered more in-depth questions and responses about the phenomenon. Participants for this study were selected

to best provide information for the research questions and enhance the study by their understanding of the phenomenon being studied.

### **Setting**

The settings of this study were a public early childhood school in Oklahoma, a public elementary school in Oklahoma, and a public elementary school in Texas. The three schools were chosen for their size, location, and educational practices. The Texas school was inside an urban cluster and the Oklahoma schools were located in rural public school districts. Often it is small, rural schools that are on the cutting edge of current and effective practices and research (Barter, 2011; Corbett, 2013; Wallin & Newton, 2014). Due to economic disadvantages and necessity, smaller populations can form affective relationships across community groups (Barter, 2011; Corbett, 2013; Wallin & Newton, 2014).

The early childhood center serviced prekindergarten and kindergarten students and was one of six buildings in the district. According to the National Center for Education Statistics (2020), the school was a Title I school with 159 prekindergarten students, 198 kindergarten students, 21 classroom teachers, and one principal. There were 180 male students and 177 female students. The ethnicity based upon 2020 enrollment was White (152, 42%), American Indian/Alaska Native (114, 31%), two or more races (50, 14%), Hispanic (31, 8%), Black (7, 1%), Native Hawaiian/Pacific Islander (2, 0.5%), and Asian (1, 0.2%). Twenty-one teachers taught in the early childhood setting. This school's locale was defined by the National Center for Education Statistics (2020) as rural fringe, meaning it was in a rural area that was less than or equivalent to 5 miles from an urban area.

The elementary school in Oklahoma served prekindergarten through fifth grade and was one of five schools in the district. The school was a Title I school with 634 students, 34 teachers,

and 2 principals. There were 312 male students and 322 female students. The ethnicity based upon enrollment was American Indian/Alaska Native (169, 26%), White (266, 42%), two or more races (120, 19%), Hispanic (50, 8%), Asian (6, 1%), and Black (6, 1%) (National Center for Education Statistics, 2020). Twenty teachers were currently teaching in the early childhood setting. This school's locale was defined by the National Center for Education Statistics (2020) as rural distant, meaning a rural territory that was more than 5 miles but less than or equivalent to 25 miles from an urban area.

The elementary school in Texas serviced second and third grade and was one of five schools in the district. The school was a Title I school with 530 students, 43 teachers, and 2 principals. There were 288 male students and 242 female students. The ethnicity based upon enrollment was White (242, 46%), two or more races (32, 6%), Hispanic (189, 36%), Asian (3, 0.6%), and Black (64, 12%). Forty-three teachers taught in the early childhood setting. This school's location was defined by the National Center for Education Statistics (2022) as town fringe, meaning a district within an urban cluster that was less than or equal to a radius of 10 miles from an urban region.

Permission was obtained from the study sites by contacting the school superintendents of the districts where the research was conducted. Permission letters were provided to the Institutional Review Board (IRB) that approved the study (Appendix A).

## **Participants**

Qualitative research characteristically focuses on small, purposefully selected samples (Patton, 2015). The criterion sampling method is one of the methods used in purposive sampling (Polat & Kazak, 2015). Criterion sampling consists of standard inclusion and exclusion conditions relevant to systematic examinations and meta-analyses (Chaka, 2020). Criterion

sampling within the purposive sampling process is frequently used within qualitative research (Yildirim, 2016) and was applied in this study.

The participants for this research study were selected from two public schools in Oklahoma and one public school in Texas. There were three inclusion criteria for participation: (a) a bachelor's degree in early childhood education from an accredited university, (b) a state teaching license, and (c) a current role teaching in grades prekindergarten through third grade. The sample had a target number of 12 participants who had completed methodology courses in a university's early childhood education program.

### ***Recruitment Plan***

A recruitment letter, with a link to a screening survey, was sent to all early childhood teachers who taught in the schools selected for this study (see Appendix B). The screening survey, created through Google Forms (see Appendix C), was used to assist with the selection of individuals who met the criteria for participation. After the survey was completed and evaluated, an email was sent to those who were accepted into the study as participants (see Appendix D). This email included a hyperlink to the consent form (see Appendix E) that was signed and returned to me before any data were collected. No teachers who expressed interest were not accepted for the study, although that possibility was prepared for and an email drafted (see Appendix D). The participants were informed that the process was voluntary with no repercussions for nonparticipation. Once a sufficient number of participants was recruited, the data collection for the research study began.

Established procedures were followed to protect the participants who took part in the research study to avoid unnecessary risks. Permissions were approved and documented before the research and data collection began. Participants were asked to electronically sign a consent

form before the participant letters, interview, and focus groups were administered. The established procedures ensured safety and accuracy for the participants and the data that were collected.

### **Researcher Positionality**

This study followed a social constructivism interpretive framework in seeking to better understand early childhood teachers' perceptions of their training in recognizing dysgraphia in young children. This phenomenological study attempted to explore early childhood teachers' lived experiences to better understand how they are prepared for recognizing the warning signs of dysgraphia in their classrooms. The interpretive framework and ontological, epistemological, and axiological philosophical assumptions are further addressed, as well as the researcher's role in the study.

### **Interpretive Framework**

The social constructivist interpretive framework was the lens through which the study was conducted. Through this framework I sought to better understand how early childhood teachers recognize the warning signs for dysgraphia in their early childhood classrooms. In using the social constructivist interpretive framework, I was able to better understand how early childhood teachers' ideas coincide with their educational experiences. Social constructivism provides a practical theoretical framework for qualitative analysis in uncovering insights on human interaction with the world. The social constructivist theory contends that people's viewpoints coincide with their personal experiences (Creswell, 2009; McKinley, 2015).



## **Philosophical Assumptions**

As the researcher, the lens through which I view the topic of early childhood teachers' perceptions of their training in recognizing dysgraphia in young children is one of a personal and professional nature. My research was approached from a position of an educator and a child advocate. The topic of research is one that I felt required more research and attention. By addressing the ontological, epistemological, and axiological assumptions within this study, I better articulate my positionality on the topic.

### ***Ontological Assumption***

In research, the ontological assumption looks at the researcher's beliefs on the nature of reality. In addressing the existence of what is real, it is my belief that there is one, universal reality, which is God as revealed in the Bible. When accepting a defined reality that is supposed to be measurable and observable, the belief in one universal god is often debated for the existence of multiple realities. Researchers should take a stance concerning their perceptions of how things are and how they work (Scotland, 2012). Ontological assumptions relate to what signifies reality, or attempts to answer *what is*. The definition of reality is based on ontological assumptions as something needing to be defined by meanings, experiences, and perceptions of participants rather than the researcher alone (Kreiner et al., 2009). It was my desire to gain insight from the perceptions of early childhood teachers on their training in recognizing dysgraphia rather than it being my own opinion or assumption.

### ***Epistemological Assumption***

Epistemology is concerned with the nature and forms of knowledge (Cohen et al., 2007; Scotland, 2012) and the different methods of gaining knowledge. When considering the topic of teacher perceptions on their training, this held a relationship with my own profession. I teach

undergraduate preservice teachers, and preparing them for various challenges presented in the classroom is of great importance to my own research. I am interested in discovering the best way of communicating and acquiring the needed knowledge for early childhood professionals in recognizing the warning signs of dysgraphia. Epistemological assumptions are concerned with how knowledge can be created, acquired, and communicated—in other words, what it means to know (Scotland, 2012). Acquiring first-hand experiences and opinions from early childhood teachers provided the opportunity for interpretive data linked to the research topic. This study examined the dialogue of the participants' personal experiences as a source of knowledge (Kreiner et al., 2009).

### ***Axiological Assumption***

Within the research process, researchers must be aware of their own values and recognize the purpose and aim of the study (Li, 2016). I recorded this in a reflexive journal (see Appendix I). My own personal experiences as an early childhood teacher, and now a teacher in higher education, deepened the analysis. My views on education and advocacy for children influenced the questions I asked the participants. It is my personal belief that every child is valuable and deserves to reach his or her full potential. If a diagnosis for dysgraphia is not identified, the child may not reach that full potential. The types of questions asked in a research study are influenced by the researcher's personal worldviews (Kreiner et al., 2009). In analyzing the findings, extrapolation of themes is also affected by the researcher's values, worldviews, and personal experiences. Simultaneously, the worldviews, values, and experiences of the participants interrelate with the researcher's to strengthen the analysis (Kreiner et al., 2009).

## **Researcher's Role**

I was previously an early childhood teacher in a public school district. I then became a library media specialist and have worked as an early childhood director of education at a 4-year university. I have personally witnessed students with dysgraphia who went from grade to grade undiagnosed and suffered academically and emotionally. Had I, or my co-teachers, been aware of the warning signs of dysgraphia, these students could have received the intervention needed in the early childhood grades. I avoided expressing or injecting personal feelings and experiences into the participants' responses; however, I did acknowledge my own presence in the results of the study. To avoid unprejudiced consideration, I put personal biases aside and remained open-minded when data were collected. Personal bias can affect the validity and reliability of the findings in a qualitative research study (Smith & Noble, 2014). My role as the human instrument was to collect and analyze data from participant letters, semi-structured interviews, and focus groups concentrating on early childhood teachers and their perceptions and self-efficacy concerning the recognition of dysgraphia in their classrooms. Through this study, I hoped to bring awareness of the need of better training for early childhood teachers in recognizing the warning signs of dysgraphia.

The motivation I had in researching a phenomenological study of the recognition of dysgraphia in early childhood teachers is based on my profession as an early childhood director at a university in Southeast Oklahoma. I have worked with undergraduate preservice teachers for 5 years, and before that I taught in public schools for 14 years. Due to the content that I have taught, I have a fervent interest in the development of fine-motor skills, working memory, and the recognition of dysgraphia. I have worked with preservice teachers in preparing them for the early childhood classroom. Having newly trained teachers who are able to recognize and

communicate the warning signs of this disability would be beneficial to the education profession and to young students whose dysgraphia has yet to be recognized.

A social constructivist approach guided the study in focusing on the participants' views and how they interpret the topic of dysgraphia. This research attempted to gain information from participants' subjective experiences and individual perceptions. The research was conducted in the early childhood teachers' areas of work to investigate firsthand evidence. With my previous experience teaching early childhood and my position in training early childhood teachers, my interpretations were shaped by the participants' views (Moustakas, 1994). It was my goal to understand how early childhood teachers perceive their training in the recognition of dysgraphia.

### **Data Collection Plan**

Within a research study, it is important to have a robust data collection method and ensure that the data collection methodology specifically addresses the research questions. Three types of data were collected in this study: participant letters, semi-structured interviews, and focus groups. This research procedure allowed data triangulation by coherence between the study's problem, the research questions, data analysis, data interpretation, and the research conclusions. Instructions were sent for the participant's letter. The individual interview questions and focus group questions were selected to address specific objectives within the study.

### **Participant Letters**

Data were collected from letters written by the participants in reference to the research topic. In the letters, the participants addressed a hypothetical classroom situation. Each document was analyzed to assist with triangulation through personal accounts and experiences that related to the study phenomenon. Through the use of participant letters, the data collected encouraged

precise and reliable data. The researcher can report data both credibly and accurately (Creswell & Guetterman, 2019) when steps are made to corroborate evidence.

