

K-12 TEACHERS' EXPERIENCE WITH PROFESSIONAL DEVELOPMENT ON
IMPLEMENTING INTERVENTION FOR COGNITIVE READING DISORDERS AND
DYSLEXIA: A QUALITATIVE HERMENEUTIC PHENOMENOLOGICAL STUDY

by

Rosemary Balestieri

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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Abstract

The purpose of this phenomenological study is to understand the experiences of the 10 K-12 teacher participants who may implement instruction and interventions for students who struggle with cognitive reading disorders and dyslexia. Instruction for intervention of cognitive reading disorders at the K-12 education level was generally defined as the multisensory approach more commonly found in schools. Instructional methods of 10 teachers at the K-12 education level for cognitive reading disorders was explored by implementing the central research question (CRQ), “What are the experiences of K-12 teachers who receive professional development to provide cognitive reading instruction with interventions specific to dyslexia?” The theory guiding this study is Piaget’s (1952) theory of cognitive development and the four developmental stages. A constructivist theory applies well to an educational qualitative study. Piaget's (1952) observations of cognitive development have influenced research across multiple fields of study. The methodology consisted of interviews, journal responses, and focus groups, that were recorded, transcribed, and analyzed, Data analysis was organized by reading and note-taking of emergent ideas, describing, and classifying codes into themes through interpreting, representing, and visualizing data. The phenomenological approach influenced the creation of data and its organization by reading through text, making margin notes, and forming initial codes. The meaning was derived from significant statements and common group experience of the participants. The analysis culminated into a textual description of what happened, how the phenomenon was experienced, and the development of the essence of the phenomenon. Throughout the study five themes were generated: Professional Development Experience, Interventions, Teacher Collaboration, Teacher Confidence, and Suggestions for Improvement.

Keywords: dyslexia, disorders, cognition, interventions, professional development

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Dedication

I dedicate this dissertation to my husband, James V. Carpitella, Jr., for his service as a Sergeant in the Army Reserves, and to our daughter, Destiny Rose Carpitella, for her love and support throughout this process. I dedicate this to my parents, for raising my sister and I with love, respect, and a moral compass to navigate the path. To my immediate family, extended family, and friends, I am grateful to have you as part of my life. I look forward to my next chapter of life with all of you in it.

This amazing journey could never be possible without you God. During the most challenging times you gave me the strength and determination to succeed. Thank you, God, for leading me to the people who believe in you. These people have inspired me and touched my life in meaningful ways. I am proud to say Liberty University does create Champions for Christ!

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Table of Contents

Abstract.....	3
Copyright Page.....	4
Dedication.....	5
Acknowledgments.....	6
List of Tables	14
List of Abbreviations	15
CHAPTER ONE: INTRODUCTION.....	16
Overview.....	16
Background.....	16
Historical Context	18
Social Context.....	19
Theoretical Context.....	20
Problem Statement	21
Purpose Statement.....	22
Significance of the Study	22
Theoretical Framework.....	22
Empirical Significance.....	23
Practical Significance.....	24
Research Questions.....	25
Central Research Question.....	26
Sub-Question One.....	26
Sub-Question Two	26

Sub-Question Three	26
Definitions.....	26
Summary.....	27
CHAPTER TWO: LITERATURE REVIEW.....	29
Overview.....	29
Theoretical Framework.....	30
Related Literature.....	32
Professional Development and Engagement	34
Global Influence on Society.....	36
Intervention and Policy	37
Cognitive Reading Instruction	38
Cognitive Reading Disorders.....	39
Dyslexia	40
Early Identification of Dyslexia.....	42
Late Identification of Dyslexia	43
Intervention and Implementation.....	43
Policy and Influence on Change	46
Summary.....	58
CHAPTER THREE: METHODS.....	60
Overview.....	60
Research Design.....	60
Research Questions.....	62
Central Research Question.....	62

Sub-Question One.....	62
Sub-Question Two	63
Sub-Question Three	63
Setting and Participants.....	63
Site	63
Participants.....	64
Recruitment Plan.....	64
Researcher Positionality.....	65
Interpretive Framework	65
Philosophical Assumptions.....	65
Ontological Assumption	66
Epistemological Assumption	66
Axiological Assumption	67
Researcher’s Role	67
Procedures.....	68
Data Collection Plan	68
Survey	69
Individual Interviews	72
Individual Interview Data Analysis Plan	74
Focus Groups	75
Codes.....	76
Trustworthiness.....	76
Credibility	77

	10
Transferability.....	78
Dependability.....	79
Confirmability.....	79
Ethical Considerations.....	80
Permissions.....	80
Summary.....	81
CHAPTER FOUR: FINDINGS.....	83
Overview.....	83
Participants.....	83
Evelyn.....	83
Janis.....	84
Teresa.....	84
Margaret.....	84
Jeanene.....	85
Sandra.....	85
Julie.....	86
Cathy.....	86
June.....	86
Helen.....	87
Results: Themes Development.....	88
Professional Development Experience.....	89
Limited Professional Development.....	90
Annual Professional Development.....	90

COVID-19 Pandemic Influence on Professional Development	91
Interventions	91
Assistive Technology.....	92
Group Work	92
Positive Reinforcement.....	93
Treat Students Equally	93
Differentiation.....	94
Collaboration.....	96
Teacher Collaboration.....	97
Teacher Confidence	97
Suggestions For Improvement	98
Research Question Responses.....	99
Central Research Question.....	99
Sub-Question One.....	99
Sub-Question Two	100
Sub-Question Three	100
Summary	101
CHAPTER FIVE: CONCLUSION	102
Overview.....	102
Discussion.....	102
Summary of Thematic Findings.....	103
Interpretation of Findings	103
Professional Development Experience	103

Interventions	104
Teacher Collaboration.....	104
Teacher Confidence	104
Suggestions for Improvement.....	105
Implications for Practice	105
Implication for Practice.....	105
Empirical and Theoretical Implications.....	106
Empirical Implications.....	106
Theoretical Implications	107
Limitations and Delimitations.....	108
Limitations	108
Delimitations.....	108
Recommendations for Future Research	108
Conclusion	110
References.....	112
Appendices.....	139
Appendix A.....	139
Appendix B.....	140
Appendix C.....	141
Appendix D.....	142
Appendix E	145
Appendix F.....	146
Appendix G.....	147

Appendix H.....	148
Appendix I	149

List of Tables

Table 1: <i>Teacher Participants</i>	87
Table 2: <i>Themes and Subthemes</i>	89

List of Abbreviations

Professional Development (PD)

Mears-Irlen Syndrome (MIS)

Scotopic Sensitivity Syndrome (SSS)

Learning Disabilities (LD)

Magnetic Resonance Imaging (MRI)

Multi-Tiered Systems of Support (MISS)

Response to Intervention (RTI)

Individuals with Disabilities Education Improvement Act (IDEA)

Every Student Succeeds Act (ESSA)

Data-Based Individualization (DBI)

Special Needs Education (SNE)

Self-Regulated Learning (SRL)

Professional Learning Communities (PLC).

Continued Professional Development (CPD)

Teacher Professional Development (TPD)

Teacher Understanding (TU)

Cultural Historical Activity Theory (CHAT)

International Multisensory Structured Language Education Council (IMSLEC)

Autism Spectrum Disorder (ASD)

Attention-Deficit Disorder (ADD)

Attention-Deficit/Hyperactivity Disorder (ADHD)

Sensory Processing Disorder (SPD)

CHAPTER ONE: INTRODUCTION

Overview

The professional development sessions and interventions that teachers have experienced may not adequately meet the needs of students struggling with cognitive reading disorders and dyslexia if it does not include multisensory strategies and interventions. (Gonzalez, 2021). The purpose of this phenomenological study is to understand the experiences of the 10 K-12 teacher participants who may implement instruction and intervention for students who struggle with cognitive reading disorders and dyslexia. The contents of Chapter One describes the organization of the chapter. The information was described historically, socially, and in the theoretical context. The background was discussed from the historical, social, and theoretical perspectives and the significance was explored within the context of theoretical significance, empirical significance, and practical significance. The Central Research Question of this study is: What are the experiences of K-12 teachers who receive professional development (PD) to provide cognitive reading instruction with interventions specific to dyslexia? Chapter One culminates with relevant definitions and a summary.

Background

Teacher experiences with professional development and interventions for cognitive reading disorders remain dubious for several reasons. First, teacher perceptions of reading interventions are not clearly defined. Mears-Irlen syndrome (MIS), or scotopic sensitivity syndrome (SSS) stemmed from individuals who experience visual stress when reading. The onset of colored filters began when Mears and Irlen discovered, individually, that children with reading difficulties benefitted from viewing text on colored overlays (Suttle et al., 2018).

However, there are no clear congruent findings to determine the value of color overlays as a reading intervention for dyslexia. Some research findings have not shown color overlays to be effective, while others have shown significant improvement when using color overlays as an intervention for cognitive reading disorders. Consequently, there is not enough empirical evidence to determine both effectiveness of colored overlays and an explanation as to why the effect is found (Suttle et al., 2018). This study included teacher experiences with common, multisensory reading programs used within some school districts, including the Orton Gillingham program. Dyslexia influences a variety of other cognitive processes as well as reading, writing, spelling, and phonological problems. Lastly, literature surrounding the factors that lead to the development of effective interventions for dyslexia was addressed. The focus of the research was based on teacher experiences with professional development who educate students with cognitive reading disorders and dyslexia to provide interventions to alleviate student struggles.

The practical perspective is a byproduct of theoretical, empirical, and practical application of research data. The cumulative effect of experience is evidence and knowledge. Teacher training may be interpreted in practical methods of teaching and intervention (Knight, 2017). The practicality is two-fold as it develops new research and addresses stakeholder concerns. Empirical research is valuable in determining how far research has come in the evolution of the understanding of dyslexia, yet it continues to be debated (Kirby, 2020). Empirical significance has led to a better understanding of the implications of dyslexia as a condition that affect students of all levels of intelligence. The theoretical significance lends itself to Piaget's (1952) theory of cognitive development and constructivism.

Teachers attending professional development who only receive PD rather than additional training in cognitive reading disorders may not be adequately prepared to provide reading instruction for students with critical cognitive reading disorders or dyslexia. Students, families, communities, and society are negatively affected by not meeting the needs of children. Theorists have contributed to understanding the problem by providing illumination of concepts and cognitively appropriate milestones for children. This study was designed around the historical, social, and theoretical principles that influence students' learning and teachers' professional development.

Historical Context

The definition of dyslexia has changed over time. As early as 1877, Adolf Kussmaul termed the concept of dyslexia as word blindness (Kirby, 2020). In 1883, Rudolph Berlin, an ophthalmologist, was responsible for coining the term dyslexia. During the 1800s, it was noted that educated adults also had reading difficulties, which were referred to by the French neurologist, Dejerine (1891), as *acquired alexia* (Bub et al., 1993). Dejerine purported alexia was a result of a stroke. Hinshelwood, who was an ophthalmologist, wrote a report on dyslexia and asserted it was not a matter of a deficit in visual acuity, rather a congenital deficiency of visual memory of words (Hinshelwood, 1896; Hinshelwood, 1900; Shaywitz & Shaywitz, 2020). In 1896, Dr. Pringle Morgan published the first report of developmental dyslexia and referred to dyslexia as *word blindness*. Up until the 1950s, dyslexia was considered a hereditary visual disability (Stein, 2018). In the mid 1900s, Orton (1937) argued that intelligence did not necessarily predict who was stricken with a cognitive reading disorder. During the 1880s, learning disabilities (LD) were frequently diagnosed in schools. Since that time, more research has determined there is a phonological deficit as well as a visual component that adds to the

struggle of reading, writing, and spelling problems. According to Ring et al. (2017), the concept of dyslexia, interventions, and characteristics have evolved to be described as an approach versus a method. The term approach is preferred because it incorporates a sense of flexibility instead of a stagnant methodology. Humans have a need to have their basic needs met and will strive to achieve them in a hierarchical order (Maslow, 1943).

Social Context

The social context of individuals who struggle with characteristics of dyslexia are influenced on multiple levels. The effects of dyslexia on an individual can resonate throughout a lifetime. Risk factors go beyond deficits in reading and writing. Personal happiness is affected by low self-esteem; therefore, it is important to also treat the social emotional influence in people who struggle with dyslexia. The stress factor is high because dyslexia presents challenges to everyday life. When educating students, it is imperative to help them understand that characteristics of dyslexia are not indicative of a low IQ. Dyslexia is neurobiological in nature. People with dyslexia experience many failures in their personal and professional lives. Available resources for social-emotional mental health should be provided as interventions for individuals who struggle with dyslexia (Kalka & Lockiewicz, 2018). Early identification can help navigate the academic and social-emotional influence. Negative outcomes can be alleviated by targeting stress and anxiety (Livingston et al., 2018).

Cognitive reading disorders such as dyslexia affect the social context significantly. Students can be negatively influenced by the cognitive deficiencies that cognitive reading disorders may present in reading, writing, and language disorders. Researchers continue to target interventions and cognitive training programs with placebo effects (Tsai et al., 2018). Brain scans, such as magnetic resonance imaging (MRI), have been used to examine cognitive

networks as well (Vandermosten et al., 2016). It is important to note that the participants for these studies were pre-readers perceived to be at risk for dyslexia. It is imperative that more research be conducted to determine what percentage of these participants developed dyslexia. The definition of dyslexia remains unclear, with the only universal definition being *literacy difficulty* (Knight, 2017). Students and society struggle to bring awareness to cognitive disorders. This has sparked a billion-dollar industry around brain training but falls short of findings beyond the placebo effect (Tsai et al., 2018).

Theoretical Context

Theorists have developed concepts that help to understand the learning process. Piaget's (1952) theory of cognitive development organized these stages categorically as follows: sensorimotor, preoperational, concrete operational, and formal operational stages. Piaget's (1952) observations of cognitive development have led to transference of cognitive principles across fields of education, science, and psychology (Frazier & Bryant, 2019; Piaget, 1952). Piaget is renowned for his interdisciplinary contributions. Piaget's (1952) theoretical methodology has been applied over decades and continues to resonate in current research across interdisciplinary fields.

Piaget's (1952) theory of cognitive development is not restricted to children. Since the 1990s, Piaget's (1952) schema theory has been used to study adult learning as well as vocational education. The conceptualization of concepts, not the routine of professional learning, is what influences knowledge in the workplace. Experience grounds a deeper understanding (Tourmen et al., 2017). Piaget supported the concept that sensorimotor experiences are foundational because they support symbolic representation of space. Embodied pedagogy happens when there is an interaction between teacher and student learning experiences. These experiences also act as

connections that can be felt between teachers and students. This relationship and its experiences lead to the process of scaffolding in education (Frazier & Bryant, 2019). Despite Piaget's renowned contribution, there is criticism of his methodology centered on his decision to use his own children as participants, and he used such a small sample (Babakr et al., 2019). Teachers in this study bring multiple opportunities of child observation.

Problem Statement

The problem is that the experience of teachers, professional development, and interventions may not adequately meet the needs of students struggling with cognitive reading disorders. Dyslexia influenced a variety of processes as well as reading, writing, and phonological problems. According to Gabriel (2018), district sponsored professional development needs to be delivered with fidelity; however, this addresses implementation of the PD program without focusing on evaluating and critiquing the effectiveness of the program for cognitive reading disorders. Dyslexia is a complex interaction between connectivity of neurobiological factors (Munzer et al., 2020). The academic instruction provided to some school districts tends to rely on teacher professional development to mitigate the reading gap for cognitive reading disorders and other learning disabilities. Most schools use the multi-tiered systems of support (MISS), which includes response to intervention (RTI). Tier 1 involves reading instruction for all; Tier 2 involves extra assistance in a small group setting; and Tier 3 is more intensive, requiring one to one instruction (Balue et al., 2015). Problems with instruction have been documented through a longitudinal study commissioned by the U.S. Department of Education (Balu et al., 2015). The findings indicated a need for early screening for students who may be struggling with dyslexia. The earlier students are identified the sooner they can receive effective intervention.

Purpose Statement

The purpose of this phenomenological study is to understand the experiences of the 10 K-12 teacher participants who may implement instruction and interventions for students who struggle with cognitive reading disorders and dyslexia. The research site is Lakeview Christian Academy, an educational setting, where teacher participants teach at the K-12 grade levels. Pseudonyms were used for the site and participants. The 10 participants described their experiences to illuminate how the strategies learned from PD prepared them to provide specific interventions for cognitive reading disorders and dyslexia. There is little research available that refers to specific teacher PD that develops educators' knowledge about what dyslexia is and what is not dyslexia. Many teachers have misconceptions about dyslexia and perceive it to mean a visual disability. In fact, it is a neurological disorder presenting with a phonological disability that impairs decoding and writing.

Significance of the Study

The significance of this research study was explored from the following perspectives: theoretical, empirical, and practical application. Theoretical significance is reflected as influence on the research design. Empirical research is explored to develop advanced PD and teaching strategies (Andresen & Monsrud, 2021; Bratch-Hines et al., 2020). The practical significance of the study is a culmination of effort that adds to the body of knowledge and expands on interest of research-based strategies for future studies.

Theoretical Framework

The theoretical significance of this study lends itself to the concept of Piaget's (1952) theory of cognitive development. Understanding the underpinnings of Piaget's (1952) theory diagrams a roadmap of cognitive development. The complexity of neurobiological networks is

an intricate exploration of scientific data (Bonfiglio et al., 2022). Piaget spent over five decades applying structured observations of children's actions. One of the criticisms of Piaget's (1952) research stems from the fact that he used his own children in his research, which is considered unethical and provides a small sample (Babakr et al., 2019). Teachers should have multiple opportunities for observing children at various developmental stages as well as implementing interventions appropriate for each stage.

The theoretical significance of the proposed research contributes to the body of knowledge on the effectiveness of PD for implementing targeted instruction for cognitive reading disorders and dyslexia. Students struggling with characteristics of dyslexia may benefit from enhanced instruction. Teachers implementing reading strategies were informed of researched-based methods of instruction and were provided with professional development and collaboration that empower teachers and provide sustainable education that transforms school culture (Bendtsen et al., 2021). Teacher education and scope of practice is broader when research-based PD is available. Educated teachers are more apt to deliver a higher level of skill when implementing reading instruction for students' individual needs (Gabriel, 2018). Cognitive reading disorders and dyslexia are complex. Assessment in the educational context requires expertise in understanding the characteristics of dyslexia and implementing an instructional plan targeting those special needs (Andresen & Monsrud, 2021).

Empirical Significance

The study is supported by research-based evidence describing teacher experience with professional development (Gonzalez, 2021). Research and data are prime examples of how this study can add to the body of knowledge. Empirical research is valuable in determining how far research has come in the evolution of the study of dyslexia (Sayeski et al., 2018). According to

Lyon et al. (2003), pertinent research on the characteristics and best practices for dyslexia exists, but it has not transferred significantly into pre-service teacher preparation programs or long-term PD for in-service teachers. The empirical significance of this research is the appreciation of meaning cultivated by observation, measurement, and phenomenon experience. Empirical research adds to the body of knowledge and contributes to exposing a gap in the research for further research studies. Empirical evidence is acquired by observation and experimentation. Sir Francis Bacon was known as the father of empiricism. Empirical research is valuable in determining how far research has come in the evolution of the study of dyslexia, yet this continues to be debated (Kirby, 2020). Empirical significance has led to an understanding of the implications of dyslexia as a condition that affects students of all levels of intelligence. Indicating that the symptoms of dyslexia and a lack of ability to read are incongruent to expectation (Protopapas, 2019), which is in contradiction to earlier assumptions that a lower IQ was the problem.

Practical Significance

The practical significance of this study is important because it influenced teacher practice, funding for professional development, and student learning. Targeted intervention for cognitive reading disorders and dyslexia are crucial for providing effective instruction. Teachers are faced with the challenge of learning appropriate instructional methods for cognitive reading disorders and dyslexia. Teachers want professional development that is relevant to the needs of the students (Fairman et al., 2020). This study can benefit the participants by determining best practices and affect change for the site by developing the most appropriate PD and strategies for serving students with cognitive reading disorders and dyslexia. It is a cumulative effect of experience, evidence, and knowledge acquired through the process of a research study. Utilizing

these methods in a well-designed study with similar population is transferable for another research study. In the proposed study, practicality is observable in an exploration of the relationship between teacher professional development experiences and teacher knowledge of dyslexia and implementation of interventions. Teacher training experience may be interpreted in practical methods of teaching and intervention (Knight, 2017). The practical significance of the proposed study is two-fold in that it lends itself in the design of new research and addresses concerns of stakeholders.

In an academic setting, parents, teachers, and administrators are all key components of supporting students' educational needs. Creating more opportunities to restructure teacher knowledge and aligning with that of the experts is essential (Peltier et al., 2020). Principals find that parents are eager to find interventions targeting cognitive reading disorders and dyslexia. Professional development is more meaningful when it is reinforced by the school culture. Sustainability is crucial in guiding students with cognitive reading disorders and dyslexia.

Knight (2017) suggested that teacher knowledge of dyslexia is limited. Similarly, their assumptions are based closely on behavioral definitions rather than empirical research on teaching students with dyslexia. Teacher collaboration and PD provides support for teachers to contribute their perceptions of effective instruction for student achievement. Having a defined framework to construct quality PD helps to organize the learning environment. This kind of structure sets a clear focus for what is most significant for teachers to understand, implement, and practice in their classrooms (Gore et al., 2017).

Research Questions

The following research questions are formulated to address the concerns of the proposed study. The following questions relate to the problem, purpose, and focus of this

phenomenological research. Teacher experience with professional development in an educational setting at the K-12 school level was explored. Teacher preparedness to implement the most effective interventions for students who struggle with cognitive reading disorders and dyslexia were examined. Responses to the following questions are revealed later in the study.

Central Research Question

What are the experiences of K-12 teachers who receive professional development to provide cognitive reading instruction with interventions specific to dyslexia?

Sub-Question One

How has the school's professional development informed teachers about the complexity of cognitive reading disorders and dyslexia?

Sub-Question Two

What interventions are currently used for students with cognitive reading disorders and dyslexia based on what teachers have learned from professional development?

Sub-Question Three

How confident are teachers in using the interventions to meet the diverse needs of students with cognitive reading disorders and dyslexia?

Definitions

1. *Dyslexia* - The prefix *dys* means difficult, and the root, *lexia* means words. The literal translation of dyslexia is difficulty with words (Payne & Turner, 1999).
2. *Metacognition* - Metacognition refers to a set of processes an individual uses in monitoring ongoing cognition to effectively control his or her own behavior (Rhodes, 2019).
3. *Placebo* - Placebo is the positive outcomes of treatment attributed to the belief in treatment efficacy but not to the genuine efficacy of treatment (Ueberwasser, 1787).

4. *Meares-Irlen or scotopic sensitivity syndrome* (synonymous) - Meares-Irlen or scotopic sensitive syndrome includes individuals with cognitive reading disorders and are sometimes diagnosed with visual stress (Suttle et al., 2018).

Summary

This research is a phenomenological study focused on the experiences of 10 K-12 teachers and their knowledge and perceptions about professional development. It was conducted to understand how prepared teachers are to implement the best interventions for students with dyslexia. This phenomenon was explored from the perspective of teachers' instructional influence. It has been suggested that teachers are not prepared to meet the diverse academic needs of students with dyslexia, primarily because they lack the biological knowledge to understand the neurobiological and cognitive demands of the disorder (Knight, 2017). There is a gap in the literature in relation to the effects of interventions on reading skills of people with cognitive reading disorders and dyslexia. There remains inconclusive evidence currently as to whether characteristics of dyslexia are directly related to a visual dysfunction (Knight, 2017). The Rose Review (Rose, 2006) was an independent report commissioned by the United Kingdom (UK) government to make suggestions on identifying and teaching both children and younger people with dyslexia and literacy difficulties. The report called for teachers to have a working knowledge of dyslexia. However, adults and younger children with dyslexia reported that accessing help at school is difficult, and "a lack of understanding the nature of dyslexia leads to unhelpful and damaging comments from some teachers, which have long lasting detrimental effects" (Dyslexia Action, 2012, p. 7). A variety of literature is used to analyze the visual stress on people with dyslexia by considering ophthalmalgia abnormalities, defective visual pathways, brain imaging, and photographic aesthetics. Research and intervention are critical aspects of

treating people who struggle with dyslexia. According to a diverse body of research, it is not likely that a student would be screened for an intervention because of the added expense to the school budget. Placing a student with dyslexia into the general education classroom has not proven effective (Shaywitz & Shaywitz, 2020). Rigorous empirical evidence over the past 40 years is presented supporting phonological deficiencies. According to Stein (2018), the visual system is crucial to reading, and dyslexia is the result of abnormalities in the neural pathways of this system.

CHAPTER TWO: LITERATURE REVIEW

Overview

The purpose of this phenomenological study is to understand the experiences of the 10 K-12 teacher participants who may implement instruction and interventions for students who struggle with cognitive reading disorders and dyslexia. Dyslexic characteristics may be associated with interventions defined as Meares-Irlen or scotopic sensitivity syndrome. Understanding the experiences of K-12 teacher challenges is significant to stakeholders, administrators, teachers, parents, and students. Teacher experience can be instrumental in designing PD to align with the cognitive needs of the children. Reading strategies and PD were explored. This chapter presents a detailed review of past and current research related to this study and illustrates the challenges that K-12 teachers experience in implementing instruction for children with cognitive reading disorders and dyslexia. Chapter Two begins with the theoretical framework of Piaget's (1952) constructivism and the theory of the four stages of cognitive development. Exploring the framework is enhanced by a literature review of the theory and how it relates to instruction, cognitive reading disorders, dyslexia, and PD. K-12 teacher experiences with PD were studied with an exploration of preparation for implementing reading instruction for students with cognitive reading disorders. Interventions and strategies for cognitive reading disorders were explored for the alignment of appropriate instruction and implementation for dyslexia. The strategies were selected for being developmentally appropriate for students who struggle with reading. Students with underdeveloped reading abilities are more at risk for failure in school. The final section of the chapter summarizes the related literature, supports the purpose of this research, and advances the need for further study.