For this research, I provided the participants with specific instructions on how to write the letter, as follows (see also Appendix F):

A first-year teacher who is a colleague has reached out to you with questions about a student in their class. They are wondering if this student may have some problems with written expression. In reflecting on your own undergraduate training, explain to them what dysgraphia is, at what age it may indicate that this is a concern, and what some of the warning signs may look like. Provide your colleague with the steps that an early childhood teacher would take if there was a possibility one of their students may have dysgraphia (i.e., parent communication, referral, assessment, intervention, etc.). There is no length requirement for this letter, and it will be kept confidential. Please return your completed letter within 14 days of this email.

This information was sent via email. Two reminder emails were sent as needed: the first reminder was sent after 7 days, and the next reminder was sent on day 14 for those who had not yet responded.

### **Participant Letter Data Analysis**

The participants' perspectives and knowledge of the topic were examined. As the participant letters were read individually, comments were highlighted and coded by color. Marginal notes were used to organize information. A table was used to display the preliminary codes found within the documents.

## Individual Interviews

In qualitative research, data are collected to discover information about a specific issue through focusing on participants' narratives, illustrations, stories, myths, and statements (Kus, 2003). Due to some COVID restrictions, the interviews were conducted via Zoom, with the date and time selected by the participant, and managed in a confidential location where no one was able to overhear the conversation. The individual interviews took approximately 30 to 45 minutes. I recorded the participants' responses with the Zoom meeting recorder and on an audio recorder with previous consent received (Polat & Kazak, 2015). The questions were generated from research focusing on dysgraphia (McCloskey & Rapp, 2017), and a plan was in place to refine the questions after the first interview, if needed. The interview questions were open-ended to allow opportunities for participants to express experiences and opinions. Open-ended questions help to acquire understanding of participants' views, opinions, feelings, experiences, and purposes (Creswell & Poth, 2018).

The individual interview semi-structured questions were as follows (see also Appendix G):

1. Please introduce yourself to me as if we just met for the first time. (RQ1)
2. Please explain why you decided to become an early childhood teacher. (RQ1)
3. Of the educational skills on learning disabilities that you have mastered in college, which would you say were the most significant? (RQ2)
4. What made them significant? (RQ2)
5. What instructional areas of learning disabilities did you find the most challenging to learn? (RQ1)

6. What is dysgraphia and how does dysgraphia relate to you as an early childhood teacher?  
(RQ1)
7. How have you associated dysgraphia with other learning disabilities like dyslexia or attention deficit/hyperactivity disorder? (RQ1)
8. What warning signs might you see your students display if they had dysgraphia? (RQ3)
9. In your class, has dysgraphia been more common in boys or girls? (RQ3)
10. What do you feel are the best means of intervention for this learning disability? (RQ2)
11. Have you observed medication assisting with dysgraphia? (RQ3)
12. Who do you know that can diagnose dysgraphia? (RQ2)
13. What accommodations or modifications have you made in the classroom for a child who has difficulty with handwriting? (RQ3)
14. How do you feel that your courses or experiences in college prepared you for the recognition of dysgraphia in the early childhood classroom? (RQ2)

Questions 1 through 5 referred to the participants' higher education. The questions focused on the early childhood education program that was completed and any significant events that were remembered. These questions were intended to establish a positive rapport between the participant and the researcher (Bruijns et al., 2019).

Questions 6 through 13 were questions about dysgraphia. They were designed to recognize the participants' knowledge of the subject matter. Questions were added to provide clarity and additional information. Observations of the participants' body language and self-efficacy were noted according to her physical response and reply time (Eide & Eide, 2006).

Question 14 addressed the participants' self-efficacy while addressing their knowledge and recognition capability of dysgraphia in their early childhood classroom. When the focus is

on experience (an essential attribute in ethnographic participant-observation) and grounded theory research, the emphasis is hermeneutics (Moustakas, 1994). Questions were added to provide clarity and additional information. Observations were noted according to participants' physical response and reaction time (Bandura, 1986b).

### **Individual Interview Data Analysis**

Member checking was used to enhance credibility. "Member checking covers a range of activities including returning the interview transcript to participants, a member check interview using the interview transcript data or interpreted data, a member check focus group, or returning analyzed synthesized data" (Birt et al., 2016, p. 1803). In this study, the interview transcript was returned to the participants to enhance accuracy.

After the member check, a narrative analysis was conducted. Through a narrative analysis, the interview responses were analyzed. Ideas and phrases were identified, and preliminary codes were assigned to structure and label the data. The use of manual coding was used to code, sort, and retrieve the data from the interview responses. I then used horizontalization and phenomenological reduction to identify the preliminary codes from the interview data. Moustakas recommended that in completing this step, the researcher must be receptive to every statement (Moustakas, 1994, p. 122). An open mind was kept when examining each statement in relation to the epoché process. I ensured that the statements were not repetitive and sufficient to select. Moustakas (1994) suggested asking two questions when selecting statements: (1) "Does it contain a moment of the experience that is a necessary and sufficient constituent for understanding it?" and (2) "Is it possible to abstract and label it?" (p. 121). By using these questions and the process of epoché, I was better able to ensure horizontalization and phenomenological reduction.



## Focus Groups

After I analyzed the data from the semi-structured interviews, the participants participated in a focus group (one group for the Oklahoma participants and one group for the Texas participants), discussing the perceptions of their training in recognizing dysgraphia in young children. This data collection approach provided the opportunity for observation while the participants engaged in a dialogue about the research topic. Focus groups facilitate dialogue and interaction in relation to the research topic so that attitudes and experiences can be observed (Jarvis & Barberena, 2008). The focus groups took place via Zoom in a confidential atmosphere with a time frame of 1 hour for completion, and a plan was in place to refine the questions after the first focus group, if needed. I collected the data from the focus group by Zoom and audio recordings and by taking notes of the discussion. The focus groups were facilitated in the same manner as the semi-structured interview process to ensure that the participants remained on topic.

The focus group questions were as follows (see also Appendix H):

1. How would you describe dysgraphia? (RQ2)
2. Why is it important for early childhood teachers to be able to recognize the warning signs of dysgraphia? (RQ3)
3. What do you remember being taught about dysgraphia in your undergraduate education courses? (RQ2)
4. How do you feel about your own ability to recognize dysgraphia in your students? (RQ3)
5. What instruction do you believe the university setting should have provided on the topic of dysgraphia and its warning signs? (RQ1)

Dysgraphia can have many detrimental effects other than difficulty with written expression (McCloskey & Rapp, 2017). Teachers who can recognize the many facets of dysgraphia have a better chance of supporting the student. For many students with dysgraphia, early warning signs can include a print and cursive mixture, speaking aloud while writing, mismanaged focus, and difficulty thinking of the words needed to express oneself (Rettig, 2014).

### **Focus Group Data Analysis**

The focus group discussion was transcribed, and a copy provided to each participant. Member checking was completed as each participant examined the dialogue to check for accuracy. I read through the transcriptions, highlighting ideas and phrases by color. I then used horizontalization and phenomenological reduction to identify the preliminary codes from the focus group data. Manual coding was used to sort the data, and marginal notes were used to organize information. The group responses were coded to allow data triangulation by coherence between the research problem, questions, analysis, interpretation, and conclusions. The analysis of the content aimed to identify major themes and patterns among these themes (Moser & Korstjens, 2018).

### **Data Synthesis**

The data were analyzed by hermeneutic design. According to Moustakas (1994), hermeneutic science is the art of studying a text so as to fully understand meanings and intentions. The early childhood teachers reflected upon how they were trained and their ability to recognize the warning signs of dysgraphia. When the interrelationship of the experience and the underlying dynamics are understood, the essence is found in the experience. Gadamer (1984) explained that with hermeneutics, the clarification of text is not an isolated action but is the basic construct of the practice.

### ***Epoché***

It was the intent of this research study to refrain from bias and to gather the meaning of data without judgment or interpretation. Moustakas (1994) explained that with epoché it can be a challenge to allow our predispositions to disclose themselves and see things with an open perspective. By including the process of epoché from data collecting through data analysis, the researcher can focus on the participants' experiences (Moustakas, 1994). Journaling the thoughts of the phenomenon (Appendix I) allowed the researcher to maintain trustworthiness and to use a pure lens of self. Member checks were used to ensure that each transcription was accurate.

### ***Phenomenological Reduction***

During the process of phenomenological reduction, themes were recognized using horizontalization. Recognizing themes assists in isolating each nonoverlapping, nonrepetitive statement and better understanding "everyday situations, events and relationships" (Moustakas, 1994, p. 45). Each participant's experience was considered individually. Throughout phenomenological reduction, experiences were judged singularly and "analyzed in the light of its own evidence" (Moustakas, 1994, p. 44).

### ***Imaginative Variation***

It was necessary for the researcher to connect the various meanings and themes as they emerged in relation to the phenomenon. Defining themes involved examining the data with varying interpretations and using imaginative variation (Moustakas, 1994). The use of textural and structural descriptions assisted in recognizing themes and textural elements. Moustakas (1994) described textural-structural descriptions as a description that evolves through the combination of textural elements and themes.

### *Synthesis of Meanings*

Textural descriptions were assigned to a code and theme in the data analysis process. Noteworthy statements from the participants were assigned a code to parallel with other statements and themes (Creswell & Poth, 2018). A textural and structural description was generated into a description of the group experience (Moustakas, 1994). Throughout each participant's experience, their statements assisted with the synthesis of meanings.

### **Trustworthiness**

When referring to the trustworthiness of the research, the study's credibility, transferability, dependability, and confirmability were addressed. This section describes the methods used to establish trustworthiness and authenticity within this study. The foundations of trustworthiness assisted in ensuring authenticity in the study and preserved the reflexivity of the researcher throughout the research process (Patton, 2015).

### **Credibility**

Lincoln and Guba (1985) described credibility as the extent to which the findings of qualitative research are accurate and internally valid. Credibility within the study was represented through triangulation. Triangulation is regarded as a strategy within qualitative research to examine validity through the merging of information from different sources (Carter et al., 2014). Triangulation was applied in this study through the convergence of three different methods of data collection. According to Nassaji (2020), "Triangulation, which involves using multiple data collection methods, sources, explanations, or perspectives, ... helps to achieve a more accurate and complete understanding of the issue under investigation, thus increasing the validity and credibility of the findings" (p. 428). The data were collected in the order of the

participant letters, semi-structured interviews, and focus groups. The sequence was in this order to examine the experiences and behavior as an integrated relationship (Moustakas, 1994).

Member checking was utilized to reduce any biases or subjective influence. Member checking can be unified within the data collection process through a detailed questioning style during semi-structured interviews and focus group meetings and by depending on participants to verify data as the process unfolds (Naidu & Prose, 2018). Open-ended questions and the opportunity for reflection allowed for detailed documentation and the evidence of positive and negative self-efficacy from each participant. When interpretations have a truth value (Moules, 2002), the phenomenon becomes believable and identifiable. The participants of this study were allowed to review the information gathered from their interviews and focus groups to ensure accuracy and improve the study's credibility.

### **Transferability**

Transferability was ensured in this research study by relating the data to early childhood education programs. Transferability allowed connections to be made in the contextual meaning of the study with application to personal experiences (Tracy, 2013). Researchers confirm transferability in their work by presenting evidence that the research findings are relevant to other circumstances, times, perspectives, and populations (Patton, 2015). By documenting a full description of the research setting and social contexts, themes and interpretations from personal experiences were recognized within the coding process. Another way that transferability was ensured within the study was through an audit trail (see Appendix J) in guiding future research. The findings in this study are applicable to other contexts and settings.