Theoretical Framework

The theory that guided this study was Piaget's (1952) theory of cognitive development. Piaget (1952) spent over five decades applying structured observations of children's actions, and as a result, developed the four developmental stages of cognitive development. This theory provides an understanding of how children develop throughout the sensorimotor, preoperational, concrete operational, and formal operational stages. Piaget's (1952) theory is relevant to this study because it leads to the transference of cognitive principles across fields of education, science, and psychology (Frazier & Bryant, 2019; Piaget, 1952). Structured observation allowed Piaget (1952) to become more familiar with his participants' behavioral patterns. He believed that all children go through the process of stages regardless of environmental differences (Babakr et al., 2019; Hockenbury & Hockenbury, 2011). Piaget's (1952) developmental stages support the understanding of how students acquire knowledge about themselves and later about the world around them. During the sensorimotor stage, children experience limited vocabulary between 18 months to two years (Babakr et al., 2019; Cacioppo & Freberg, 2013). Children become aware of object permanence even when an object is no longer present (Babakr et al., 2019; Moreno, 2010). During the latter part of the sensorimotor stage, children learn to imitate others, which Piaget (1952) called deferred imitation (Babakr et al., 2019; Kasschau, 2003). Piaget (1952) theorized that this happens because children witnessed the action previously and then imitate what they learned (Babakr et al., 2019; Shaffer & Kipp, 2010). These processes are significant in understanding how learning and development takes place. Hanfstingl et al.'s (2019) study found that children are egocentric and not aware of other, different perspectives. Children in the preoperational stage do not have a concept of how shapes change. In the concrete operational

stage, at around seven to eleven years old, children begin to think more complexly. At 11 years old, children become logical and can comprehend abstractions.

Piaget's (1952) theory of cognitive development has been subject to criticism as some believe he did not attribute enough to the cognitive abilities of infants. Rochat (2023) assert that infants are capable of more cognitive activity than Piaget believed. Piaget was also criticized for researching too small a group of participants, and others claim that using his relatives in some of his observations was too narrow a perspective. Regardless of some discrepancies, Piaget has made tremendous contributions to science, psychology, and education.

Constructivism is a learning theory postulating that constructive knowledge and meaning is derived from individual learning experiences. Similarly, this theory asserts that the individual must construct his own knowledge; it cannot be transmitted (Narayan et al., 2013). Therefore, prior knowledge should be combined with new knowledge because learning is not a passive transmission between two individuals. Instead, learning should be shaped by individual experience and new knowledge. The constructivist theory supplies children with approaches of emerging knowledge. This process is constantly evolving across the developmental stages of children's growth. Piaget's (1952) theories of constructivism and the developmental stages provide a solid framework of understanding child development. Hermeneutic constructivism is an understanding that people experience the world differently. The events people acknowledge and appreciate become their own understanding of how the world works (Peck & Mummery, 2018).

Constructivism and the developmental stages ground the proposed study by interdisciplinary approaches to acquire skills such as reading and writing. Professional development for teachers is a constructivist approach for educating teachers. Understanding

theoretical influence and cognitive developmental principles are key to implementing sensorimotor experiences (Fedyk & Xu, 2018; Frazier & Bryant, 2019). Hermeneutic constructivism represents an experience and understanding of the world in which it is perceived. This process is called events because it does not exist independently without the human understanding of the event (Gadamer, 1960/2003; Peck & Mummery, 2018).

Related Literature

The proposed study focused on professional development as intended to support reading intervention. Response to intervention is a process of increasing tiers of intervention in response to student needs. This approach was developed by the Individuals with Disabilities Education Improvement Act (IDEA) in 2004, which was later revised to the multi-tiered systems of support (MTSS) as part of Every Student Succeeds Act (ESSA) in 2015. Research-based education is available on this topic; however, not all teachers are prepared to implement it into their classroom (Fairman et al., 2020; Lemons et al., 2016).

Teachers are challenged with the responsibility of meeting the needs of students through data-based individualization (DBI) and bridging the needs and appropriate strategies for intervention, school, and district resources (Al Otalba et al., 2019; Qvortrup, 2019). Special needs education (SNE) is a critical area of educating students that puts teachers and principals under pressure. Principals must deliver PD to educate teachers on how to meet the special needs of students (Holmqvist & Lelinge, 2021; Schraeder et al., 2020). Delivering high-quality reading instruction for students with cognitive reading disorders requires advanced skills for providing differentiation strategies. Effective education for all is complicated as it strays from the norm. Inclusive education has put more burdens and responsibilities on teachers, principals, and districts. Professional development is necessary to continue meeting the needs of an inclusive

and diverse body of students. Quality PD educates teachers and creates a learning environment for teachers to share their expertise with other teachers (Hauge, 2019; Valiandes & Neophytou, 2018).

There is growing concern around inclusive education and pressure on Christian administrators/educators. Some teachers admit concerns regarding how to educate students with special needs. Without specific and targeted professional development teachers worry they may not be able to support students at the level they require. Research based practices can assist in developing valuable professional development for teachers. Research is scarce on effective professional development for teachers and inclusive education. Christian schools are in support of educating all students, but concern looms over the delivery of effective implementation. Some teachers believe it is out of their scope of practice (Clausen et al., 2022). Christian schools remain devoted to the education of all students.

The Bible Society has created a version of the Bible that is designed to be dyslexic friendly. The modified text of the Bible presents with thicker paper, bigger print, and more visibly comprehensive font design. There are other ways in which a person with dyslexia can interact with the Bible. Some may prefer audio versions and others may enjoy being read to. Some individuals with dyslexia shared they enjoy interacting with the Bible in multiple ways. Others believed they can benefit and enjoy the Bible through music, art, and listening too (Strong & Van Ommen, 2023).

Orton-Gillingham was influential around the 1930s and 1940s in developing multisensory reading interventions for individuals with characteristics of dyslexia (Sayeski et al., 2018). Teaching methodology has evolved to include multisensory reading instruction for education of at-risk students as well as general education students. This methodology serves to remediate

reading difficulties as well as address the phonological and grapheme knowledge, which are all involved in the process of decoding. Legal mandates require an alignment with instruction that encompasses a multi-disciplinary approach to instructional practice. The Orton-Gillingham program meets the need for a scientifically based reading program (Ring et al., 2017; Ritchey & Goeke, 2006).

Professional Development and Engagement

Professional development and teacher engagement are equally important. According to Kelly et al. (2022) and El Islami et al. (2022), ensuring teacher engagement is essential in learning how teachers responded to PD and transfer those skills to become better educators. Teacher assessment is an important component in understanding how teachers respond to PD. Professional development communities are helpful in creating a school culture of collective learners (Clark et al., 2018; Huijboom et al., 2020). Teachers involved in continuing professional development recognize their own reading habits and are primarily engaged in professional development to learn strategies to enhance student reading (Broemmel et al., 2019; Vansteelandt et al., 2020). Teachers understand the need for quality PD when differentiating instruction to include students with learning disabilities (Alsamiri & Aljohani, 2019; Gottfried et al., 2019).

Developing sound educational strategies helps to identify effective engagement behaviors of effective educators. There is insufficient training for educators on how to provide intervention for students with dyslexia because of a lack of cohesive PD. Mills and Clarke (2017) asserted that misinformed educators do not understand the neurobiological and phonological influence of a brain-based disorder. Dyslexia does not cause individuals to see words, letters, and numbers backwards and letter reversals are not uncommon among children (Zettler-Greeley, 2018). Dr. Samuel T. Orton proposed that for individuals with dyslexia, neither hemisphere of the cerebrum

was dominant, alluding to the symptoms of dyslexia such as the reversals of letters, syllables, and words (Kuerten et al., 2019). Dyslexia is a phonological disorder presenting with difficulties in hearing letters and blending to create words. The phonological deficit makes reading accuracy and comprehension extremely difficult. Too much classroom time is wasted when teachers implement typical reading strategies to address the characteristics of dyslexia (Mills & Clarke, 2017; Sayeski et al., 2018).

Gonzalez and Brown (2019) found that the early childhood educators in their study misunderstood dyslexia as a visual processing disorder rather than a phonological problem, yet Washburn et al. (2017) indicated that reading difficulties are attributed to a phonological deficit. These assertions add to the premise causing confusion within limited teacher exposure and professional development. Schraeder et al.'s (2020) study pointed to the importance of principals being educated about dyslexia and other cognitive disorders; however, the results of the study did not support such a finding.

Teachers are interested in PD that reflects their needs and experiences as educators. Across the United States, there is a trend to elevate the teaching profession. Teachers who are seeking National Board Certification (NBC) want to improve by learning more about how to become better teachers. Professional development needs to be implemented over time and be consistent with teacher needs. Key issues emerged for best practices. Teachers who contribute to the content in PD are more likely to have a change in attitude toward PD. Board certification is a voluntary, performance-based portfolio. This is a complex endeavor, and the teacher must provide evidence of differentiation, content knowledge, and reflective practice. This is designed to culminate into more effective PD for student achievement. More educators are calling for

more cohesive and an interconnected approach to PD (Darling-Hammond, 2014; Handler et al., 2021).

According to Rodgers et al. (2022), more research is needed to understand how teachers' beliefs influence reading instruction. When teachers are engaged in reading instruction, they rely on what they believe to be the best practice. However, Donovan et al. (2015) suggested that more research is needed to determine if teacher beliefs change when they receive PD. This study improved upon previous work because teacher beliefs were measured at the onset and completion of the study (Risko et al., 2008; Rodgers et al., 2022). The methodology relied more on teacher interview data because the participants spoke freely from personal belief and experience. This was preferred to survey questions in which teachers may respond to what they think is the desired response. Ultimately, PD should include regular and ongoing feedback.

Global Influence on Society

Society has globalized, and this change affects the way individuals are seen as professionals. Teachers are now expected to grow and evolve in learning to continue developing as effective teachers. Foundations and governments allocate funds dedicated to teacher education (United States Department of Education, 2014). Professional development should support self-regulated learning (SRL) as it teaches learners about what and how to learn. SRL monitors progress and reflects on best practices to meet learning goals (Barr & Askill-Williams, 2020; Kramarski & Heaysman, 2021). Professional learning and development are enhanced by using PD to create professional learning communities (PLC). When teachers collaborate with teachers, knowledge from PD becomes a shared experience and adds to the cohesiveness of education in the school, district, and community. Integrating PD into a learning culture supports instructional practice (Huijboom et al., 2020; Lindvail & Ryve, 2019). There is

a need for sustaining PD because collaborative strategies create organizational change in education. Continued professional development (CPD) drives learning beyond the information session and situates it into the school culture as an action plan for positive change and student achievement (Bendtsen et al., 2021; Bergmark, 2020).

Intervention and Policy

Effective interventions for cognitive reading deficits need to be determined and aligned with policy. More attention to the construct of PD to succeed in its goal of producing comprehensive readers is a necessity. Many components need to be considered, such as the duration of the training, continuity of the content area, the quality of the trainer, and collective and collaborative opportunities to share knowledge (Merchie et al., 2018; Nordgren et al., 2021). Therefore, PD should provide instruction to improve teaching and learning. This is an investment in teachers, students, and the future. Collaborative infrastructures for PD and time for teacher planning has a direct influence on effective teaching methods (Nordgren et al., 2021; Reeves et al., 2017). Teacher practice benefits from collective professional development in schools that support the cultural historical activity theory (CHAT), where teachers share and construct meaning through social interactions with other teachers as professional peers. This interpersonal interaction builds trust and strengthens the academic support system through this shared culture (Hauge, 2019; Kramarski & Heaysman, 2021).

A research-based education has put more demands on school districts, stakeholders, principals, teachers, and communities to elevate the teaching profession. Together with collaboration and PD, successful interventions can be informed by research and implemented as effective instruction for mainstream students, inclusive education, and at-risk students with diverse cognitive needs (Bergmark, 2020; Gore et al., 2017).

Cognitive Reading Instruction

Cognitive reading instruction involves more than student comprehension. It is the assimilation of teacher professional development (TPD) and teacher understanding (TU). When teachers receive PD, their understanding evolves over time. Sustaining that education is important for initiating those strategies in the classroom (Sancar et al., 2021; Silver et al., 2019). Educating teachers through PD also supports the concept of teacher-student conversations as more important than merely covering the content area. It is through these exchanges that deeper learning is experienced, and students see themselves as a part of the learning process (Kierner et al., 2018; Lind et al., 2017). There is more research on how to apply PD rather than availing it to the teachers. Effective PD should transfer to student success. Professional development is unacceptable without concern for a research-based approach and the needs of students. Individuals with cognitive reading disorders have complex needs that should be supported with a research-based approach.

Reforms and policies are influencing the direction and contents of PD. There is a need for alignment between policy, innovative change, and strategies to improve education for students with cognitive reading disorders and characteristics of dyslexia and diverse disorders (Protopapas, 2019; Sancar et al., 2021). Reform initiatives continue to complicate PD and fracture the continuity of education. If teachers are challenged with addressing the next new initiative, it can interfere with the effectiveness of their lessons. These ideals need to align with PD and be used to educate teachers on how to implement the initiative to benefit their students. Teachers need to be regarded as partners in initiative reform; not just implementors. Ultimately, teacher PD should support a reflective approach and educate teachers on how to use student

learning outcomes to develop more effective lessons for cognitive reading disorders and other cognitive issues (Dam & Janssen, 2021; Merchie et al., 2018).

According to Gheith and Aljaberi (2018), teachers struggle with accepting peer to peer criticism. This could stifle the quality of feedback because teachers fear being judged. Gheith and Aljaberi's study also acknowledged more seasoned teachers are more comfortable with their skill set and are more likely to be self-reflective. The study suggests that novice teachers be encouraged to keep a reflective journal. This process is useful in understanding how curriculum implementation can benefit from self-reflection.

Professional development also has a social-emotional element. Despite this connection, teachers' personal experiences with PD have not been thoroughly studied. There is little research on the effect of teacher learning experiences. Teachers' emotional response to learning is significant, especially in an online format. Teacher participants in one study stated they felt like pioneers. Few researchers have studied the social-emotional experiences of teachers who receive online PD (Nash, 2022; Powel & Bodur, 2019). In contrast to traditional PD, teachers found online PD more challenging because it lacked in-person, peer-to-peer interaction. However, the teachers began to unveil new ways of sharing experiences online. Participants discovered they could build a strong sense of online community and support, and they found their professional identities begin to shift with peer positive reinforcement. A new sense of autonomy and ownership was experienced (Lambirth et al., 2019; Nash, 2022).

Cognitive Reading Disorders

Controversy remains a concern for students with cognitive reading disorders. However, most researchers agree that a cognitive reading disorder is a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling (Protopapas, 2019).

However, there are inconsistencies, because this would indicate that a person must be cognitively average to learn to read. More recently this concept has been challenged as there are cases where people with an intellectual disability, such as Down's syndrome, can learn to read (Protopapas, 2019; Snowling et al., 2020).

According to Rose (2006), "Dyslexia occurs across the range of intellectual abilities" (p. 10). Consequently, Stein (2018) used recent imaging studies to provide support of phonological impairment in the left hemisphere language portion of the brain. Response to intervention is generally designed around phonology. In addition, some students may experience auditory difficulties. Witton et al. (2019) and IDEA (2004) explained that educational audiology is a related service. Some school districts have hearing booths to test the children, while other districts do not, which complicates diagnosis and interventions. There is misalignment between program intervention and teacher knowledge because reading intervention programs provide a narrow scope of the cognitive issue. Therefore, this does little to advance teacher PD as these programs are designed to be implemented with fidelity. A deeper understanding of intervention must come from teacher knowledge and experience with intervention and at-risk student intervention (Gabriel, 2018; McMahan et al., 2019).

Dyslexia

It is crucial that to have a working definition of dyslexia because some reject the label. Arguments about what dyslexia is are difficult without a proper definition to rely on for discussion. Debates can only be resolved when there is an acceptable understanding of what dyslexia is (Kirby, 2020). Dyslexia is a type of cognitive reading disorder. According to the Rose Review (2006), dyslexia is defined as:

“A learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling. Characteristic features of dyslexia are difficulties in phonological awareness, verbal memory, and verbal processing speed. Dyslexia occurs across the range of intellectual abilities” (p. 10).

Dyslexia can occur in people with either a high or a low IQ. It is complex because this is contrary to what is generally believed about reading (decoding). Dyslexia remains a complex association of cognitive disorders that are not easily diagnosed (Shaywitz & Shaywitz, 2020; Snowling et al., 2020). The tension that surrounds the diagnosis is complicated because subtypes and cognitive relationships that mimic other disorders add to the complexity of a diagnosis. Therefore, dyslexia is considered a controversial topic of interest. Some of the afflictions of dyslexia are invisible, making it difficult to understand and gives rise to arguments around criticism of the term and its implications. Dyslexic characteristics may also be observable in other cognitively challenged individuals, which adds to the debate. In addition, Knight (2017) asserted that teachers have little knowledge of what dyslexia is and misinterpret it as a behavioral problem. The proposed study highlighted the need for teacher understanding of dyslexia and teacher PD to accurately address student learning needs.

Cognitive reading disorders and dyslexia can be complex because dyslexia often presents with comorbidities. Reading difficulties are not in isolation. There are additional areas of concern such as decoding, word-recognition, spelling, and writing with unconventional orthography. Phonological awareness and separation of words is a process that is more difficult for people with cognitive reading disorders. Students who have dyslexia are not easily transitioned into reading because phonetic information is not readily comprehensive to them without intensive intervention (Galuschka et al., 2020).

Dyslexic characteristics may be associated with interventions defined as Meares-Irlen (MIS), also referred to as scotopic sensitivity syndrome (Suttle et al., 2018). Meares-Irlen and scotopic sensitivity syndrome are synonymous (Denton & Meindl, 2016). These perceptions contribute to discrepancies and best practices for those who have dyslexia (Almahrag, 2022; Erbeli et al., 2022). According to Zirkel (2020), there is disparity between the courts and parents because the judicial body focuses on SLD and 504 for individuals with special learning needs. However, this does not reconcile the need for specific interventions targeted for students who struggle with dyslexia.

Early Identification of Dyslexia

Early identification of dyslexia is crucial for success in school. Early detection of dyslexia must be assessed by further means of assessment. Children should be assessed with validity as to not be misdiagnosed with a mild, cognitive reading disorder. Students with mild reading difficulties may receive extra help in reading and progress to meet their reading standards. According to Peries et al. (2020), teachers with limited understanding of dyslexia generate confusion for students and parents. Many countries around the world have limited knowledge of the characteristics of dyslexia. A large-scale study in the United Kingdom found that participants lacked the knowledge of the neurological and cognitive implications of dyslexia. These participants had a superficial understanding of dyslexia, making it difficult to detect individuals struggling with dyslexia (Knight, 2017). Clarification of dyslexia and appropriate instruction should be aimed at students who are properly identified. Screening for early detection should begin in kindergarten to determine students who are at-risk. Teachers can mitigate detection by conducting short assessments on all their students. If dyslexia is suspected, further screening should be done with RTI (Colenbrander et al., 2018; Fletcher et al., 2021).

Late Identification of Dyslexia

Late identification of dyslexia contributes to difficulties in diagnosis. It is problematic to determine whether word difficulties were present during kindergarten or emerged later in school. The importance of an accurate diagnosis should not be based on the sole difficulty of reading. An important distinction is the student's comprehension. Identification is a mixed assessment of both literacy and cognitive skills that contribute to the deficit. A formal diagnosis of dyslexia is important. A late diagnosis may be due to the initial signs that may have been overlooked by the teacher or the impairment developing over time. According to Wagner & Torgesen (1987), the most common characteristic in dyslexia is a weakness in phonological processing, although frequent research on dyslexia focuses on the phonological deficit and does not emphasize the difficulties with comprehension (Andresen & Monsrud, 2021; de Bree et al., 2022).

Intervention and Implementation

Intensive teacher training should be a prerequisite for implementation of a reading program. It is not enough to rely solely on the reading program itself. Empirically validated methods along with substantial PD provides broader support for teacher effectiveness. The International Multisensory Structured Language Education Council (IMSLEC) supports training for teachers beyond the reading curriculum (Cuturi et al., 2021; McMahan, 2019). According to Frith's (1999) model, dyslexia may be explained on three levels: biological, cognitive, and behavioral; however, teacher knowledge of dyslexia is generally described as behavioral. According to Knight (2017), 71.8 percent of teachers felt they were not adequately educated about dyslexia (Boardman, 2020; Gabriel, 2018). Biological and cognitive factors are less likely to be discussed by teachers because they are only familiar with the behavioral aspects of deficiencies in reading, writing, and spelling.

Targeted reading instruction (TRI) has a positive effect on decoding, spelling, and comprehension, although TRI did not have a significant effect on vocabulary and phonological awareness. Integrating teacher education and PD can help teachers to implement differentiated instruction to influence at-risk students. Teachers should encourage student experience with oral language to enhance phonological awareness. This strategy mediates learning reading skills in isolation. The Orton Gillingham program is multisensory and uses sight, hearing, touch, and connects kinesthetic movement for differentiated learning experience (Bratch-Hines et al., 2020; Stevens et al., 2021).

Dr. Samuel T. Orton (1897-1948) was a neuropsychiatrist and worked closely with Anna Gillingham who was an educator and psychologist. In the 1930s, Gillingham published instructional materials for reading (Gillingham & Stillman, 1936). Orton and Gillingham shared an interest in reducing the mechanics of language into small parts that were manageable for decoding. Their combined expertise developed the Orton Gillingham (OG) approach. The method is multisensory (Sayeski et al., 2018; Uhry & Clark, 2005). The OG approach is not readily available in most schools, and most teachers have not been trained in OG methodology (Sayeski et al., 2018; Youman & Mather, 2013).

There are pedagogical implications for failing to educate teachers. Societal pressures to excel in reading are a daily obstacle for students with cognitive reading disorders. Academic success is fractured if reading and comprehension are at-risk. Students who receive interventions early can learn to use strategies to navigate the cognitive issues and optimize outcomes (Andresen & Monsrud, 2021; Colenbrander et al., 2018). According to Silver et al. (2019), intervention and implementation are not complete without teacher collaboration. Teachers who

are part of a school culture of learners create an environment of innovative pedagogy. These cultural shifts bring policy and teacher perceptions closer in aligning curriculum to new research.

Valiandes and Neophytou (2018) found that teacher attitudes and perceptions have an influence on student achievement. Teachers noted that the quality of instruction and theory into practice helped them to improve their practice. Study results supporting PD help modify the instruction and differentiate for student needs. According to Hauge (2019), teachers who reflect on their practice are more effective because of quality PD; however, an action plan for reflection was not clear in the study. Hauge's findings did support that teacher influence on PD has a significant influence on teacher attitudes and learning toward effective change. Kramarski and Heaysman (2021) suggested PD should support teachers' self-regulated learning (SRL) to enhance the PD process by supporting teachers' self-regulated teaching (SRT) as well (Kramarski & Heaysman, 2021; Kramarski & Kohen, 2017).

Lindvail and Ryve (2019) suggested that alignment with PD and policy may be superficial. The broader issue regarding dimensions of teaching to provide more effective interventions for cognitive disorders is not clearly addressed. According to Bendtsen et al. (2021), sustainable, continuing PD is supported by collaboration with teachers and school leadership. Their study highlights the positive affirmation teachers experience when the principal is genuinely interested in the quality of PD. Conversely, not all school leadership is as actively involved or supportive. Teacher PD, driven by research-based education along with teacher experience, is an important factor in educational change. Bergmark (2020) examined the influence on teachers' collaboration and the quality of PD but did not shed equal attention on how to transfer this to student achievement.

Silver et al. (2019) compared PD and new instructional strategies with teacher understanding and concern. The researchers found that initial teacher challenges were connected to student cultural differences but also noted that those concerns were resolved. This concept should have been further explained to highlight the diversity of the class and community. These findings could have been developed into instructional strategies for differentiation to support cultural and cognitive abilities to illuminate the need for quality PD.

Policy and Influence on Change

Professional development is under scrutiny as there is a push to shift policy. Teachers need more freedom to design and create PD to fit the needs of the students they educate. To develop effective PD, teachers need to be able to input their needs and have a voice in what PD they would like to be a part of. If teacher needs are not considered in the PD model, then teachers are less likely to be enthusiastic about the success of the PD and are less invested in the PD. Teachers felt needs are an important component of effective PD (Sogunro, 2022). A study sponsored by Bill and Melinda Gates determined that teachers' needs are imperative to effective instruction. This assertion shifts from a prescribed PD to transition to the perceived needs of the teachers. A common ground design was developed from the research. This design supports teacher autonomy and transitions to a more personalized, need-based approach to PD (Gates & Gates, 2014, p. 10; Sogunro, 2022). This assertion is further supported by the National Education Association (NEA, 2014) the NEA believes that teachers should continue PD throughout their entire career, be prepared before they step into a classroom by learning in residency, but it should be relevant to their professional needs according to the needs of the teacher.

The International Dyslexia Association (IDA) asserts 15% to 20% of the population have some form of cognitive reading disorder. The National Center for Education Statistics (NCES)

determined that many students in the United States are not reading proficiently (Cheney-Collante et al., 2021; Shaywitz & Shaywitz, 2020). Subsequently, according to Mullikin et al. (2021), policy and curriculum changes should be made to dispel the myths teachers have about dyslexia. The misconceptions become perpetuated, so professional development should be designed to include teacher preparation course work for learning about dyslexia, observations, and simulation activities. However, Mullikin et al.'s study found that teachers with 14 years of experience and more had a better understanding of how to provide effective instruction for cognitive reading disorders. Regardless of specific dyslexia diagnosis, teachers can detect student learning disorders. Literacy difficulties can be determined early. Interventions can be put into place to alleviate some of the teachers' misunderstandings about dyslexia. Mullikin et al. found that teachers are under the impression that boys have a higher propensity of dyslexia. It is suggested that comorbidities may accompany and be associated with dyslexia. Attention Deficit Hyperactivity Disorder (ADHD) may shadow a diagnosis of dyslexia. There is only a slight increase in dyslexia diagnosis for boys, which would dispel the myth that boys are more prone to dyslexia (Jimenez et al., 2011; Mullikin, 2021; Wadlington & Wadlington, 2005). The prevalence of dyslexia is confounding because of the complexity. When more common reading difficulties are assessed, there is less demand for evidence. However, dyslexia presents with a rare phonological condition, but it is common for dyslexia and requires more evidence to justify the disorder (Wagner et al., 2020; Wagner & Torgesen, 1987). Compensation in resolving dyslexia was found in older students in grades seven and eight, which may have developed with age and motivated by the need to compensate. Educational exposure may induce the self-need to develop a strategy to navigate the school experience (van Viersen et al., 2019; van Viersen et al., 2016).