**Dependability**

Dependability is imperative in measuring whether a study's findings can be duplicated and whether the data are consistent. Dependability was ensured through the use of an audit inquiry. Peer review is a review of the research process and data by someone who is familiar with the phenomenon and can provide support, challenge assumptions, and ask questions about interpretations and methods (Lincoln & Guba, 1985). Two individuals, who understand qualitative research and are somewhat familiar with the topic, were selected to examine the processes and provide feedback on the results. Both individuals provided guidance on how to address the participant letter instructions in order to collect accurate data on the participant's previous knowledge of dysgraphia. One individual suggested that notes be taken on the participant's body language during the interviews and focus groups. The other individual encouraged wait time during the interview and focus group questions so that the participants would be able to process and answer each prompt fully. I kept track of all interviews and focus group responses, notes, documents, and other data to ensure accuracy of the data findings.

**Confirmability**

I used reflexivity to ensure there was confirmability within this research study through a reflexive journal (see Appendix I). Moustakas (1994) described bracketing as a process that enables the research method to stay embedded in the research questions, considering solely the topic under investigation. Within the steps of qualitative research, such as phenomenology, the researcher must begin with oneself (Butler, 2016; Shufutinsky, 2020); as the prominent tool of the research, the researcher must be consistently aware of past and personal ideas, perceptions, and connections with the topic (Butler, 2016; Creswell, 2013; Shufutinsky, 2020). I looked

closely at my previous experiences and position on this topic of research to identify how the research process could be influenced.

### **Ethical Considerations**

Approval to conduct this research was provided by the IRB at Liberty University. The intention of the IRB is to safeguard the ethical rights and well-being of human participants and protect them from risks within the research through the review of protocols, amendments, unfavorable events, and other matters (Liberale & Kovach, 2017). Site approvals were obtained for the participant letters, semi-structured interviews, and the focus group meetings. Participants were asked to electronically sign a consent form before any data were collected. Within the consent form, the participants were made aware of the voluntary nature of the study and their right to withdraw at any time. Confidentiality procedures were implemented to ensure that all data were secure throughout the research process (Patton, 2015). Pseudonyms for the settings and participants were used for confidentiality, and all recordings and transcripts were kept in electronic files that are password protected. Research records and data will be destroyed after 5 years per Liberty University's IRB requirements.

### **Summary**

In this chapter, I have described the research design, research questions, setting, participants, the researcher's social constructivism interpretive framework and philosophical assumptions, the researcher's role, the data collection and analysis plan, procedures for data synthesis, and the trustworthiness of the research study. Through a qualitative phenomenological methodology design, the researcher used participant letters, interviews, and focus groups to collect data on early childhood teachers' perceptions of their training in recognizing dysgraphia in young children. Participants in this study were selected through purposive sampling and

provided consent through email. Data were collected, transcribed, and coded. Manual coding was used to organize the themes and emphasize repetition. Subthemes were identified and grouped to recognize further themes. All information was confidential and organized for further research.

Early childhood teacher perceptions of their lived experiences and training in recognizing dysgraphia in young children were researched with trustworthy and confidential methods to convey clear data and awareness of the issue.



## **CHAPTER FOUR: FINDINGS**

### **Overview**

The purpose of this phenomenological qualitative study was to examine the lived experiences of early childhood teachers seeking to recognize the warning signs of dysgraphia. This study examined how early childhood teachers were trained in recognizing the warning signs of dysgraphia while taking undergraduate education courses in college. This examination was done by collecting the voices of early childhood teachers who received their bachelor's degree in early childhood education from an accredited university and who were currently teaching prekindergarten through third grade. This chapter presents the results of my data analysis as findings. The participants are described, followed by a presentation of the themes and subthemes, responses to the research questions, and a summary.

### **Participants**

The participants of this study were early childhood teachers who completed a bachelor's degree from an accredited university and were currently teaching prekindergarten through third grade in three public schools located in Oklahoma and Texas. Twelve participants were selected to take part in the study. All 12 wrote a participant letter, engaged in an individual interview, and contributed to a focus group. The participant letters were emailed and the individual interviews and focus groups were conducted through the Zoom meeting platform. Each participant was assigned a pseudonym, and in the following sections, a description of each individual is provided. Accumulating and sharing authentic life experiences is at the heart of a phenomenological approach to research.

The participants' demographic information and descriptive data is featured in Table 1. All participants held teaching certifications in early childhood, and their teaching experience

varied from 1 to 31 years. The table lists the participants' educational background, their highest degree earned, their number of years teaching, and what grade they taught at the time of this study. Following the table, the participant profiles are provided. I added information from my interactions and observations during the study—data not necessarily gleaned from what was stated by the participants.

**Table 1**

*Participant Characteristics*

Pseudonym	Year graduated	State degree obtained	Highest degree earned	Years teaching	Grade currently teaching
Lisa	Early 1980s	Oklahoma	Master's	31	Prekindergarten
Pamela	2021	Oklahoma	Bachelor's	2	Prekindergarten
Lori	2020	Oklahoma	Bachelor's	3	Kindergarten
Heather	1996	Oklahoma	Master's	27	Kindergarten
Becky	1999	Texas	Bachelor's	24	3rd
Julie	2011	Texas	Bachelor's	12	3rd
Karron	2014	Texas	Master's	9	2nd and 3rd
Kelly	2022	Texas	Bachelor's	1	2nd
Charity	2018	Texas	Bachelor's	5	3rd
Charlotte	2015	Texas	Bachelor's	8	3rd
Stella	2009	Louisiana	Bachelor's	9	2nd and 3rd
Alisha	2000	Texas	Bachelor's	23	Kindergarten to 3rd

**Lisa**

Lisa is an experienced teacher who currently teaches prekindergarten. She obtained her bachelor's degree from a university in Oklahoma and then graduated with a master's degree. Lisa has 31 years of experience teaching in various grades, and even though she retired temporarily, her love for young children prompted her to come back into the prekindergarten classroom. Lisa explained that early childhood was the age group she chose to teach because she had grown up working with younger children. She babysat for years and assisted with producing

children's plays for a summer arts program. She felt that she had a talent in bonding with young children and loved to get down on their level and communicate through a variety of sensory activities that allowed them to use their imaginations. She expressed her extensive experience in teaching children how to write by using multisensory activities.

### **Pamela**

Pamela graduated with a bachelor's degree and had 2 years of experience teaching early childhood students. She currently taught prekindergarten and had two young children of her own. Pamela decided to obtain her degree in early childhood education because of her own children. She adopted both of her children, and her youngest one has developmental needs. Through the time she spent working with him, she found a love for early childhood development and learning. She started her educational journey by working in a child care facility and taking the courses necessary to obtain her bachelor's degree in early childhood education from an Oklahoma university. In her first 2 years teaching, Pamela said that one of the things she found most challenging was differentiating instruction for students with disabilities. Their accommodation needs were not always clearly recognized at this age, and assisting them in learning was a challenge.

### **Lori**

Lori obtained a bachelor's degree from an Oklahoma university and had 3 years of teaching experience with early childhood students. She was currently teaching a kindergarten class. Lori started teaching in a first-grade classroom and then moved to a second-grade classroom before settling in her current position. She expressed that she decided to obtain a bachelor's degree in early childhood education since she has dyslexia and struggled in school. Lori explained that she struggled with learning how to read for many years and did not master

this skill until later in life. In school, the early grades left her feeling very exhausted emotionally and embarrassed at her inability to read. She went on to explain that a teacher assistant was able to connect with her and her reading difficulties. This assistant worked with her one on one and explained the steps of reading in a way that Lori could understand. Because of that teacher's ability to communicate at her level, and because of her continuous encouragement, Lori was able to finally read on her own and to find confidence in herself. This life event solidified her decision to become an early childhood educator. She taught in the younger grades to advocate and intervene for her struggling students.

### **Heather**

Heather graduated with an early childhood and elementary bachelor's degree and then received her master's degree from an Oklahoma university. She had 27 years of teaching experience in the early childhood setting. Her love for the early childhood grades started when she was able to assist in a prekindergarten class during her senior year of high school. As she started her bachelor's coursework, she decided to complete a double major in both early childhood and elementary education in order to be certified in both areas. Although she completed both areas of certification, her preference remained in the early childhood grades. She loved being around the younger ages, enjoying their innocence and being able to see how much they grow and learn in a year's time. Heather currently taught kindergarten students.

### **Becky**

Becky always knew that she wanted to work with children; however, she originally thought that it would be in the field of school psychology. After working as a camp counselor at a summer camp for her local YMCA, she recognized her love for teaching young children and decided to obtain her early childhood education certification. This decision was also influenced

by several of her family members who are educators. Becky further explained that her stepmother is a teacher, and all of her siblings have chosen the profession of teaching. Their additional influence and encouragement solidified her decision, and she began her college courses in early childhood education. Becky graduated with a bachelor's degree from a Texas university and has 24 years of teaching experience. Becky currently taught math and science in a third-grade classroom and worked diligently to instill a love of learning in every one of her students.

### **Julie**

Julie originally thought she would prefer teaching physical education or a special education life skills class. She received a bachelor's degree in physical education and in special education. No positions in physical education opened in her area, and she was hired as a special education teacher. Julie continued working in special education for 3 years in Oklahoma. Her family ended up moving from Oklahoma to Texas and, with this transition, she was unable to find a teaching position in special education or physical education. Her next step was serving as a substitute teacher in the area schools. Julie found a long-term substitute teacher position for a second-grade class. It did not take long before she realized that she had found the area of education that she liked the best. She loved the early childhood age and decided to return to school to get her early childhood education degree at a Texas university. She now had 12 years of teaching experience, with 9 years in an early childhood setting. Julie was currently teaching math and science in a third-grade classroom.

### **Karron**

Karron grew up in a large family and was homeschooled before going to college. Growing up, she knew that she wanted to work with children and looked for opportunities to

spend time with them. Karron volunteered to work with the youth in her local church and as a leader in the summer Vacation Bible School events. She was also able to work with children through her homeschool cooperative. As she started her early childhood education courses in college, she knew that she had chosen the correct field of study. Karron graduated with a bachelor's degree in early childhood education and obtained a master's degree in administration from a Texas university. She had 9 years of teaching experience in the early childhood setting, and this was her first year as a reading interventionist for second and third grade. Karron regularly assessed her students' reading levels and worked to individualize their reading instruction to focus on areas of weakness. Through her one-on-one intervention, the students' confidence and reading abilities grew.

### **Kelly**

This was Kelly's first year teaching, and her current placement was in a second grade dual-language class. In her classroom, she helped her students develop academically in the language of English, while building skills in Spanish. Kelly taught both English language arts and mathematics while highlighting unique features in both languages. With the English and Spanish teachers partnering, the goal of the dual-language program was for students to become bilingual and biliterate in both Spanish and English. Kelly was unsure what grade she wanted to teach when she first started her education courses, and it wasn't until she completed her student teaching that she recognized her love for the early childhood grades. She graduated with a bachelor's degree in early childhood education from a Texas university and loved spending time with her young students.

## **Charity**

Early childhood education was not Charity's initial plan for her profession. After having children at a young age, she first considered the field due to the flexibility of a school calendar. She also found it very interesting how the child's brain develops, and this became even more intriguing as she watched her own children grow. Another factor that made Charity consider being an educator was her grandmother. Her grandmother had been a teacher and had continually encouraged her to enter the field of education. She told Charity that she would excel as a teacher, and so she decided to begin her college degree. She quickly became fascinated with how much a young mind can learn and develop when given the appropriate instruction and opportunities. Charity started tutoring students after school at a local Salvation Army and fell in love with working in a small group setting. She then started tutoring children in the mornings and decided the humor and fun interactions with early childhood students was the perfect job for her. Charity graduated with a bachelor's degree in early childhood education from a Texas university and was in her fifth year teaching. She taught third grade English language arts and social studies and was the lead teacher in her subject matter.