A self-directed, grassroots PD is a concept that is born out of what makes PD highly effective. Teacher-to-teacher collaboration for PD is motivational because of the authenticity of teacher experience and ownership of the learning environment. However, this does not come without criticism. Some rejection is centered around the lack of research studies validating that grassroots PD is as effective as traditional learning experiences (Holme et al., 2020; Sogunro, 2022). Teachers who appreciate PD understand the need for lifelong learning and want to be prepared to meet future challenges in educating students.

Policy and practice are sometimes at odds. According to Sims and Fletcher-Wood (2021) Federal funding requires PD to be sustained over time and collaborative in practice. This design does not always yield effective PD. Complication arises when there is too much attention on satisfying policymakers. PD should be designed based on research that identifies characteristics of strong evidence. However, there are limited empirical studies based on reading and writing interventions for cognitive reading and writing disorders. Research that is limited to less participants is generally not a reliable prediction of what constitutes highly effective PD. More research-based design is reflective of characteristics of effective strategies for best practice (Babakr et al., 2019; Sims & Fletcher-Wood, 2021)

Dewey (1933) proposed the concept of reflection by defining the difference between thinking and the importance of reflecting. Self-awareness is key to understanding and reflecting on the practice of education (Dewey, 1933; Rodgers, 2002). Reflective practice can be done informally. Assessing how a teacher views her own performance is an effective way of evaluating the effectiveness of his or her own skill set (Diasti & Kuswandono, 2020). Bozkus & Bayrak (2019), assert that PD must change as the world around us has also changed.

Teachers can improve their performance by incorporating a dynamic approach. The approach is a more formal process of including administrator input as to teacher performance. However, there is a limit to their influence. The intention is to allow the teacher to see the problem and for the teacher to solve the problem by guiding PD collaboratively (Bozkus & Bayrak, 2019; Diasti & Kuswandono, 2020).

Curriculum implementation is closely related to PD. According to Nawaz and Akbar (2019) curriculum is driven by intended curriculum, standards, aims, and benchmarks. Enacted curriculum is how the intended elements are implemented into the curriculum. Policy makers have concerns about the quality of PD to enhance content knowledge and teacher practice. Ongoing PD is supported by pre- and post- teacher education programs because educational reform is an interconnected process of effective teaching and sustained PD (Mukan et al., 2019).

There is criticism surrounding traditional teacher PD. Teachers should not be passive participants in their own learning. Large scale PD generalization does not meet the needs of teachers in their practice. There is a distinction between management compliance needs and that of teachers who implement curriculum (Reed & Chappell, n.d.). Martin et al.'s (2019) study found that teachers' experiences with traditional PD had a lower satisfaction rate than participants who had autonomy by setting their own goals. Further, long-term PD participants integrated their knowledge into daily instruction versus more generalized sporadic PD experiences. According to Martin et al. (2019), teachers need more planning time to implement new knowledge learned from PD. Teachers are concerned with literacy PD that teaches them effective strategies for use in the classroom. These are experiences that culminate into effective teaching and relevant PD.

An interesting plan is the concept of an Individual Professional Development Plan for teachers based on the continuation of PD needs of the teacher. This approach is a reflective one that develops teachers career needs while identifying needs and supporting PD opportunities to meet those goals (Ozer et al., 2020) The objective is for teachers to voluntarily participate and develop simultaneously with reflection and experience that transfers into authentic PD. The quality of the educational system depends largely on the quality of the teachers. Teachers who continue to grow with PD are more likely to encourage and assist new teachers in the field. Teachers learning from teachers is a byproduct of effective educational experiences with PD that transfers relevant knowledge and builds upon a teacher's skill set (Tyagi & Misra, 2021; Zhilgildinova et al., 2022).

The professional development of teachers is interconnected with self-development. Personal and professional development is an expression of personal growth. The aim of PD is to prepare new teachers and seasoned professionals for changes in practice. Teachers can acquire content knowledge by experience with sustained PD opportunities. Educators are models for lifelong learning. Teacher competencies have evolved based on globalization, and new skills are required to meet the demands of educating diverse populations. Teacher opinions point to the need for PD as an active learning process that utilizes hands-on training, collaboration, and content selection based on their area of curriculum implementation (Ekinici & Acar, 2019; Padillo et al., 2021).

Teachers who are engaged in continuous communication with other teachers share knowledge and experiences. Teacher who are isolated do not collaborate with other people in the academic field. Professional development is an opportunity to learn from one another. Occupational collaboration supports growth moving forward. Teachers are motivated by being

part of the PD culture of the school. The collaboration within the school brings about a sense of social capital. It is valuable to the school culture and to the individual teacher (Ozbilen & Cekic, 2022; Turk et al., 2022).

After examining the relationship between dyslexia, teacher training, and continued sustainable PD, it is evident that the research is supporting changes in the content and duration of teacher education programs. Policy has been instituted to reflect science and influence practice (Bendtsen et al., 2021; Knight, 2017). Research is evolving, and early identification of dyslexia is on the rise. Policy is driving programs to meet the demands of an instructional response to dyslexia and other learning and cognitive disabilities. Specifically, dyslexia advocacy groups have lobbied detection, identification, and appropriate remedial programs to be in effect in response to policy and science inspired research (Miciak & Fletcher, 2020; Protopapas, 2019).

For decades, researchers and educators have focused on phonics interventions for dyslexia; however, this is a narrow view of the deeper comprehension and learning skills associated with reading and writing. Reading and spelling influence an individual throughout a lifetime. People who struggle with dyslexia are subject to challenges with phonetics, orthography, and struggle with morphological knowledge (Galuschka et al., 2020; McMaster et al., 2021). Both Galuschka et al. (2020) and McMaster et al. (2021) suggested intensive intervention for navigating linguistics and decoding.

According to Witton et al. (2019), a typical auditory processing is, theoretically, a prerequisite to phonological skills. Presumably, auditory processing merits further analysis through research and should be intertwined for effective intervention. According to McMahan (2019), dyslexia requires a multi-dimensional approach. Instruction for dyslexia should be multimodal (Hall et al., 2021; Stevens et al., 2021). McMahan determined that teachers who

received additional training in reading for two years and were certified had significantly more knowledge than those who did not receive a certification level. This highlights the benefit of targeted PD over a duration of time.

With sustained education for teachers, it is likely that additional connections between training and practice are implemented in instructional lessons. School culture has a positive influence for teachers, education, and learning. Schraeder et al. (2020) asserted that when principals have knowledge of dyslexia and intervention, the leadership style changes to support dyslexia interventions. The difference is educational leadership; the other leadership style is transformational leadership that serves to develop a working partnership with the staff, leading to increased staff motivation. Both styles are valuable in contributing to a school culture and increasing the influence of quality PD.

Cognitive reading disorders and dyslexia continues to confound the public because it can appear in conjunction with comorbidities. According to Brimo et al. (2021), other neurodevelopment can occur with dyslexia. Autism spectrum disorder (ASD), attention-deficit disorder (ADD), attention-deficit/hyperactivity disorder (ADHD), or sensory processing disorder (SPD) may accompany dyslexia (Kuhl et al., 2020). Comorbidities continue to add to the confusion of diagnosis and to the argument of dyslexia as a label instead of a learning disability.

As more research is done, findings may determine the specificity of cognitive reading disorders on brain imaging. Technological advances have further driven evidence of neurobiological information. Brain imaging has provided evidence for differences in how a brain connects information. Advanced studies will add to the literature supporting these new developments. Science, technology, and research have brought a more accurate definition of what dyslexia is. This information can then be illustrated in new intervention strategies,

specifically for those differences in brain imaging. According to Dodur and Kumas (2021), classroom teachers in their study did not have sufficient background knowledge of dyslexia and were insecure about how to effectively teach students with dyslexia. Teacher training and PD must be incorporated to reflect innovations in new knowledge.

Novice teachers and early childhood teachers need the guidance of quality PD to drive their instructional practice. The education that new teachers experience is generally not aligned to what they face in their professional life. Early childhood development practice is a specialized area that may require more hands-on learning, assessment, and student choice. This is aligned with the students' developmental stages. New teachers may not have the exposure to evidence-based practice, and ultimately, this challenge leads to attrition at higher rates for early childhood teachers (Hooper et al., 2022; Totenhagen et al., 2016). Approximately 30% of early childhood teachers in the United States leave the profession annually. The problem becomes a challenge for the educational system to handle. The deficit results in teacher shortages (Bassok et al., 2021; Hooper et al., 2022).

Pre-service teachers struggle with the task of validating their own theories about education. The expectation is that they should be able to defend their teaching methods based on evidence-based practice. Teacher educators and PD can use research-based practice and theory to educate teachers on how to use reflective practice to hone their skills. This kind of variation theory is a learning study that integrates research, theory, and practice. PD and learning theory promote reconstructing knowledge and making sense by teacher collaboration. Variation theory uses research, learning theory, and awareness (Lo & Marton, 2012; Pang & Ling, 2012; Royea & Nicol, 2019; Thorston, 2015).

According to Eroglu and Kaya (2021), teachers face many challenges and barriers to PD. The trends that arose in the study are ineffective training, lack of appropriate content-based PD, unmotivating materials, negative teacher attitudes, an already heavy workload, and a lack of support from stakeholders. Effective teaching should be a combined effort of PD for pre-teachers and in-service teachers (Gonzalez, 2021; Guven, 2005; Sahin, 2008). Teachers expressed that school functioning may also present as a barrier when allocated time and space limits hinder the process. Funding can impose challenges because stakeholders and budgets may not support sustained PD programs. Effective PD programs should focus on content knowledge, teacher collaboration, learning, and the duration of PD (Eroglu & Kaya, 2021; Garet et al., 2001).

There is significant evidence that supports PD for novice teachers' success in the classroom (Sasson et al., 2020; Zhukova, 2018). It is important that teachers receive effective PD to meet the challenges of high standards. Novice teachers are especially susceptible to stress due to not having adequate preparation for all the challenges that a class, school, administrators, and stakeholders can produce. If novice teachers do not have the support of colleagues and PD, their attitudes toward the school environment and motivation may erode (Sasson et al., 2020; Sutchter et al., 2019). According to Garcia and Weiss (2019) teacher shortage is high among novice teachers. The attrition rate is 64,000 in 2015-2016 and grew sharply between 2017-2018 to over 100,000.

Rapid changes in society and technology are also responsible for teachers' stress and negative attitudes toward the educational system. Teachers must acquire the necessary technological skills for the classroom. From the beginning of their careers, it is expected that teachers be computer knowledgeable. According to Kilic & Kilic (2022), lifelong learning is essential to support teachers' continuous self-assessment of required teaching and technological

skill sets. However, Kilic and Kilic's study results concluded that teacher attitudes are positive about the integration of technology in the classroom.

Professional development is an integral component of a healthy working environment. Teachers need new and evolving skills to stay engaged in teaching. According to Cacciamani et al. (2022), work engagement and burnout are interconnected with technology use. Professional development that involves the use of information and communication technology (ICT) can influence teachers in different ways. Teachers who are trained in using technology experience less stress than those who are not familiar with ICT. Teacher experience can be positive when they are engaged because they feel inspired by PD and ICT. However, teachers who feel uncomfortable working with technology may have increased stress, resulting in teacher burnout. Cacciamani et al.'s study did not find a significant difference in burnout for teachers across multiple school levels. The study determined that teachers who are more interested in PD, that includes ICT, are inclined to have a constructivist approach to teaching (Cacciamani et al., 2022; Mattar, 2018).

Massive open online courses for educators (MOOC-Eds) creates an opportunity for teachers to experience online PD that is research-based. MOOCs are popular because they can be viewed with flexibility. This contrasts with traditional PD, which is in-person and tends to be lecture based. According to Delaco et al. (2022), teacher input is an important component to the development of effective PD. According to Scarparolo and Hammond (2017) and Peltier et al. (2020), teachers who have a deeper knowledge of scientific aspects of reading and research have greater understanding of phonics, phonemic awareness, and decoding methods. Darling-Hammond, et al., (2022), asserted that teachers who have advanced knowledge in reading instruction provide more comprehensive instruction. This, in turn, avails them to providing

instruction across multiple domains of literacy. The study revealed that many teachers had questions about reading instruction. MOOC-Eds are valuable and enable teachers to connect, learn, and share relevant literacy skills with other educators.

According to a study by Cakiroglu and Atabay (2022), attitudes about online PD can vary depending on study behaviors and technology skills. These variables were reported by the teachers in the study. There were difficulties that arose when studying online with PD such as computer applications may cause problems in viewing the material and some teachers needed to look for other applications to install so that they could participate. However, these experiences helped the teachers in multiple ways. They became more resourceful, computer literate, and cooperated in groups to develop these problem-solving skills. Teachers moved away from traditional PD and became critical thinkers. Some teachers were inspired to delve deeper into content materials. Others searched for other sources to add to the knowledge they were learning in online PD. These actions changed the experience of teachers as passive learners to become more engaged learners. Augmented reality (AR) is now enhanced by artificial intelligence (AI). The results suggested that teachers' online PD should be structured to include problem-solving (Lambirth et al., 2019; Lorusso et al., 2021).

According to Altun et al. (2021), when designing PD, it is important to empower teachers by using the understanding by design model (UBD). Relevant literature discusses UBD but does not determine teacher confidence in designing the UBD for PD. Darling-Hammond (2017) asserted the five areas of effective PD as sustainable, content-based, learning communities, teaching the lessons, assessing, and reflecting on best practices. In Darling-Hammond's study, the process was rolled out over a period of four cycles. Weekly meetings were held to discuss feedback and implementation. The first cycle consisted of teachers' UBD designs followed by

researcher feedback. Then the teachers could go back and integrate that knowledge through those revisions. After the second cycle, teachers began to see more progress. In the third cycle, teachers' UBD was integrated with technology and researcher feedback. On the fourth cycle, teachers' UBD was observed by the researcher and implemented by the teacher. Teachers expressed previous negative feelings and limited familiarity; however, by the end of the UBD PD process, the teachers shared their gratitude for being participants. Teachers admitted to receiving constructive criticism and felt respected. By teachers sharing their feelings, the study determined it to be an important factor in the ability for teacher attitudes to change from negative to positive with effective PD (Altun et al., 2021; Guskey, 2002, Wayne et al., 2008).

Hursen (2016) conducted a study that was geared to understanding the attitudes of teachers and the concept of lifelong learning. Teachers are key to internalize the characteristics of lifelong learners by developing their own plans to stay informed of new knowledge, self-assessment of the skills they require, participating in the process of learning, and applying multiple strategies to meet those goals (Hursen, 2016). However, motivation is key to lifelong learning, while attitude is a component of opinion and feelings. Hursen's (2016) study sought to develop a scale to analyze teacher attitudes toward learning and PD. It is critical teachers remain competitive in the field with training that seeks to evolve with the demands of the changing world. The study found that the results were reliable and consistent. It is important to note that regardless of length of teaching experience, the teachers had a desire to learn. However, teachers with more experience had a greater awareness of learning skills.

Teachers become inspired to learn based on autonomous motivation. There is an engagement between the perception they have for their working environment and PD learning. If certain psychological needs are not met, they feel less motivated. Social support among teachers

is a critical component when designing PD. Intrinsic motivation allows teachers to derive the best out of PD because their psychological needs are adequately met. If not, teacher attitudes can negatively influence learning (In de Wal et al., 2020; Kyndt et al., 2016).

Summary

Past and present literature findings indicate that there is a disparity between professional development and the needs of teachers to implement research-based multisensory interventions for cognitive reading disorders and dyslexia. Teachers have not been trained to implement interventions specifically targeting dyslexia. Often, PD is delivered in brief intervals. This does not allow teachers time to understand, practice, and implement new knowledge instruction. Defining and understanding dyslexia is a complex undertaking exacerbated by the evolving concepts and characteristics of dyslexia. Confusion stems from the peculiarity of the disorder. Individuals can be subject to dyslexic characteristics regardless of IQ level. Dyslexia can occur with comorbidities that further complicate an understanding of the condition. The Rose Review (2006) asserted that dyslexia is a learning disorder that interferes with decoding and spelling. In recent years, science has informed policy by establishing evidence-based interventions.

Stakeholders, principals, teachers, parents, and communities are better served when PD is conducted with continuity and an understanding of the in-depth multisensory research-based interventions. As technology advances, so does validation for effects of dyslexia on the brain. There is now a neural signature for dyslexia. Brain imaging provides evidence there are interruptions in connectivity of the posterior reading system. In the normal brain, these connections extend further. In individuals with dyslexia, those connections are limited to adjacent neuro connections. The research is groundbreaking for critics of the dyslexic label.

Early intervention and intensive systematic instruction alleviate failure (Johnston, 2019; Lithari, 2019). Research-based multisensory education is crucial to implementing change. There is research on 21st-Century skills, but little research exists to include those skills not in isolation, but as research-based multisensory PD for K-12 teachers (Urbani et al., 2017).

CHAPTER THREE: METHODS

Overview

The purpose of this phenomenological study is to understand the experiences of the 10 K-12 teacher participants who may implement instruction and interventions for students who struggle with cognitive reading disorders and dyslexia. Dyslexic characteristics may be associated with interventions defined as Meares-Irlen or scotopic sensitivity syndrome (Suttle et al., 2018). Meares-Irlen and scotopic sensitivity syndrome are synonymous (Denton & Meindl, 2016). Contemporary research disputes scotopic sensitivity. However, evidence-based research supports the assertion of phonological deficit. The framework for this phenomenological study is social constructivism. Research questions are included within this study to provide readers with an understanding of cognitive reading disorders and dyslexia. Philosophical assumptions and the researcher's role are also thoroughly defined throughout. The procedure, which includes the permissions and recruitment protocol, are addressed towards the end of Chapter Three. Similarly, data collection was acquired by individual interviews, journal responses, and focus groups. Trustworthiness and credibility were incorporated, culminating with the chapter's summary.

Research Design

The hermeneutical phenomenological design is appropriate for the proposed study because this method allows for both the individual and common experiences shared by the participants. A qualitative study is most appropriate because the participants' experiences are analyzed holistically and mesh with evidence by data collection to create meaning. Research was organized, data was analyzed, and notes were taken to form initial codes. Descriptions of personal experiences describe the essence of the phenomenon, significance, and frequency of

statements create meaning. The design culminates into what happened, the development of how the phenomenon was experienced, and the essence of the study.

Additionally, a hermeneutic approach allowed the trends, themes, and stories to emerge naturally through data collection such as interviews, journaling, letter writing, focus groups, recordings, transcriptions, and artifacts (Creswell & Poth, 2018). The researcher remained bracketed to allow for authenticity in the results. According to Guillen (2019), this method is rigorous, ethical, and describes a lived experience. Conducting this phenomenological study contributes to a heightened awareness of experience (van Manen & van Manen, 2021). The approach is conducive to teacher experience as it relates to this research because they live the phenomena. The key contributors to the development of the phenomenological research design include Husserl, Heidegger, Sartre, and Merleau-Ponty. Husserl's (1954) works provided the mode of intentionality, meaning the things of the world avail themselves to phenomena. Heidegger (1927), a German philosopher, contributed to the characterization of phenomenological method whereas Sartre (1956) and Merleau-Ponty (1962) described foundational phenomenological ideas in their writings. The more contemporary writings of van Manen (2014) are considered groundbreaking because he asserted that leadership is not acquired by third person knowledge. First person experience and phenomenological methodology is what develops the being into an effective leader.

This qualitative research study utilized appropriate methods to collect data through individual interviews, journal responses, and focus groups. Interviews were conducted and transcribed for an accurate interpretation. Teacher participants were assigned by criterion sampling, and pseudonyms were created to include the first letter of each participant's given name, which alleviated confusion when referring to one another and retain participant

confidentiality. This research study was conducted with ethical integrity, and at any point during the study, a teacher participant may withdraw. Data was saved on a password-protected laptop and stored in files, folders, and locked in a file cabinet in a secure building to ensure privacy. Once the data were collected and analyzed, hand coding was incorporated to categorize the trends and themes that emerge (Creswell & Creswell, 2018). As the researcher, I do not have any authority over the participants in this study. As an experienced teacher, reading specialist, and researcher, I am interested in understanding and describing teacher experiences about PD and uncovering best practices for the instructional needs of students with cognitive reading disorders.

Research Questions

The following research questions are formulated to address the concerns of the proposed study. These questions relate to the problem, purpose, and the focus of this phenomenological research. Teacher experiences with professional development through a school-based setting was explored. Teacher preparedness to implement the most effective interventions for students who struggle with cognitive reading disorders characteristic of dyslexia have been examined. The following questions are as stated, Central Research Question, Sub-Question One, Sub-Question Two, and Sub-Question Three.

Central Research Question

What are the experiences of K-12 teachers who receive professional development to provide cognitive reading instruction with interventions specific to dyslexia?

Sub-Question One

How has the school's professional development informed teachers about the complexity of cognitive reading disorders and dyslexia?

Sub-Question Two

What interventions or strategies have teachers learned about through professional development for students with cognitive reading disorders and dyslexia based on what teachers have learned from professional development?

Sub-Question Three

How confident are teachers in using the interventions learned from professional development to meet the diverse needs of students with cognitive reading disorders and dyslexia?

Setting and Participants

In the following paragraphs I have discussed the prospective site and participants. This study's participants were selected from Lakeview Christian Academy, a school setting at the K-12 level identified by a pseudonym. The participants were generated from the staff and consisted of 10 K-12 teachers using criterion sampling. Participants were selected based upon the commonality of experience with professional development. However, teachers with varying grade levels and subject areas were of particular interest because this shed light on the common need for professional development across the K-12 grade levels and content areas.

Site

The leadership structure of Lakeview Christian Academy consisted of a principal and assistant principal(s). This setting was chosen because of its K-12 student population and Christian mission. The teachers in this study were chosen because they teach a variety of content areas but share a common goal of educating all their students to the best of their ability. The participants are diverse in their subject areas. Teachers are responsible for implementing quality

education to students regardless of special needs, language differences, or cognitive reading disorders and dyslexia.

Participants

The participants in this study consisted of 10 K-12 teachers. The gender distribution consisted of all females because more women than men generally enter the profession on the elementary school level and K-12 distribution. The participants were representative of general education teachers and special education teachers who committed to participate in the study. These participants have diverse teaching experience, grade levels, and content area knowledge. The selected participants have common experiences with professional development at their school and some brought experiences and knowledge from prior schools and outside sources of professional development opportunities. Criterion sampling was used (Creswell & Poth, 2018). The demographics of the teacher participants in the K-12 setting are representative of the school-based population at the site and were selected by criterion sampling. As a result, the participant population for this study consisted of all females based on those who committed to participate.

Recruitment Plan

After IRB approval was granted, teacher email addresses were obtained with permission from the school's administration. The researcher then contacted the prospective teachers with a request letter and informed consent provided by the IRB. A request letter was sent out to the administration via email. The sample size consisted of 10 participants. Participant inclusion criteria were teachers at the K-12 level from Lakeview Christian Academy. The participants were of particular interest because of their shared mission as qualified teachers and Champions for Christ.

Researcher Positionality

The motivation for conducting the proposed study is aligned with a social constructivism approach adapted to this hermeneutical phenomenological research study. The three philosophical assumptions are: (a) ontological, which is a process of collecting accounts that assist in providing an interpretation of the phenomenon; (b) epistemological which is a process of differentiating a belief from an opinion; and (c) the axiological assumption, which culminated from the theoretical value of the study. As the researcher, I am familiar with school settings. The findings culminated in a documented story with transcriptions to provide qualitative evidence. Researcher positionality has commonality because the researcher and stakeholders have a legitimate desire to address the research questions (Holmes, 2020). Researcher positionality remained bracketed, and the researcher's role of reflexivity was established.

Interpretive Framework

Social constructivism is the preferred interpretive framework because by its very definition, it is central to this qualitative study. This research study brings people together to construct meaning based on individual and common experiences. Hermeneutical phenomenology is designed to interpret the stories of others and find common trends and themes among the participants. Interpretive framework translates the interactions of the human participants, the guiding philosophical, social constructivism approach. Piaget (1952) believed that stages in life determined how children responded to learning. According to Vygotsky (1978), instruction influenced the concept of development.

Philosophical Assumptions

In addition, the philosophical assumptions are based on social constructivism theory (Piaget, 1952) and are intertwined in the research design. The human instrument must take care

to consider the implications into the research design. Bracketing allows the human instrument to curtail personal influence that could detract from the truth of the data (Creswell & Creswell, 2018).

Ontological Assumption

Jacob Lorhard (1561-1609) is the creator of the term *ontologia*. Moreover, from a constructivist and interpretive perspective there is no single truth in this collective research study. The experiences of participants were observed and interpreted to uncover the deeper meaning exposed by a hermeneutic phenomenology (van Manen & van Manen, 2021). Interviews, observations, journal responses, and focus groups work best with this qualitative approach. Working with participants' commonalities connected the individual's stories and experiences and trends and themes emerged naturally. Assumptions were bracketed to include the data in this collection.

Epistemological Assumption

Likewise, epistemology is the concept of reality, which needs to be interpreted to uncover the true meaning of events. Rene Descartes (1596-1650) is regarded as the father of epistemology. A constructivist, interpretive approach fits well in this qualitative study because it allows for analysis of the shared experiences to uncover the deeper meaning in this study. Hermeneutics is the process of interpreting meaning from the participant experiences, interviews, and observations of individual and group dynamics. Epistemology, also known as the theory of knowledge, is concerned with justifiable truths, rather than personal biases. The epistemological assumption is an important aspect of the research because knowledge and how it is acquired is central to education. As a researcher, teacher, and reading specialist, this was embedded in the research. The professional development that the teacher participants have experienced added to

their knowledge and preparedness and is a key source for the foundation of the epistemology of this study.

Axiological Assumption

Axiological assumptions reflect the value placed on philosophical, ethical, political, and cultural perspectives. Axiology encompasses the principles and values pertinent to this study. In this research study, the researcher bracketed her personal axiological assumptions to provide authenticity to the findings. The focus was on the data collected from the teacher participants, which in turn allowed the researcher to interpret meaning and draw conclusions. Researcher values and intuition form the axiological assumptions embedded in research (Creswell & Poth, 2018).