## **Charlotte**

Being an educator was not Charlotte's original plan. Her heart was working with young children, but she started working in church missions and practiced leadership as a children's minister. Due to unforeseen circumstances, her position as a children's minister changed and she had to reevaluate her professional goals. Charlotte could distinctly remember the impact that her own teachers had on her life, and it was then that she decided to attend a university and get her degree in early childhood education. Charlotte knew this would give her even more time to work with the age group she was so passionate about and she could also assist the parents and

guardians who needed academic guidance for their child. Charlotte was in her eighth year teaching in early childhood. Her current placement was in a third grade dual-language class. She taught both math and reading in English, and her partner teacher taught the content in Spanish. She will be moved to a looping class the next school year, where she and her partner teacher will teach one subject area to a third-grade group of students and then a second-grade group of students. Charlotte will teach English language arts and social studies and her partner teacher will teach math and science. She was excited about the change and looked forward to the challenge.

### **Stella**

Stella's plan when starting college was to teach either middle school or high school. She felt that her passion for education was geared toward students in upper grades. It wasn't until Stella and her husband moved to Louisiana that she realized she was more interested in teaching in the early childhood grades. She followed her newfound passion and graduated with a bachelor's degree from a Louisiana university. With another move to Texas, Stella had to renew her teaching certification to adhere to the new state requirements and then was hired in an early childhood school. She was in her ninth year teaching a second and third grade "specials" class. She introduced technology, video production, broadcasting, and music to her students. Stella was a passionate and enthusiastic teacher and loved to instill a love of learning in her young students.

### **Alisha**

Alisha always knew she wanted to work with young children and geared her life around spending time with them. She started out babysitting for her nieces and nephews and then decided to work at a local Head Start program. For the next 10 years, she worked with 3- and 4-year-old students, preparing them for prekindergarten. As she worked at the Head Start program,



Alisha started gradually pursuing her early childhood degree. She knew she wanted to teach in a public school classroom setting, and through her college courses and first-hand experience working with the 3- and 4-year-old students, her knowledge and love for early childhood education grew. Alisha graduated with a bachelor's degree in early childhood education and was now in her 23rd year teaching. She was currently a gifted and talented teacher in a school that serviced second and third grade students.

## **Results**

The study sought to reveal the participants' preparation for the signs of dysgraphia with students in prekindergarten through third grade, how they regarded their training concerning the warning signs of dysgraphia in undergraduate early childhood courses, and what lived experiences may have affected their self-efficacy in assisting these students. The data were collected using participant letters, individual interviews, and focus groups. All participants contributed to the three forms of data collection.

## **Theme Development**

In phenomenological research, the theme development process consists of data collection, data analysis, and horizontalization (Moustakas, 1994). The data from the participant letters and the transcriptions from the individual interviews and the focus groups were analyzed. A list of codes was created and then categorized. The findings were supported by quotes from the participants. All of the quotes are presented verbatim to ensure accuracy and to depict the participants' voices. In this study, the theme development process culminated in using the steps for data analysis outlined by Moustakas (1994) in finding themes and subthemes. Themes were derived from the coding of the participants' statements of their lived experiences across all three

points of data collection. Four themes and nine subthemes were identified from the data (Table 2).

**Table 2**

*Codes, Themes, and Subthemes*

Keywords Phrases	Subthemes
<b>Theme 1: Dysgraphia Definition</b>	
Neurological disorder, learning disability, specific learning disorder, disorder, processing disorder, related to handwriting	Disability labels
Impairment in writing, impairment in fine motor skills, issues with writing, ability to write, difficulty forming letters, writing struggles, writing difficulty, communication in written form, writing distortion, writing difficulties	Written expression connection
<b>Theme 2: Warning Signs</b>	
Often confused, correlates, or mistaken for dyslexia, illegibility, letter reversals, letter-sound confusion, incorrect syntax, omitting words	Connections to other disorders
Awkward and/or painful grip, difficulty staying in lines and margins, incorrect letter formation, illegible or messy handwriting, incorrect size, spacing issues, spatial awareness problems, interchangeable letter cases, incorrect spelling, difficulty cutting and tracing, slow penmanship, difficulty tying shoes, spatial awareness problems	Fine motor skills
<b>Theme 3: Accommodations and Modifications</b>	
Special education teacher, school professional, occupational therapist, school counselor, diagnostician, specialist, response to intervention, dyslexia teacher, school psychologist	Diagnosis for assistance
Pencil grips, specific writing tools, colored paper, handwriting practice, lined paper, colored paper, prewritten notes, fine motor practice, multisensory learning, one-on-one, extra time, shorter assignments, technology, alphabet strip, spacing tools, oral responses	Intervention tools
<b>Theme 4: College Preparation</b>	
Covered dysgraphia briefly, not at all, never heard of the term, not fully prepared, did not discuss the topic, don't remember, one course for all disabilities, a little bit, no previous training, nothing in undergraduate classes, maybe 1 day spent on disorders, mixed with other disorders, nothing, nothing was taught on dysgraphia, linked to dyslexia	Dysgraphia introduction
Mislabeled, misunderstood, appropriate help and techniques, avoid getting behind, early intervention, more time to develop correct skills, avoid bad habits, teach coping skills early	Diagnosis importance

Not prepared at all, difficult, fairly confident, don't have the qualifications, wouldn't be able to recognize, semi-confident, nowhere even close to being confident

Self-efficacy

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### **Theme 1: Dysgraphia Definition**

From the participants' responses, a predominant theme emerged regarding the definition of dysgraphia. The International Dyslexia Association (2021) defined dysgraphia as a condition that is connected to impaired or disabled handwriting. Seven of the 12 study participants attempted to define dysgraphia. Three stated they did not know what dysgraphia was, and two researched the definition before writing the participant letter rather than reporting what they knew. The data that was researched beforehand was omitted from the results of this study.

Charlotte described dysgraphia in her participant letter:

A difficulty in being able to form letters correctly, spell words properly, writing legibl[y], etc. Many who have dysgraphia are unable to take their thoughts and put them into written words. Most of the time, this can be diagnosed in early elementary aged students, when they are first learning to write and spell.

Pamela stated in her participant letter that "dysgraphia is a learning disability that affects a student's writing abilities." In her individual interview, Charlotte explained that "dysgraphia for me goes back to being mentally unable to communicate what they are thinking into a written form." Charity stated, in the focus group session, that she thought of dysgraphia as "a writing distortion for kids." Three participants expressed that they were unaware of what dysgraphia was and usually thought of it as something connected to dyslexia. It was clear that not all participants were confident in their ability to define the disorder, and those who did attempted to connect it to other disability labels or written expression difficulties.

### *Disability Labels*

Properly identifying a learning difficulty is an essential step in receiving adequate interventions. The first subtheme identified with dysgraphia's definition was the connection of the disorder with other disability labels. This association was reported by seven of the 12 participants. Heather stated in her participant letter, "Dysgraphia is a neurological disorder ... that impairs writing ability.... Students with this disorder have trouble producing writing, but their intelligence level is normal. This disorder is identified as children learn to write." Kelly explained in her participant letter that dysgraphia "is often confused with dyslexia. Both dysgraphia and dyslexia have similar symptoms regarding struggles with reading and letters, but dysgraphia is more linked with a difficulty with writing." Becky responded by saying, "I have only started to hear the term dysgraphia this school year. What I do know is that it often correlates with dyslexia." Lori stated, "If someone is struggling with handwriting, well, that could be a lot of things. That could be ADHD [attention deficit/hyperactivity disorder], that could be dysgraphia, that could be dyslexia ... because they do have a lot of overlap."

Although a disorder may undoubtedly present itself in certain physical or mental complexities, providing a clear definition is often a challenge. Lori labeled the disability in her individual interview as a processing disorder by explaining that dysgraphia is a

kind of processing thing where it's harder for them to process what they're seeing and try to understand it.... You're continually trying to relearn that skill [handwriting], but in the long run, it's not that the child isn't working hard enough, it's just that they can't process what needs to go next.

### ***Written Expression Connection***

A second subtheme that emerged in defining dysgraphia was a connection between the disorder and written expression. Written expression is a self-directed process that requires translating one's thoughts into a transcription of meaningful written words. The process requires the organization of thoughts into sequential words, letter formation, correct spelling, precise spacing, and legible handwriting—causing those with dysgraphia to often have difficulty. This connection was reported by seven of the 12 participants. Karron stated in her individual interview that the problem “comes out more in written expression.” Early childhood teachers may recognize a difference in the levels of their students' writing abilities and often do not see this as a warning sign but more of a developmental delay. Alisha described the learning disorder in her individual interview as “some writing difficulties that are off level or not at their grade level... Mostly the sentence structure is off... That would explain the discrepancy.”

The World Health Organization, International Classification of Diseases (ICD) 11th Revision (2021) defined dysgraphia as a developmental learning disorder with an impairment in written expression distinguished by significant and continuing challenges in academic competences associated with writing, such as accuracy in spelling, punctuation, organization, grammar, and coherence. When students have dysgraphia, often their ability to write with ease and clarity is a struggle that will be displayed by a difficulty in framing thoughts and ideas into written words. Pamela stated in her participant letter that dysgraphia can be seen by students having “troubles putting their thoughts into words on paper.”

### **Theme 2: Warning Signs**

When there is a difficulty turning one's thoughts into written language due to a neurological condition, the difficulty may present with a variety of symptoms that can differ for

each individual. The second major theme that was detected from the data was the warning signs that are correlated with the recognition of dysgraphia in early childhood grades. This correlation was reported by 10 of the 12 participants. In Charlotte's participant letter, she stated:

A few signs you may look for are: poorly formed letters—often times they may be different sizes even, a pencil grip that appears awkward/abnormal, skipping letters when copying or writing words, a hard time writing and thinking at the same time, poor spelling or spelling the same word differently, messy handwriting, has a hard time writing on a line, etc.

Kelly explained in her participant letter that the warning signs a teacher might see in an early childhood classroom could be “issues with spelling, letter size and formation, letter reversals, and writing in a straight line, ... holding their pencil correctly” and then later added, “The student also may be able to communicate very well in oral communication, but just cannot transfer those thoughts to writing.”

In her participant letter, Heather listed some of the symptoms of dysgraphia that she might see in her classroom:

Trouble forming letters, tight, awkward, or painful grip on a pencil or crayon, difficulty following a line or staying in the margins, has trouble tracing lines or connecting dots, rarely chooses coloring as an activity because it is uncomfortable for them, handwriting is not just messy but illegible, [handwriting is] so bad, students cannot even read their own work, struggles with correct spacing and letter size, uses uppercase and lowercase letters interchangeably, spelling is an issue no matter how much practice or repetition [is used], and students will also have trouble using scissors or tying shoes.

If teachers are unable to define what the learning disorder is, they often can suggest the warning signs that might be detected or how it might be connected to another disability. If another disability is not connected to the learning disorder, the warning signs may be distinguished through fine motor, gross motor, or varying cognitive skills.