Researcher's Role

The researcher's role of reflexivity involves the researcher sustaining the experiences with participants and divulging any bias held that may shape interpretations of data (Locke et al., 2013). Creswell and Creswell (2018) suggested writing notes about personal experiences in the study. The researcher, as the human instrument in the study, is responsible for collecting data and designing methodology such as interviews, surveys, focus groups, and questionnaires to retrieve the most authentic and non-biased results in a qualitative research study. As a researcher, teacher, and reading specialist, I am interested in analyzing the experiences of other teachers and professionals in the field. The integrity of this study was not affected by personal bias. The questions for participants were designed from an academic and research-based perspective. The design of the questions are aligned with the research study questions, and as a human instrument, were from a bracketed perspective. The teacher participants in this study were selected based on teaching experience, professional development, and content area. I did not know the teacher

participants personally prior to this study, and I have no authority over them. Teacher participation is voluntary, and they may withdraw from the study at any time. The intention of this study is to explore the truth as deeper meaning extracted from teacher experiences. I collected data from individual interviews, journal responses, and focus groups. A qualitative, hermeneutic phenomenological approach was chosen to specifically address the teacher participant experiences as they are personally affected in real-life circumstances. As researcher, I analyzed the data by coding and utilized Qualtrics® analysis software to further delineate and develop evidence from participant data observation and submissions. As the human instrument, the researcher remained cognizant of the role as researcher, and maintained a non-bias position by calibrating any personal assumptions.

Procedures

Data Collection Plan

In the following section, I introduced triangulation and the associated data collection approaches. Data analysis and synthesis for each approach are explained in further detail. There were three methods of data collection for this study: individual interviews, journal responses, and focus groups were then be analyzed and synthesized by coding.

Triangulation is conducted to provide validity for the study by collecting data and consulting with stakeholders to provide information to all stakeholders who are affected by the study. This helps to establish credibility and confirmable findings for transferability and member checking is crucial to credibility (Lincoln & Guba, 1985). Triangulation emphasizes validity by converging multiple data and applying strategy to understand the phenomenon (Patton, 1999). When collecting data, the site and human subjects must always be respected by incorporating

researcher's self-awareness and reflexive notes (Check & Schutt, 2021; Korstjens & Moser, 2018).

Survey

Survey Questions

Name: _____

Email address: _____

1. How old are you? (Circle 1 Answer)

18-24

25-29

30-39

40-49

50-59

60+

2. What is the highest level of education you have completed (Circle 1 Answer)

Associate's Degree

Bachelor's Degree

Master's Degree

Ph.D.

Ed.D

3. How long have you been working as a teacher? (Circle 1 Answer)

This is my first year

1-2 years

3-5 years

6-10 years

11-15years

16+ years

4. Have you ever attended a professional development workshop on either cognitive reading disorders and/or dyslexia?

Yes

No

5. How many professional development sessions (dedicated to cognitive reading disorders and/or dyslexia) have you attended in the same school year? (Circle 1 Answer)

0 sessions

1-2 sessions

3-5 sessions

5+ sessions

6. In 3-5 sentences, explain how professional development training has affected your experience to teach students with cognitive reading disorders and dyslexia. (Write your answer in the box below)

7. Do you believe that your school has provided sufficient professional development training to teach students with cognitive reading disorders and dyslexia? Why or why not? (Write your answer in the box below)

8. Do you know of any current professional development interventions being used for students with cognitive reading disorders and dyslexia? Yes or no. If "Yes" please provide an explanation of the intervention(s) or strategies being used. If "No" please type no and move on to the next question. (Write your answer in the box below)

9. Thinking of your own professional development experiences about students with cognitive reading disorders and dyslexia, please indicate the impact of the following statements below. (Circle 1 Answer)

Professional Development on Cognitive Reading Disorders:

No impact
 Minimal impact
 Moderate impact
 Large impact

Professional Development on Dyslexia:

No impact
 Minimal impact
 Moderate impact
 Large impact

Professional Development on both Cognitive Reading Disorders and Dyslexia:

No impact
 Minimal impact
 Moderate impact
 Large impact

10. From a scale of 1 to 5 stars, how effective do you think professional development for cognitive reading disorders and dyslexia is at your school?

Effectiveness of Professional Development on Cognitive Reading Disorders and Dyslexia:



11. Below you can find statements about professional development for cognitive reading disorders and/or dyslexia at your school. (Circle 1 Answer)

In your school, the principal and teachers work on a professional development plan for students with a cognitive reading disorder and/or dyslexia...

- Never
- Seldom
- Often
- Always

Teacher input is used for the development of this plan...

- Never
- Seldom
- Often
- Always

Teachers collaborate with one another regarding this development plan...

- Never
- Seldom
- Often
- Always

12. Based on your experience with professional development on cognitive reading disorders and/or dyslexia, have you seen an improvement in your students' reading levels?

- Yes
- No
- No difference

13. How strongly do you agree or disagree with the following statements about the quality of professional development on cognitive reading disorders and/or Dyslexia? (Circle 1 Answer)

Should Professional Development be sustained over the school year?

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

Do you believe that teachers' professional needs are being met by the professional development that you have experienced?

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

Teachers often request for Professional Development on cognitive reading disorders and/or Dyslexia...

Strongly Disagree

Disagree

Agree

Strongly Agree

- 14. Were there any challenges when implementing cognitive reading disorders and/or Dyslexia interventions from Professional Development? Why or why not? (Write your answer in the box below)**

- 15. From a scale of 1 to 5 stars:**

Are teachers at your school enthusiastic about the professional development they receive?



How likely are teachers to implement the strategies learned from professional development?



Individual Interviews

Interview sub-question one may be answered during interview data collection; this question asked, “How has the school’s professional development informed teachers about the complexity of dyslexia?” Participants were contacted by email, and interviews were scheduled online. Individual, semi-structured interview questions were conducted by asking open-ended questions related to the central research question (CRQ) and sub-questions 1-3 (SQ1-SQ3). The open-ended, semi-structured questions were informal, and elaboration was encouraged. were designed by the researcher based on the problem and purpose of the research study. The interviews were conducted one-to-one for 30-45 minutes and virtually recorded on the Zoom teleconferencing app. Experts in the field, typically my chair and committee member, reviewed questions before the study began. The interviews were conducted during the school year on

Zoom with teachers of general education and special education. The interviews were recorded, transcribed, and kept in a locked file cabinet.

Individual Interview Questions

1. Please introduce yourself to me as if we just met one another. (Central Research Question) CRQ
2. Please explain to me your idea of professional development. CRQ
3. Why do you think it is important for teachers to be aware of cognitive reading disorders and dyslexia? (Sub-Question 1) SQ1
4. Describe your professional development preparation for educating students with cognitive reading disorders and dyslexia? CRQ
5. Describe your challenges when working with reading strategies for students struggling with cognitive reading disorders in your classes. SQ1
6. Describe your challenges when working with reading strategies for students presenting with characteristics of dyslexia? SQ1
7. What strategies work best for students who exhibit cognitive disorders that affect reading skills we haven't discussed? SQ2
8. What professional development experiences have you had that prepared you to implement strategies when working with students with cognitive readings disorders and dyslexia? SQ2
9. Are there any other strategies or interventions you have learned from professional development that were beneficial to students who struggle with reading? SQ2
10. How confident are the teachers at your school when implementing strategies or interventions for students with cognitive reading disorders or dyslexia? SQ3

11. Describe your personal confidence when implementing a reading strategy or intervention for students with cognitive reading disorders or dyslexia. SQ3
12. How should professional development be modified to support teacher confidence when implementing strategies for students with cognitive reading disorders or dyslexia. SQ3

Individual Interview Data Analysis Plan

Data analysis was done manually by the researcher and automatically using Qualtrics® qualitative data analysis software. Data was gathered and collected across multiple methods. Interviews were read, reread, and assigned codes to delve into interpretation of the meaning, phenomenon, and member checked. Color-coded data was arranged in a hierarchical pattern. Data was categorized and cross referenced and created themes as they developed. Organization assisted in making connections between raw data collected. Analysis identified trends and themes from the entire body of data to generate a single set of themes. Qualtrics® professional website analysis, data hand coding, and member checks all contributed to forming triangulation across multiple data sources when synthesized. After the individual teacher participant interviews were conducted, the researcher transcribed the audio-recorded responses. Agar (1980) suggested that the interview transcript be read several times for the researcher to be immersed in the details, then understand it before it is further segregated for coding, trends, and themes. Outlining the procedure for data analysis produces trustworthiness (Lincoln & Guba, 1985). Data analysis for individual interviews was well suited because the responses were audio-recorded and replayed to expose underlying nuance and meaning. The researcher began with an open mind and let the data develop the phenomenon, not relying on any preconceived notions. The data analysis uncovered themes across the interviews by coding and defining familiar phrases. Coding was combined to create new categories that emerge from interviewee input. Trends and themes

shifted and changed depending upon how much data was analyzed. This analysis developed understanding of concepts and intervening conditions. Data synthesis was a compilation of responses and an analysis of findings. The approach is usually constructivist and interpretive (Drisko, 2020).

Focus Groups

Focus Group Questions

Introductory Questions:

1. Please share with the group your name and how many years you have been teaching?

(Central Research Question) CRQ

2. What do you love most about your school? CRQ

Transition Questions:

3. What is the first thing that comes to mind when you hear the phrases professional development, cognitive reading disorders, and dyslexia? CRQ, (Sub-Question) SQ 1
4. How do you support students who seem to be struggling in your classroom? CRQ, SQ 1, 2, 3

Key Questions:

5. What information has your professional development provided you with regarding cognitive reading disorders or dyslexia? SQ 1,2
6. Do you think teacher collaboration in your school helped you to use a strategy or intervention for students who struggle with cognitive reading disorders or dyslexia? SQ 1, 2, 3
7. What strategies have you used for struggling readers? SQ 2

8. Have you seen students with cognitive reading disorders improve based on a strategy used at your school? CRQ, SQ 1,2
9. What kind of professional development has best supported you to provide instruction for struggling students? CRQ, SQ 1,2
10. Can you think of a professional development experience that has made an impression on you and impacts your teaching style in a positive way? CRQ, SQ 2,3
11. How confident do you feel when working with students who are struggling readers. SQ 3
12. Is there anything else that you would like to share about your experiences that we have not discussed? CRQ

Codes

Coding was established during data collection and redefined as a means of analyzing and streamlining information categorically. Multiple methods of data sourcing combine to form triangulation (Creswell & Creswell, 2018). Deductive coding and triangulation synthesize all the available data and help the researcher further interpret data based on the evidence established (Creswell & Poth, 2018). Qualitative data analysis software such as NVivo can synthesize multiple data collections to further develop themes and trends across the entire compilation of data sources. However, small qualitative studies do not require NVivo. After data collection, coding, and categorizing themes and trends, the researcher used Qualtrics® and synthesized data manually for this research study.

Trustworthiness

According to Guba and Lincoln (1985), credibility is determined when a researcher can recognize the experience within the study and can then see the fit between the researcher and the

views that represent them. Lincoln and Guba (1985) suggested that prolonged engagement, persistent observation, and data triangulation can assist in establishing credibility.

Triangulation is one of the appropriate methods for establishing trustworthiness in qualitative research (Huttunen & Kakkori, 2020). Trustworthiness must be an assurance of quality criteria in the research study. Trustworthiness must be established with the understanding that another researcher believes in the trustworthiness of the prior study. Critical to rigor is the insight of the researcher to adjust for personal bias, also described as researcher reflexivity (Johnson et al., 2020). Trustworthiness is built upon transparency. For example, when participants are part of the member checking process, credibility and trustworthiness are supported. Decoding data in an open, factual process is also necessary to the integrity of the research process (Claxton & Michael, 2020; DeCino & Waalkes, 2019). Trustworthiness was born out of the credibility, dependability, and confirmability of the methods used. Methodology supported these areas and added to the trustworthiness of the research. Trustworthiness is important in building relationships between researcher and participants (DeCino & Waalkes, 2019; Huttunen & Kakkori, 2020). Important measures are constructed to allow participants to review and evaluate the data. The researcher must make clear the instructions and the purpose of participants as it relates to the interpretation of the data. According to Heidegger (1977), phenomenological hermeneutics is a process of interpretation by lived experience; therefore, interpretation is fluid as it is shaped by the individual's sense of the world and its meaning. In this respect, interpretation as subjectivity is inherent in qualitative research.

Credibility

Credibility means research must be believable (Creswell & Poth, 2018). The quality is more important than the quantity. Data is triangulated and member checks are conducted.

Credibility is established as a multistep assessment of all aspects of the research. The study should be evaluated by the researchers, asking themselves about personal bias. Personal reflection is highly important. Credibility is confidence in the study and the researcher's reputation. If a researcher has strong credibility, his/her studies can add a foundation in developing new research. Personal bias can be balanced by bracketing, which is the process of acting nonjudgmentally. Member checks are a prime component of credibility (Check & Schutt, 2021). According to Lincoln and Guba (1985), member checks assist multiple individuals involved in the research and provide opportunities for researchers and participants to delve deeper into analysis of findings. Discussions, summaries, and elaborations help to divulge and expand upon trends and themes. Member checks can be organized in different ways. For example, a transcript can be circulated to participants that allows them to further analyze and interpret results in a general or coded manner. This process of review adds to the accuracy of the study. Peers or colleagues may also be called upon to clarify the content and find errors. The intent is to reduce bias and present research in the most organic light. Providing participants with a copy of their interview and focus group transcripts ensures interpretations are accurate. If there is an error detected, corrections can be made using input from the participants. If all data are found to be accurate and intentional, then no changes to the data need to be made for the analysis.