### *Connections to Other Disabilities*

The first subtheme in recognizing the warning signs of dysgraphia was how it is associated with other disabilities. Dysgraphia may occur alone or with other disabilities like ADHD or dyslexia. This association was reported by nine of the 12 participants. Becky stated in her participant letter: “Unfortunately, I do not have much knowledge on dysgraphia, I have only started to hear the term dysgraphia this school year. What I do know is that it often correlates with dyslexia.” In her participant letter, Karron said, “In my limited understanding of dysgraphia, I think it is similar to dyslexia in word confusion, floating letters, reversals, and spatial issues—it just comes out in written form instead of orally.”

Some undergraduate early childhood programs introduce a wide variety of learning disabilities in a short amount of time or in relation to other disabilities. In her focus group, Lori explained:

I know it’s not been a crazy long time since I graduated, but I definitely remember us touching on it [dysgraphia] very shortly in regard to dyslexia and how those disorders are kind of mixed up and just how common it is. A lot of times when you are dyslexic, it’s common to have dysgraphia as well.... I think we spent a day in class talking about dyslexia and other disorders.

### ***Fine Motor Skills***

Fine motor skills emerged as another subtheme when looking at the warning signs of dysgraphia. Fine motor skills are demonstrated by students being able to use the small muscles in their hands and wrists to reach, grasp, and manipulate objects such as pencils and other writing utensils. This connection was reported by eight of the 12 participants. Stella explained in her participant letter that dysgraphia can create fine motor issues in “writing in a straight line, sizing, and how they hold their pencil.” Heather stated in her individual interview that a child with dysgraphia may have “a bad pencil grip, a hard time coloring, cutting ... some of those fine motor skills.” Kelly stated in her participant letter that warning signs connected with fine motor skills include “letter size and formation, writing in a straight line, ... may also exhibit problems holding their pencil correctly.”

### **Theme 3: Accommodations and Modifications**

The third prevalent theme that emerged from the participants’ responses was in reference to the accommodations and modifications that could be offered to students who have dysgraphia. An accommodation in a classroom is something that changes how a student is learning the content. An example of this would be providing extra time on a classroom assignment or providing that student with frequent rest breaks. A modification in a classroom is changing what a student is learning based on his or her individual abilities. An example of this would be providing a lower-level book to complete an assignment or project.

In looking for assistance, it is imperative that a diagnosis first be made, and early childhood educators need to know who is qualified to make the diagnosis. According to the participants’ responses, a wide range of professionals can diagnose a young student with



dysgraphia. Is accurate information for diagnosis screening given to our undergraduate preservice teachers before they enter the classroom?

Kelly was reluctant to describe what could assist a student with dysgraphia when she was still unsure how to recognize it in the classroom. She stated, “I don’t know. I know a lot of handwriting practice, just the repetition to make sure that there’s no reversals or to correct the reversals.” Charlotte could not recall having recognized any students with dysgraphia; she had had only a few kids who struggled with writing. She stated her accommodations and modifications allowed them to

orally answer on spelling tests.... I’ve given some of them guided lines instead of just notebook paper, but almost like you use in kindergarten with three lines to help them with spacing of the letters. Either they have less to copy, or it’s already done for them.

After the diagnosis has been confirmed, it is necessary to provide intervention tools that can accommodate or modify the content being presented to the student with dysgraphia. Some examples of intervention tools for dysgraphia would be activities to assist with fine motor coordination and strength; hand, wrist, and arm position exercises; and manipulation of various materials to assist with the deficit area.

### ***Diagnosis for Assistance***

It is imperative that students have the correct diagnosis in order to receive the specialized interventions needed to help them succeed. In a school setting, an occupational therapist can evaluate fine motor deficiencies; however, to receive identification for school services with accommodations, a certified school psychologist or diagnostician is needed to assess the student. The professional who would diagnose a student with dysgraphia became a subtheme. The participants were asked if they knew who could identify dysgraphia in a young student. Out of

the 12 participants, seven stated they did not know who could diagnose the learning disorder. The remaining five participants attempted to answer the question, but none of them seemed confident in their response.

Heather stated in her participant letter that “this type of testing can be done by a school professional or occupational therapist.” Stella first stated in her participant letter that a teacher should “refer them [the student] to your special education department for an evaluation” and later in her individual interview she explained that she would “reach out to the diagnostician, the special education diagnostician” for a dysgraphia diagnosis. Kelly was unsure of who would diagnose dysgraphia and explained that she “would assume that it would be the same group of people that diagnose dyslexia, because I feel like there’s a lot of symptoms that kind of overlap.”

### ***Intervention Tools***

Without an accurate diagnosis of dysgraphia, young students may miss the specialized intervention needed to assist with the areas they are weak in. This type of intervention may include strengthening hand muscles, arm positions, body posture, or fine motor skills. A second subtheme that emerged was the tools used for intervention. This correlation was reported by 10 of the 12 participants, with most stating pencil grips as the tool most used to assist with dysgraphia.

Charlotte stated in her participant letter that “you may work with them in a small group or one-on-one to improve motor skills, pencil grip, letter formation, ... give them extra time as needed, have them copy less when possible.” When a full understanding of a learning disorder is lacking, attempted interventions can present more frustration for the student than assistance. Lori explained in her individual interview that one way to provide intervention for a young student with dysgraphia was by using an alphabet strip with “uppercase letters and lowercase letters

listed on their desk.... We also used spacing tools, which is just a little thing to set between each word.”

Participants who had a limited amount of knowledge attempted to have a variety of accommodations and modifications to assist with writing. Pamela stated in her individual interview:

I think for dysgraphia, it’s a lot of review and having them practice those letters and the sounds while working on fine motor skills to strengthen the hands. To work on their pencil grip and their sustainability of writing so they don’t tire as easily. Another thing I do in my classroom is a lot of multisensory, so we’ll use sand and shaving cream for kiddos that have no letter formation at all.

#### **Theme 4: College Preparation**

Early childhood undergraduate courses typically provide a variety of educational topics, and each university has its own program expectations. The 12 participants were asked to recall the topic of dysgraphia in their education courses. For some, it had been less than 5 years since they had been in college; however, for some, it had been more than 20 years. Heather mentioned in the focus group, “I didn’t know anything about dysgraphia until working with other fellow colleagues, but nothing in my undergraduate courses or even my master’s.”

The participants were asked to reflect on how their college courses prepared them for dysgraphia recognition and intervention. In understanding what the learning disability is and what warning signs to look for, the educators were given the opportunity to recognize how their undergraduate education affected both their students’ academic and social success and their own self-efficacy. Often when teachers do not feel prepared or knowledgeable about a subject, low self-efficacy can cause feelings of professional doubts and concerns. They may feel they have

missed opportunities to assist their students with disabilities or let them move forward without appropriate assistance. Alisha acknowledged in her individual interview that not knowing about dysgraphia caused some of her students to move on to the next grade: “I don’t really recall much at all about dysgraphia in my earlier years. That’s probably why they slipped through my fingers.”

### ***Dysgraphia Introduction***

Undergraduate education programs attempt to provide courses that prepare their preservice teachers with adequate training; however, when a learning disability is not introduced in a well-defined manner, confusion and misunderstanding can be the result. A subtheme that emerged was how the learning disability dysgraphia was introduced in college education programs. All 12 participants stated they did not feel that their early childhood undergraduate courses prepared them adequately to recognize the warning signs of dysgraphia. Stella stated in her individual interview, “I have to admit that in general disabilities, I don’t even know if we talked about dysgraphia. I think we talked about dyslexia. So, I think dysgraphia is not something we even discussed that I remember.”

Some of the participants described how their exposure to various learning disabilities was either covered briefly or in conjunction with a wide variety of other disabilities, making many of the classifications unclear. Kelly, who just recently graduated with her bachelor’s degree, explained in her individual interview, “I think that in college, we spent a ton of time talking about things like the T-TESS [Texas Teacher Evaluation and Support System] and the laws of education, but I really feel like we maybe had a course that covered all the learning disabilities and we were expected to learn about a ton of these things in one semester.”

Other participants were more certain that the topic of dysgraphia was never introduced in their undergraduate courses. In her individual interview, when asked if she felt that her courses in college prepared her to recognize dysgraphia in early childhood settings, Julie responded, “They did not prepare me at all. I didn’t even know about dysgraphia until this year. So, I have received no previous training.” Becky’s response to this question in her individual interview was similar: “I don’t think they did it at all. I don’t remember ever hearing the word dysgraphia in college.”

### ***Diagnosis Importance***

The warning signs of dysgraphia are often misunderstood and can lead to a misdiagnosis or incorrect understanding of the student’s learning characteristics. The importance of a dysgraphia diagnosis was another subtheme that developed from the participants’ responses. The significance of a diagnosis was emphasized by seven of the 12 participants. Lisa stated in the focus group that students with dysgraphia having no diagnosis “will be labeled as lazy and not get that extra help—the appropriate help and techniques to teach them—and they will get behind.” Lisa later added, “To be able to identify earlier gives us [teachers] earlier intervention opportunities and they [students] have more time to develop the skills and techniques to improve.” Heather added to the focus group discussion by stating that a diagnosis assists with “not labeling those students as lazy where they truly have a problem. It may come off as defiant or lazy, more of a behavioral issue instead of a neurological disorder.”

A misdiagnosis can attribute the challenge to a student’s lack of motivation, low self-efficacy, or poor learning habits that can ultimately hinder academic progress. Charity indicated in the focus group:

I think it goes along with just catching it early and teaching coping skills early. Once you get kids set in a way to how to hold their pencil and how they write, it gets harder and harder to fix that. So, the earlier you catch it, the more strategies they can have and try to correct it.

### *Self-Efficacy*

Teachers with low self-efficacy may lack the confidence needed to address challenging situations in their classroom or may avoid providing the support needed by their students in areas of weakness they do not completely understand. As the participants reflected on the research topic and their own abilities in recognizing dysgraphia, self-efficacy emerged as a subtheme. Out of the 12 participants, 11 responded with their feelings about their knowledge of the research topic, their undergraduate training, and how to respond as an early childhood educator and advocate for their students with dysgraphia.

Heather discussed in her individual interview how she felt she was prepared to recognize dysgraphia in her undergraduate courses:

I don't think it [college courses] prepared me at all. I mean, I hate to be so bold.... No, I never heard of it [dysgraphia] and haven't heard of it until the past few years when dyslexia has really come about. Then, along with dyslexia, you hear about dysgraphia, and I've taught for a long time and never heard of it in college, or it wasn't really an issue. So, sadly it wasn't anything that I was made aware of.

In reference to her ability to recognize dysgraphia, Charity stated in her individual interview, "Do I know the difference between a kid who just has poor handwriting and a kid with dysgraphia? I couldn't really tell you."

As the participants met in their focus groups, they were asked how they felt about their ability to recognize dysgraphia in their students. In a group of colleagues, their lower self-efficacy was more predominant. In her focus group, Karron stated, “It’s hard to know sometimes: Is it they just never got good handwriting instruction? Is it that they still don’t know the sounds, and so they don’t know how to translate it from a sound to a written expression?” Charlotte, who taught English language learners, added, “Sometimes I wonder if it’s just a translation issue, because they might not always be able to verbally tell me if there’s an issue.” Stella stated:

I feel like I did get a good education. I do feel like I was prepared more than many teachers that go in the classroom. I have to admit that in general disabilities, ... I don’t even know if we talked about dysgraphia. I think we talked about dyslexia, so I think dysgraphia is not something we even discussed that I remember.

Charity included questions she had:

Is it just poor handwriting? Are there visual impairments? Is it COVID instruction? They just didn’t learn how to hold their pencil, and so it’s hard for me to look at it and be like, this is what is happening.

### **Research Question Responses**

The participants’ accounts provided the four major themes and nine subthemes that emerged from the collected data. These themes enabled me to answer the study’s central research question and three subquestions.

#### **Central Research Question**

The central research question asked: What are the lived experiences and perceptions of early childhood teachers of their training in recognizing dysgraphia in young children? There

was a general consensus among the 12 participants that their training and lived experiences have not adequately prepared them to recognize dysgraphia in young children. In reflecting on what the participants could remember from their undergraduate courses and how this knowledge had been applied in their own classrooms, the majority felt that they lacked the information necessary to assist their students with dysgraphia. Four major themes emerged from the data: (a) the definition of dysgraphia, (b) the warning signs of dysgraphia, (c) the accommodations and modifications used for students with dysgraphia, and (d) how college prepared them to recognize dysgraphia. In her individual interview, Julie explained, “I know that here recently we’ve had a student that possibly has dysgraphia, but I’m not trained in that area to really see any warning signs or any possibilities of it. So, I don’t know much about dysgraphia.”

### **Subquestion 1**

The first subquestion asked: How do early childhood teachers describe their lived experiences and preparation for the signs of dysgraphia with students in prekindergarten through third grade? Vygotsky’s (1978) sociocultural theory detailed various stages that a learner moves through when mastering a new concept: (1) the inability to perform a task without assistance, (2) the ability to master a task within a personal zone of proximal development and with the support of a more knowledgeable other, and (3) the capability to perform a task without assistance. For educators to be dependent upon their own abilities, they must first go through a time of preparation and training with a more knowledgeable other. None of the 12 participants in the research study expressed positive experiences in preparation for the signs of dysgraphia with students in prekindergarten through third grade. Stella explained that in her undergraduate courses, “I feel like there was a lot of instruction on classroom management strategies. I don’t remember anything specific for students with disabilities.”



## Subquestion 2

The second subquestion asked: How do early childhood teachers regard their training concerning the warning signs of dysgraphia in undergraduate early childhood courses? To reflect on professional learning experiences, individuals will often be provided with clarity on areas of weaknesses and strengths. The 12 participants were asked what instruction or learning opportunities would have been beneficial in learning about the warning signs of dysgraphia. As a group, this question required them to think of areas within their undergraduate early childhood program that were lacking and how it could have been better in preparing them.

All participants expressed that their undergraduate experiences were lacking, and no one stated that they felt prepared for dysgraphia recognition when entering the classroom. In her focus group, Julie stated, “If dysgraphia was even talked about, I couldn’t even tell you because it was probably a sentence. If they could break it down a little bit more, ... concentrate specifically on things that you’re going to see in your classrooms.” Becky added, “I think that they should show you some actual evidence, ... some examples of what you might see from someone who has dysgraphia.”

A common statement expressed relating to undergraduate training was that a wide variety of learning disabilities were “lumped together” and no clear distinction was made for dysgraphia. Charlotte stated, “There needs to be a clear distinction between learning disabilities. They group dysgraphia and dyslexia together and there needs to be a very clear distinction.... Not enough time is spent on specific learning disabilities.” Kelly added, “Everything was just lumped together. I really do think that it should have been more than just a one semester long course. There weren’t specific examples and there weren’t any ways to diagnose or how we could accommodate.”

### Subquestion 3

The third subquestion asked: What lived experiences do early childhood teachers believe may have affected their self-efficacy in how children learn through social interaction, and how does this assist in recognizing the early warning signs of dysgraphia? Social learning theory recognizes the belief individuals have in their own ability and the impact this can have on their overall success. Bandura (1997) believed that positive self-efficacy can be developed and strengthened through learning experiences that provide enriching observation and participation.

When early childhood teachers can identify the warning signs of a learning disability like dysgraphia, their personal and professional self-efficacy increases. When educators have missed out on learning opportunities that increase their professional development, their positive self-efficacy decreases. When Julie was asked about experiences she has had that would assist her in recognizing dysgraphia, she responded by saying, “I don’t think that I have the qualifications to be able to do that.”

Children learn through social interaction, and as Bandura (1986a) stated in social learning theory, children learn from observing the people around them. For an early childhood student learning to write, observing the actions of those around them depends on imitative actions. An early childhood teacher who is adequately trained to instruct and recognize disorders like dysgraphia will be able to provide the social interactions and modeling needed for various learning opportunities. Lori admitted in her individual interview, “I think I have passed through two children I would say that had dysgraphia.” When this training is not provided, the social interactions needed for learning are not always adequately implemented and the child can progress forward in grades with little to no mastery.

## Summary

This chapter provided descriptions of the participants who were involved in this research study and, through data analysis, the results have been presented. Data were collected from participant letters, individual interviews, and focus groups. From the data, four major themes and nine subthemes were identified. The four major themes were (a) dysgraphia definition, (b) warning signs, (c) accommodations and modifications, and (d) college preparation. The central research question and three subquestions were identified and explanations given for each. In response to Subquestion 1, the subthemes of dysgraphia introduction and disability labels illustrated how early childhood teachers describe their lived experiences and preparation for the signs of dysgraphia with students in prekindergarten through third grade. In response to Subquestion 2, the diagnosis importance subtheme demonstrated how early childhood teachers regard their training concerning the warning signs of dysgraphia in undergraduate early childhood courses. In response to Subquestion 3, the subtheme self-efficacy depicted what lived experiences early childhood teachers believe may have affected their own self-efficacy in how children learn through social interaction and how this assists in recognizing the early warning signs of dysgraphia. The rich participation and resulting quotes from the participants supported the narrative details of the lived experiences and preparation of the participants.

## **CHAPTER FIVE: CONCLUSION**

### **Overview**

This phenomenological qualitative study examined early childhood teachers' lived experiences and perceptions of their training in recognizing dysgraphia in young children. Major themes and subthemes developed through the data collected in participant letters, individual interviews, and focus groups. This chapter provides an examination of the study's results in relation to the acquired themes and subthemes. This chapter includes (a) a summary of the study's findings, (b) an interpretation of the study's findings, (c) implications for policy or practice, (d) theoretical and empirical implications, (e) limitations and delimitations, and (f) recommendations for future research. This chapter closes with a conclusion.

### **Discussion**

This phenomenological qualitative study examined early childhood teachers' lived experiences and perceptions of their training in recognizing dysgraphia in young children. Major themes and sub-themes developed through the data collected in participant letters, individual interviews, and focus groups. Bandura's (1977) social learning theory and Vygotsky's (1962) sociocultural theory served as the theoretical frameworks of this study. The following sections will provide a summary of the thematic findings, a series of interpretations, implications for policy and practice, theoretical and empirical implications of the study previously explained in chapter two, limitations and delimitations, and recommendations for future research.

### **Summary of Thematic Findings**

The theoretical lenses used in this phenomenological research study were Bandura's (1977) social learning theory and Vygotsky's (1962) sociocultural theory. According to Bandura

(1986a), there are cognitive factors that create a positive or negative self-efficacy towards learning. Low self-efficacy can inhibit learning and, as Bandura (2001) stated, these factors can be predictors for academic success. According to Bandura (1986a), academic success can be achieved when a learner participates in observational learning, imitation, and modeling. When a student with dysgraphia has positive self-efficacy, the predictor for learning success is better. According to Vygotsky (1978), early childhood is a critical period for learning. He believed that learning was a cooperative, social, and interactive process. Vygotsky addressed three main themes in sociocultural theory: the zone of proximal development, scaffolding, and the more knowledgeable other. Students with dysgraphia have a greater probability of success with an adequately trained more knowledgeable other.

A phenomenological methodology was used to explore the perceptions of early childhood teachers regarding their undergraduate training in recognizing dysgraphia in their students. This approach was selected so that I could discover the meaning of the phenomenon investigated in this study and articulated through the participants' lived experiences (Creswell, 2014; Van Manen, 2015). To answer the questions presented in the research study, 12 early childhood teachers were selected as participants using set criteria. To ensure triangulation, three methods of data were used: participant letters, individual interviews, and focus groups. From the data analysis, four major themes and nine subthemes were recognized. The four major themes were dysgraphia definition, warning signs, accommodations and modifications, and college preparation.

The central research question asked: What are the lived experiences and perceptions of early childhood teachers of their training in recognizing dysgraphia in young children? Among

the early childhood teacher participants, there was general agreement that their undergraduate education courses did not prepare them to recognize the warning signs of dysgraphia.

The first subquestion asked: How do early childhood teachers describe their lived experiences and preparation for the signs of dysgraphia with students in prekindergarten through third grade? Based on the data, the participants experienced few opportunities for preparation in recognizing the warning signs of dysgraphia. When asked to describe her lived experiences, Alisha stated, “There needs to be a clear distinction between learning disabilities.... There’s not enough time spent on specific learning disabilities by themselves.”

The second subquestion asked: How do early childhood teachers regard their training concerning the warning signs of dysgraphia in undergraduate early childhood courses? The participants shared their feelings on their undergraduate training in preparing them to recognize the need for intervention for their students with dysgraphia. When asked if she had been trained on the warning signs of dysgraphia, Tracy stated, “Unfortunately, I am not too knowledgeable about this matter.... I do not have any prior knowledge that I can share with you.”

The third subquestion asked: What lived experiences do early childhood teachers believe may have affected their self-efficacy in how children learn through social interaction, and how does this assist in recognizing the early warning signs of dysgraphia? Not one of the participants expressed a positive self-efficacy through their lived experiences in assisting with dysgraphia recognition. When Charity was asked about her lived experiences in preparing her for dysgraphia in the classroom, she stated, “I don’t really feel like they [college] prepared me a whole lot.” When Lori was asked how she felt about her own ability in recognizing dysgraphia, she said that the process is “difficult for me personally.”

## **Interpretation of Findings**

The findings within this study indicated three key factors that teachers recognize as areas for improvement in their training in recognizing dysgraphia in young children. I discovered that for early childhood teachers to foster a positive self-efficacy in recognizing dysgraphia in their classrooms, they must be provided training that (a) delivers in-depth information over a significant period of time, (b) offers an accumulation of comprehensive resources, and (c) provides scenarios and work samples that students with dysgraphia might exhibit. These interpretations of the findings are based on the data collected from the 12 participants' lived experiences and perceptions of their training in recognizing dysgraphia in young children.

### ***In-Depth Training***

Through data analysis, I discovered the participants did not view their undergraduate training in recognizing dysgraphia in a positive manner. As I interpreted the data, I concluded that the early childhood teacher participants recognized their lack of knowledge concerning dysgraphia and in turn acknowledged the lack of prior lived experiences and training. When the participants were asked what instruction the university setting should have provided on the topic of dysgraphia and its warning signs, 10 of the 12 participants responded that they needed to be provided ample, in-depth training on specific learning disabilities. It was expressed that minimal time was given to the topic of disabilities, ranging from one day to one semester of instruction. The teacher participants explained that they were briefly instructed on the various learning disabilities, and few could remember dysgraphia being mentioned at all.

### ***An Accumulation of Resources***

As the data were analyzed, I concluded from their responses that the early childhood teacher participants would benefit from being provided with resources to assist in the recognition

of and intervention strategies for students with dysgraphia. As the participants reflected on what their college courses could have provided in relation to dysgraphia, eight of the 12 participants stated that it would have been beneficial to have had an accumulation of resources that could have been used in recognizing dysgraphia. Some participants stated that suggestions for accommodations or modifications would have been helpful when attempting to assist students with dysgraphia. Some examples of resources that could be introduced in supporting students with dysgraphia are handwriting resources (specific paper, slant boards, or writing tools), fine motor resources (putty, mazes, or tweezers), handwriting curricula options, multisensory resources (sandpaper or shaving cream), and technology resources (typing programs or speech-to-text).

Other participants stated that a checklist of early warning signs in the areas of handwriting, written expression, fine motor skills, and spelling would have assisted them in recognizing dysgraphia. Not all university education programs allot the time necessary to meet all of the content needs of their education graduates before they enter the classroom, but by ensuring that they have the tools and resources necessary to assist their students with disabilities, programs will assist in continued professional growth. By offering an accumulation of resources to preservice teachers, college programs are better preparing their undergraduate students to advocate and assist their future pupils.

### ***Scenarios and Work Samples***

As I analyzed the participants' responses, I determined that by observing work samples from students with dysgraphia as an undergraduate student and by being given specific classroom scenarios, early childhood teachers would have a better opportunity of recognizing the warning signs of dysgraphia in their classroom. When the teacher participants were asked about



ways that their lived experiences and training could have better prepared them for dysgraphia recognition, nine of the 12 teachers stated that if they were given work samples from a student with dysgraphia or had been given the opportunity to work through various scenarios that highlight the warning signs, they would have felt more prepared. It was stated that more visual learners would benefit from the opportunity to see the writing of a student with dysgraphia at various ages and stages. The consensus of the group was that simple lectures on the definition of a learning disability typically did not provide enough information for them to be able to recognize the various forms in which the disability could appear. Providing a variety of instructional techniques, to meet the needs of all learners, fosters a deeper level of understanding for students and gives them a better chance to succeed.

### **Implications for Policy and Practice**

The purpose of this phenomenological study was to examine early childhood teachers' lived experiences and perceptions of their training in recognizing dysgraphia in young children. The findings of this study add to the present literature that was reviewed in Chapter 2. Previous studies have emphasized that when children have problems with handwriting, they can begin to have low self-efficacy, weak relationships with peers, and negative discernments of their abilities (Chung et al., 2020); however, these studies did not emphasize how a well-trained teacher can recognize the warning signs of a student struggling with dysgraphia and can assist with fostering positive self-efficacy. This study highlighted early childhood teachers' lived experiences and training regarding their ability to recognize dysgraphia in their classrooms.

### ***Implications for Policy***

With the information gathered from this study, I have concluded that our early childhood students would receive proper screenings and interventions if policy makers attempted to

monitor and provide information concerning the instructional process in higher education. When policy makers are made aware of early childhood teachers' lived experiences and training concerning the recognition of dysgraphia in young children, more effective policies can be created to implement adequate training and coursework. Early childhood teachers should receive thorough training on all specific learning disabilities and be given opportunities to reflect on areas of weakness before entering their classroom for the first time. I believe that policies that focus on early childhood teacher training should be a focal point for policy makers. When drafting various educational policies, it is important to remember that young students' academic futures are at stake. Policy makers should regard teachers' experiences with careful consideration when making educational policies to avoid unproductive mandates. When policies are made for the betterment of teachers' training, the positive outcomes have a lasting effect in the lives of students.

Policy making at an institutional level should not simply focus on program numbers or pass rates for certification exams. To look carefully at accreditation standards for professional preparation, rather than funding or professional validation, one must look at the specific areas of strengths and weaknesses in each program. The future of early childhood education depends on the success and preparation of its graduating students. When the graduates' success rate in the classroom is failing due to improper training, the higher education program and course expectations need to be reevaluated carefully.

Some policies that could be instituted in higher education are (a) providing additional training concerning specific learning disabilities, (b) reevaluating accreditation standards for early childhood education programs with a focus on special education content, (c) providing

ample resources and classroom support for early childhood teachers, and (d) gathering data from teachers' lived experiences to plan for policy improvements or changes.

### ***Implications for Practice***

Teachers should make the effort to stay well informed of new research concerning specific learning disabilities, screening tools, and effective intervention strategies. Ongoing professional development in the areas of early childhood and special education will assist in fostering a positive self-efficacy for teachers and, in turn, will improve learning opportunities for their students. According to Brunsek et al. (2020),

It is imperative that we have evidence-based guidance about where investments should be made to create environments that support children's development. To this end researchers and policy makers are turning to PD [professional development] practices of educators in ECEC [Early Childhood Education and Care] settings. (p. 218)

### **Theoretical and Empirical Implications**

This section addresses both the theoretical and empirical implications of the study. This study confirmed that teachers' low self-efficacy can inhibit their students' academic success as identified by Bandura (1986a) in social learning theory. The findings in this study also reiterated that the early childhood years of development are a critical period for learning—specifically being taught from a more knowledgeable other who has been adequately trained, as stated by Vygotsky (1978) in his sociocultural theory. The relationships between the data collected and the theoretical and empirical literature are discussed below.

#### ***Theoretical Implications***

Bandura's (1986a) social learning theory states that there are cognitive factors that can create positive or negative self-efficacy towards the learning process. Low self-efficacy can

inhibit learning and, as Bandura (2001) stated, these factors can be predictors for academic success. This study showed that all 12 participants felt that they did not receive adequate training to recognize dysgraphia in their early childhood students, and this indication points to their low self-efficacy due to the lack of mastery in their lived experiences. In addition to recognizing the lack of adequate training, the teacher participants expressed ways that their undergraduate education programs could have been better to increase their self-efficacy.

Vygotsky (1978) believed that the early childhood years of development are a critical time for learning. In his sociocultural theory (Vygotsky, 1962), he stated that learning was a cooperative, social, and interactive process. Vygotsky addressed three main themes in sociocultural theory: the zone of proximal development, scaffolding, and the more knowledgeable other. When the more knowledgeable other has received adequate lived experiences and training, the learner has the benefit of experiencing a cooperative, social, and interactive learning process. The consistent references to adequate training for early childhood teachers and the learning process of young children correlate with the findings in this study.

### ***Empirical Implications***

The early childhood teacher participants were given the opportunity to perceive their own ability at recognizing dysgraphia in their classrooms and how they were prepared through the courses and training in their undergraduate college courses. This phenomenological study provides further empirical findings in determining how preservice teachers are trained in assisting their students who have learning disabilities. The data collected corroborate the study by Coates et al. (2020) in recognizing a frequently noted barrier in training preservice teachers to assist learners who have special learning needs and disabilities. When early childhood educators

feel confident in their own teaching capabilities, they are more apt to provide assistance and intervention for their students with learning disabilities.

The results of this phenomenological study also coincide with the research of Lopez et al. (2018) and Biotteau et al. (2019) that revealed the significance of a sufficient understanding of dysgraphia and how the signs, diagnosis, and therapy receive far too little consideration from researchers and clinicians. I was able to recruit early childhood teacher participants who shed light on how they were trained for dysgraphia recognition in their undergraduate courses. The findings of this study yielded data regarding the teachers' undergraduate training as lacking, and this in turn had a direct impact on their self-efficacy in dysgraphia identification and intervention in their early childhood classrooms.

### **Limitations and Delimitations**

This study had limitations. The first limitation was that all of the participants were women due to a shortage of male early childhood teachers in all three school districts. This limitation restricts the generalizability to the male perspective. The second limitation was the geographical location. The study took place in three public schools, two in Oklahoma and one in Texas. The third limitation was the geographical location of the participants' undergraduate training. The 12 participants received their undergraduate training in Oklahoma, Texas, and Louisiana, limiting the generalizability of the study.

This phenomenological study was intended to fill a gap in the literature concerning how early childhood teachers are trained in recognizing dysgraphia in their young students. For this study to be credible, I integrated certain delimitations. I ensured that all teachers were certified in early childhood education from accredited universities and had first-hand experience working with students from prekindergarten through third grade. By requiring these criteria, I ensured that

the participants would be able to discuss their lived experiences, training, and classroom observations.

### **Recommendations for Future Research**

Based on this study's findings, limitations, and delimitations, I have recommendations for future research. The study could be replicated with staff that include male early childhood teachers to broaden the perspectives and experiences and to use this as a comparison to female participants. The study could be conducted in more than three schools and in more than two states to provide different demographics. I would recommend looking at the variance in college graduates who received their early childhood bachelor's degree from an accredited online university versus a university that instructs in a traditional, face-to-face setting.

In this study, the participants gave several suggestions on what the university setting should have provided on the topic of dysgraphia (in-depth training, accumulation of resources, scenarios, and work samples), but only one of them mentioned having individuals who have dysgraphia come in as guest speakers to address the topic and answer questions from the undergraduate students. A future study should be conducted to see if presentations by individuals with dysgraphia would be of lasting benefit to preservice teachers when recognizing the warning signs in their young students.

### **Conclusion**

This phenomenological study examined early childhood teachers' lived experiences and perceptions of their training in recognizing dysgraphia in young children. The theoretical frameworks that guided this study were Bandura's (1977) social learning theory and Vygotsky's (1962) sociocultural theory. Data were collected from 12 teacher participants in both Oklahoma and Texas through participant letters, individual interviews, and focus groups. Through the

exploration of the study's central research question and three subquestions, four major themes were discovered, and nine subthemes emerged. The four major themes were (a) dysgraphia definition, (b) warning signs, (c) accommodations and modifications, and (d) college preparation.

The study's findings showed that the training the early childhood teacher participants received did not prepare them for the recognition of dysgraphia in their classrooms. In reflecting on their lived experiences and training, the participants recognized a low self-efficacy when considering their expertise on the topic of dysgraphia. The training that was received was described as inadequate, and through reflection the participants provided suggestions on what they felt undergraduate education programs should provide their early childhood preservice teachers: in-depth training, an accumulation of resources, and scenarios and work samples to assist in the recognition of dysgraphia warning signs.

Even though early childhood teachers may perceive their undergraduate training as lacking in certain areas, it is ultimately up to them to continue to grow in their profession and take a proactive view on staying well informed of the most current educational research. The results of this phenomenological study offer implications for both policy and practice to enhance early childhood undergraduate education programs and to ultimately train knowledgeable teachers who will advocate for children who learn differently but are just as capable of succeeding and flourishing throughout their lives.

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## Appendix A: Institutional Review Board Approval

# LIBERTY UNIVERSITY

## INSTITUTIONAL REVIEW BOARD

February 8, 2023

Melonie Johnson

Tony Ryff

Re: IRB Exemption - IRB-FY22-23-655 A PHENOMENOLOGICAL STUDY OF EARLY CHILDHOOD TEACHERS' LIVED EXPERIENCES AND PERCEPTIONS OF THEIR TRAINING IN RECOGNIZING DYSGRAPHIA IN YOUNG CHILDREN

Dear Melonie Johnson, Tony Ryff,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(ii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording).

Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation.

**Your stamped consent form(s) and final versions of your study documents can be found under the Attachments tab within the Submission Details section of your study on Cayuse IRB.** Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at [irb@liberty.edu](mailto:irb@liberty.edu).

Sincerely,

**G. Michele Baker, MA, CIP**

*Administrative Chair of Institutional Research*

**Research Ethics Office**

## Appendix B: Recruitment Letter

Dear Recipient:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree in Curriculum and Instruction. The purpose of my research is to examine the lived experiences of early childhood teachers who are seeking to recognize the warning signs of dysgraphia in young children, and I am writing to invite eligible participants to join my study.

Participants must be 18 years of age or older, have obtained a bachelor's degree in early childhood education from an accredited university, hold an Oklahoma and/or Texas teacher's license as a certified early childhood teacher, and currently teach pre-kindergarten through third grade. Participants, if willing, will be asked to participate in a participant letter (30-45 minutes), interview (30-45 minutes), and focus group (1 hour) that will include member checking. It should take approximately 2-3 hours to complete the procedures listed. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

If you are interested in participating in this study, please complete a confidential, online survey using the following link: [https://docs.google.com/forms/d/e/1FAIpQLSczX23iq3QmWogz54m61cjIKXcY29W\\_gUVzOTGKgtXCfiavaQ/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSczX23iq3QmWogz54m61cjIKXcY29W_gUVzOTGKgtXCfiavaQ/viewform?usp=sf_link)

The link will first take you to a screening survey than contains additional information about the research study I am conducting. To proceed to the survey, click "yes" and then "next" at the bottom of the form.

The consent document contains additional information about my research. After you have read the consent form, please click the link to proceed to the survey. Doing so will indicate that you have read the consent information and would like to take part in the survey.

Participants will receive a \$100 Visa gift card after the completion of the participant letter, interview, and focus group.

Sincerely,

Melonie Ardoin  
Liberty University Graduate Student



### **Appendix C: Screening Survey Questions**

1. Please provide the name of the school district in which you work.
2. Do you hold a bachelor's degree in early childhood education from an accredited university?
3. What grades are you certified to teach as an early childhood teacher?
4. What grade do you currently teach?
5. What is the total number of years you have been employed as a certified early childhood teacher?
6. What is your highest degree of educational attainment?
7. Do you plan on continuing your education?
8. Please provide your name and work contact information (i.e., phone number, extension, email address).

## Appendix D: Participant Letter

Date

Name of Participant:

After careful review, I am pleased to inform you that you have been chosen to proceed with the research study entitled “*A Phenomenological Study of Early Childhood Teachers’ Lived Experiences and Perceptions of Their Training in Recognizing Dysgraphia in Young Children.*”

I will be contacting you to schedule the dates for the individual interview, focus group discussion, and the participant letter.

The consent form can be found in the following link and returned by email:

<https://docs.google.com/document/d/1rr3rZLb8kmjU131S1Z07TgFVRoHEa5xXt9ccA4ftF2g/edit?usp=sharing>.

If you have any questions, please feel free to contact me.

Sincerely,  
Melonie Ardoin  
Liberty University

Date

Name of Participant:

After careful review, you have not been chosen to proceed with the research entitled “*A Phenomenological Study of Early Childhood Teachers’ Lived Experiences and Perceptions of Their Training in Recognizing Dysgraphia in Young Children.*”

I appreciate your time and interest in the study.

Sincerely,  
Melonie Ardoin  
Liberty University



## **Appendix E: Participant Consent Form**

**Title of the Project:** A Phenomenological Study of Early Childhood Teachers' Lived Experiences and Perceptions of Their Training in Recognizing Dysgraphia in Young Children

**Principal Investigator:** Melonie Ardoin, Doctoral Candidate, School of Education, Liberty University

### **Invitation to be part of a research study**

You are invited to participate in a research study. To participate, you must be a certified early childhood teacher. Individuals will be considered who have an Oklahoma and/or Texas teacher's license, who currently teach pre-kindergarten through 3rd grade, and who have obtained a bachelor's degree in early childhood education from an accredited university. Taking part in the research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

### **What is the study about and why is it being done?**

The purpose of this phenomenological qualitative study is to examine the lived experiences of early childhood teachers who are seeking to recognize the warning signs of dysgraphia in young children. The problem is the learning disability labeled as dysgraphia is often not recognized and analyzed until early adolescence, and this lack of early recognition hinders students' academic success and career opportunities.

### **What will happen if you take part in this study?**

If you agree to be in the study, I will ask you to do the following things:

1. Write a participant letter (30 minutes)
2. Participate in an interview, which will be audio recorded for transcription (30 minutes)
3. Participate in a focus group, which will be audio recorded for transcription (45 minutes)
4. Review the transcripts of your interview and your part of the focus group to ensure their accuracy (15 minutes)

### **Benefits of study**

Participants should not expect to receive a direct benefit from taking part in the study; however, they may benefit from taking part in a collaborative conversation with other early childhood teachers during the focus group.

Other groups will benefit, including students with dysgraphia and students in higher education teacher preparation courses. Students with dysgraphia will be diagnosed at an earlier age and served with intervention services. Higher education early childhood teacher candidates will better understand the warning signs of dysgraphia and increase earlier intervention.

### **What risks might you experience from being in this study?**

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

### **How will personal information be protected?**

- The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records.
- Interviews will be conducted in a location where others will not easily overhear the conversation.
- Confidentiality cannot be guaranteed in focus group settings. While discouraged, other members of the focus group may share what was discussed with persons outside of the group.
- Data will be stored on a password-locked computer. After 5 years, all electronic records will be deleted, and all hardcopy records will be shredded.
- Recordings will be stored on a password-locked computer for 5 years and then deleted. The researcher will have access to these recordings.

### **How will you be compensated for being part of the study?**

Participants who complete a participant letter, participate in an individual interview, participate in a focus group, and check their transcripts for accuracy will be compensated. After completion, participants will receive a \$100 Visa gift card. The gift card will be delivered to the participant's school administrator.

### **Is study participation voluntary?**

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University, [names of schools here].

### **What should you do if you decide to withdraw from the study?**

If you choose to withdraw from the study, please contact the researcher at the email address included in the next paragraph. Should you choose to withdraw, data collected from you, apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

### **Whom do you contact if you have questions or concerns about the study?**

The researcher conducting this study is Melonie Ardoin. You may ask any questions you have by emailing Melonie at [REDACTED]. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [REDACTED]. You may also contact the researcher's faculty sponsor, Dr. Tony Ryff, at [REDACTED].

### **Whom do you contact if you have questions about your rights as a research participant?**

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. The physical address is

Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515; the phone number is 434-592-5530, and the email address is [irb@liberty.edu](mailto:irb@liberty.edu).

*Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.*

### **Your Consent**

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

*I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.*

The researcher has my permission to audio-record me as part of my participation in this study.

---

Printed Subject Name

---

Signature & Date

## **Appendix F: Instructions for Participants' Letters**

*A first-year teacher who is a colleague has reached out to you with questions about a student in their class. They are wondering if this student may have some problems with written expression. In reflecting on your own undergraduate training, explain to them what dysgraphia is, at what age it may indicate that this is a concern, and what some of the warning signs may look like. Provide your colleague with the steps that an early childhood teacher would take if there was a possibility one of their students may have dysgraphia (i.e., parent communication, referral, assessment, intervention, etc.). There is no length requirement for this letter, and it will be kept confidential. Please email your completed letter to [mjohnson373@liberty.edu](mailto:mjohnson373@liberty.edu) within 14 days of this email.*

### Appendix G: Individual Interview Questions

1. Please introduce yourself to me as if we just met for the first time. (RQ1)
2. Please explain why you decided to become an early childhood teacher. (RQ1)
3. Of the educational skills on learning disabilities that you have mastered in college, which would you say were the most significant? (RQ2)
4. What made them significant? (RQ2)
5. What instructional areas of learning disabilities did you find the most challenging to learn? (RQ1)
6. What is dysgraphia and how does dysgraphia relate to you as an early childhood teacher? (RQ1)
7. How have you associated dysgraphia with other learning disabilities like dyslexia or ADHD? (RQ1)
8. What warning signs might you see your students display if they had dysgraphia? (RQ3)
9. In your class, has dysgraphia been more common in boys or girls? (RQ3)
10. What do you feel are the best means of intervention for this learning disability? (RQ2)
11. Have you observed medication assisting with dysgraphia? (RQ3)
12. Who do you know that can diagnose dysgraphia? (RQ2)
13. What accommodations or modifications have you made in the classroom for a child who has difficulty with handwriting? (RQ3)
14. How do you feel that your courses or experiences in college prepared you for the recognition of dysgraphia in the early childhood classroom? (RQ2)

### **Appendix H: Focus Group Questions**

1. How would you describe dysgraphia? (RQ2)
2. Why is it important for early childhood teachers to be able to recognize the warning signs of dysgraphia? (RQ3)
3. What do you remember being taught about dysgraphia in your undergraduate education courses? (RQ2)
4. How do you feel about your own ability to recognize dysgraphia in your students? (RQ3)
5. What instruction do you believe the university setting should have provided on the topic of dysgraphia and its warning signs? (RQ1)

### Appendix I: Researcher's Reflexive Journal

Date	Entry
Fall 2020	I have chosen to research the topic of dysgraphia because I can find very little research on the topic. I have experienced this in my own classroom but was unaware of how to recognize it accurately at the time of instructing the student. They were diagnosed in middle school.
Spring 2021	I am continuing to narrow the topic of my dissertation on dysgraphia down. I am looking more at how early childhood teachers are trained in recognizing this in their classrooms. I want to keep the age group that I am looking at narrowed to early childhood; however, I aspire to be aware of any previous opinions I may have as I look through research previously completed.
Spring 2022	I have decided to use Bandura's social learning theory and Vygotsky's sociocultural theory for the study. I have started Chapter 2 and am trying to refine my purpose statement. I hope that the purpose of this study will assist in filling a gap in the research.
Fall 2022	I am recognizing that my biases stem from my own personal experiences as an early childhood teacher and as a teacher in higher education. My views about early childhood education and advocacy for children could influence the questions I ask the participants.
Spring 2023	As data collection begins, I am making a conscious effort to avoid including any biases or previous experiences I may have had in the early childhood setting. Each question will be examined carefully as to not lead a participant in reacting or commenting in a certain way, but only to collect accurate data.
Summer 2023	In analyzing the participant data, chapter four is focusing on four major themes and nine subthemes.

### Appendix J: Audit Trail

Date	Entry
8-19-2022	Acquired district permission to conduct research from District 1.
11-2-2022	Acquired district permission to conduct research from District 2.
10-25-2022 & 11-2-2022	Emailed principals at each campus.
12-16-2022	Submitted IRB application
2-8-2023	Received IRB approval
2-16-2023	Emailed principals at both campuses to alert them of the survey I would be emailing their teachers.
2-16-2023	Emailed the screening survey to teachers at Districts 1 and 2.
2-24-2023	Sent out acceptance emails. (No teacher who expressed interest was not selected.)
2-24-2023	Emailed consent forms to participants from Districts 1 and 2.
2-24-2023	Received consent forms back from participants from Districts 1 and 2.
3-2-2023	Emailed District 3's superintendent and the campus principal.
3-6-2023	Acquired district permission to conduct research from District 3.
3-6-2023	Emailed the screening survey to teachers at District 3.
3-7-2023	Sent out acceptance emails. (No teacher who expressed interest was not selected.)
3-7-2023	Emailed consent forms to District 3 participants.
3-8-2023–3-10-2023	Received consent forms back from District 3 participants.
2-24-2023–3-10-2023	Emailed instructions for participant letters.
3-8-2023	Sent reminder emails to a few participants.
3-2-2023–3-22-2023	Received participant letters back.
3-8-2023–3-27-2023	Scheduled and conducted interviews.
3-10-2023–3-29-2023	Obtained member-checking approvals for interviews.
3-29-2023 & 3-30- 2023	Scheduled and conducted focus groups. (The Oklahoma schools were one group, and the Texas school was the other group.)
4-1-2023	Obtained member-checking approvals for focus groups.
4-2-2023 & 4-10-2023	Hand-delivered compensation Visa gift cards to all three campuses.
4-2-2023–5-13-2023	Analyzed data.