Transferability

The researcher does not know all the sites of future studies but must provide a rich description so that other researchers may transfer the findings to their intended site (Lincoln & Guba, 1985). Creating transferable results requires clarity (Nowell et al., 2017). Transferability is the utility that the research can be used in further studies, if applicable. It is up to the researcher

to determine the transferability for future research. Researchers must ask themselves about the generalizability of the study and how that would apply to their methodology and research design. An empirical research study should have a solid element of transferability within its field of expertise. The proposed study design and methodology should be able to be transferred to teachers at the research site as well as other educational settings. Researchers, participants, and stakeholders should feel confident of the results and facts determined by the research.

Dependability

Dependability ensures that the findings are consistent and can be repeated. If the study is dependable, other researchers can achieve similar results (Lincoln & Guba, 1985). Dependability was determined by an inquiry audit conducted by the dissertation committee and the Qualitative Research Director. Accountability is secured by member checks and can add a fresh perspective to the data. Triangulation and audit trails add to authenticity of the data analysis. Debriefing with participants bring themes and trends to the surface.

Confirmability

Essentially, confirmability is a challenge to the findings to confirm that the data support the study's intent. The findings must be checked for bias as inherent in qualitative research is the researcher's perspective, which could influence the study's findings. An external researcher should examine the findings, then an audit trail should be conducted by an outside auditor to demonstrate how the original researcher's decisions were made throughout the course of the study (Lincoln & Guba, 1989). Confirmability is determined by participant responses to interviews, journal prompts, and focus groups. The reflexivity within the research allows the researcher to examine his/her motivations and self-check for bias.

Ethical Considerations

Ethical considerations included site and participant access, confidentiality, and informed consent from the participants. Participants were informed of the voluntary participation and be made aware that they have the right to withdraw at any time. Participants were assigned pseudonyms for participants and the site. Participants and stakeholders were informed of secured data storage. If data are not included in the dissertation, it may be destroyed after three years; however, if the data are valuable to future research, it may be retained. Participants remained aware of any risk associated with their participation. Ethical considerations should be determined prior to submitting a written report of findings that are credible and believable (Thorne, 2008).

Permission is requested from the Institutional Review Board (IRB) to protect the rights of participants. Permission from Liberty University was required to gain access and conduct research. Confidentiality was provided for participants by using pseudonyms, and only the researcher has access to the documentation under lock and key. Coding was used to further protect participant comments and confidentiality. This research study was designed to be highly ethical and morally appropriate for use and replication of other suitable education settings.

Permissions

Request for IRB approval was submitted to the IRB through Cayuse. Before approval is granted, important elements of the prospectus must be followed. Request letters must be sent to prospective participants, including the required informed consent forms. No data are to be collected before IRB approval is granted. There must be minimal risk to participants during the research, and selection of participants must be equitable among prospective participants. Established in the research plan is the protocol for monitoring data that ensures the safety of the participants, and the privacy and confidentiality of the participants must be maintained.

Summary

Chapter Three describes the purpose of this phenomenological study: teacher experiences with professional development at the K-12 level were explored to understand the influence PD has on preparing teachers to educate and may use interventions that are recommended for cognitive reading disorders and dyslexia. The theoretical underpinnings align with a constructivist approach based on the foundational works of Piaget (1952). The methodological design in this qualitative study is hermeneutical, and data was compiled from three different sources audio-recorded interviews, journal responses, and focus groups. Audit trails are useful in tracking the study's validity and were considered across key checkpoints such as trustworthiness, credibility, transferability, dependability, confirmability, and ethical considerations. Data analysis for this study was accomplished manually, and computer application Qualtrics® was utilized for survey analysis. Confidentiality is extremely important in research, as is data storage; therefore, data was stored in a locked file cabinet and secured by a password-protected laptop.

Research questions are designed to address the concerns of the proposed study. There is a Central Research Question (CRQ) and three sub-questions. The setting was a K-12 educational setting, and the participants were selected using criterion sampling. Researcher positionality is aligned with social constructivism. The researcher's role was bracketed and reflexive to accommodate the interpretive framework of this qualitative study. Procedures include a request for Internal Review Board (IRB) approval, and no data was enacted prior to that approval. After IRB approval was granted, permission from the prospective site and administration were requested. Teachers were contacted by flyer, request letter, and informed consent approved by IRB. Data collection and triangulation were conducted to ensure credibility and transferability. Individual semi-structured interviews were conducted by asking open-ended questions.

Individual data analysis was compiled and analyzed. Interviews, journal responses, and focus groups were considered in the qualitative interpretation.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this phenomenological study is to understand the experiences of the 10 K-12 teacher participants who may implement instruction and interventions for students who struggle with cognitive reading disorders and dyslexia. Differentiation strategies help students to navigate their challenges with cognitive reading disorders and dyslexia. Chapter Four focused on the data found through the teachers' interviews, participant reflection journals, and focus groups. The chapter began with a detailed description of the participants. Codes were extracted from all the data collected then analyzed and categorized. Next, the data findings were divided into themes and sub-themes. The chapter concludes by sharing the answers to the central research question and sub-questions.

Participants

This section provides a description of the participants in this study. Table 1 lists the participants, the number of years taught, the participants' highest degree, their content area, and their grade level. The teachers were introduced in separate paragraphs for the readers, which brought the information to life. In this study, 10 K-12 teachers were chosen to participate. The 10 teachers ranged in teaching experience from 3 to 27 years of service. All teacher participants were female.

Evelyn

Evelyn was my first participant. During the interview it was evident that she was an experienced teacher and cognizant of reading disorders. Evelyn indicated she had experience with teaching students with processing disorders and dyslexia. She is interested in learning more

about students with cognitive reading disorders and dyslexia. Evelyn had recorded stories for students because she reads them with inflection. “I read it with expression so that they cannot be bored out of their minds because again it activates the same parts of the brain.” Evelyn was willing to differentiate her instruction to meet the needs of her students.

Janis

Janis is passionate about creating a supportive environment for her students. Janis had a very good sense of what technology can do for a student. She explained how manipulating the font in text can help a struggling reader. However, this can be problematic when not all classes have equal technological capability. If there is no copy and paste feature or text to voice program available, it may be up to the teacher to compensate with their own strategies. Of course, Janis also works within their accommodation plan created by a resource officer.

Teresa

Teresa likes to read inspirational stories to children who are struggling with cognitive reading disorders or dyslexia. Stories like “A Fish in a Tree” is about a girl trying to hide her dyslexic characteristics. Eventually the teacher in the story figures it out. This story helped Teresa see those challenges through a new perspective. She wants the reader to know that teaching reading is very important to her because she understands how serious reading is as it affects all subjects and the rest of her students’ lives. Teresa now reflects on years of teaching struggling readers and is proud of the fact she and her students persevered through those challenges.

Margaret

Margaret has teaching experience in both public and private school. She is an English Language Arts teacher. Her experience is in teaching middle school and high school. She is

sensitive to her students challenges as she commented, students should be comprehending figurative language, but they are still trying to decode simple words and sentences. She enjoys including her students in conversations to create solutions to their challenges. She believes it is important to empower them to become independent learners. Margaret provides her students with the tools they need to navigate their struggles.

Jeanene

Jeanene has extensive experience in teaching kindergarten. She has taught many of her years in public school and is now teaching at Lakeview Christian Academy. Jeanene brings with her a strong sense of determination to see her students succeed. She purchased “beanie babies” on Amazon to provide her students with tactile examples of the letter-sound relationship. She is devoted to helping her students construct meaning and learn to read. Jeanene wants the readers to understand “ Students at all age levels come to school wanting and needing mostly the same things. Students want to be loved.”

Sandra

Sandra is dedicated to learning more about cognitive reading disorders and dyslexia. She understands the importance of collaboration with resource teachers. Sandra is skilled in composition experience and can quickly see where a student is struggling with literacy skills. Sandra engages her students in conversation to get a perspective on what they feel they are most challenged by. Sandra stated, “Although I currently teach students with dyslexia, there is so much to learn about what I can do as a teacher to aid those with reading and writing struggles.” Sandra is interested in increasing her knowledge of best practices for cognitive reading disorders and dyslexia.

Julie

Julie has spent about half her teaching years in public school and the other half now at Lakeview Christian Academy. She teaches math but is concerned about the students who struggle with math problems intertwined as reading passages. Julie is reflective and intuitive. She understands that she needs to find new ways of getting through to students. Some may be independent in calculations but struggle with reading and comprehension. Julie is sensitive to the struggles her students' experience and approaches them discreetly, as she does not want them to be singled out in front of their peers. She wants them to understand she is always there for them.

Cathy

Cathy has an engaging personality and many years of teaching experience. She enjoys seeing students reading books they are inspired by. Cathy found that giving her students a choice, increased the amount of time they spent reading. She is especially interested in learning more about cognitive reading disorders and dyslexia. Cathy is reflective as she stated, "This study also helped me to better understand my need for more training on these topics, especially tactics that can be used at the high school level. Because I teach English, this is probably something I should know more about." Cathy expressed her appreciation of listening and sharing with other educators on multiple grade levels.

June

June has a high energy personality. She has experience in public school and is now teaching at Lakeview Christian Academy. Most of her experience is in special education. June wants the readers to know that she is indeed passionate about teaching and her students. She stated, "Reading is the door that can open so many possibilities for each child and individual. It may take lots of extra effort. It may take having just the right teacher or parent to turn the

lightbulb on. It may be years before they feel confident or get close to where their peers are reading. “However, it is ALWAYS worth the extra time, work, and effort to gain those basic reading skills.”

Helen

Helen teaches an elective and there are one of two ways she acquires her students. First, they may elect to take her class, or they may be assigned. She recognized struggling readers who elect to attend, have higher motivation to succeed. While students who are simply placed, tend to be less motivated. Regardless of how they arrive, she creates an atmosphere of hands-on learning. Helen understands the influence that constructivism can have on language acquisition and struggling readers. She understands the value of acting out a task to instill another level of learning.

Table 1:

Teacher Participants

Teacher Participants	Years Taught	Highest Degree Earned	Content Area	Current Grade Level	Past Grade Levels Taught
Evelyn	14	Masters	K-12 Social Studies	Grade 11	Grades 9-12
Janis	14	Ed Doctor	K-12 Elementary Education, K-12 English, Middle School Math	Grades 6-12	Grades 7-8
Teresa	17	Bachelors	K-12 Social Sciences/History	Grade 7	Grades 2, 4, 6, and 7
Margaret	19	Masters	K-12 English Language Arts	Grades 9-10	Grades 6-10
Jeanene	16	Masters	K-12 Elementary Education	Grade 2	Kindergarten and 5 th Grade

Sandra	3	Masters	K-12 English Language Arts	Grades 10-11	College English 101
Julie	16	Ed Doctor	K-12 Math	Grades 7-8	Grades 6-9
Cathy	27	Masters	K-12 English Language Arts	Grades 11-12	Grades 6-College
June	15	Bachelors	K-12 Elementary Education	Grade 1	Grades 1 and 3 AND Special Education K-5
Helen	13	Bachelors	K-12 Family and Consumer Sciences	Grades 7-12	Grades 7-12

Results: Themes Development

Data were collected from the participants' interviews, journal responses, and focus groups. Direct quotes from the participants were utilized verbatim including grammatical errors to depict genuine conversational responses. Table 2 demonstrates the theme development followed by the subthemes and codes. Throughout the study five themes were generated: Professional Development Experience, Interventions, Teacher Collaboration, Teacher Confidence, and Suggestions for Improvement. Each theme and subtheme were supported by the codes found by the data analysis. The research questions were thoroughly analyzed by the researcher to reinforce the themes and subthemes. Responses to the research questions are provided.

Table 2:*Themes and Subthemes*

Themes	Subthemes
Professional Development Experience	Limited Professional Development Annual Professional Development COVID-19 Pandemic Influence on Professional Development
Interventions	Assistive technology Group Work Positive Reinforcement Treat students equally Differentiation
Collaboration	Teacher Collaboration
Teacher Confidence	No Subtheme
Suggestions for Improvement	No Subtheme

Professional Development Experience

A common theme experience that appeared in most participant's data was exposure to Professional Development (PD) that does not always pertain to the needs of teachers in real time. Key components of PD are an integration of content and teaching practice, alignment with standards and policy, learning opportunities for teachers, and building on a foundation of skills to culminate in best practices. Most teachers commented they have had some experience with professional development, but it was not targeted for cognitive reading disorders and dyslexia.

However, June was the only participant who attended PD for the LETRS literacy program at another school and shared that, “it was heavily based on the science of reading such as dyslexia.”

Limited Professional Development

Limited professional development appeared in most participant data. Limited professional development opportunities are described. The PD experiences were not targeted for cognitive reading disorders and dyslexia. Janis said, “Most professional development sessions seem to focus on school culture, managing behavior, or engaging the students.” During the individual interviews, most of the participants shared that they generally have had limited professional development. In Evelyn’s interview, she commented that she would like to have “more [targeted] strategies to help [students] when they are reading on a test or a textbook.” Teresa stated that “reading comprehension is always a major concern because a lot of times [students] can't comprehend what they read independently.” During the interview, Helen said, “I would say like those two [PD] main ones that I mentioned earlier like the in-service that I went to that was optional and then the video training that I did for my license.”

Annual Professional Development

Each year during the Thanksgiving break Lakeview Christian Academy dedicates a couple of days for teacher professional development. In the past, other schools were invited to participate. This year it was reduced to one day and only included LCA. The three topics discussed were relationships, Creation-Fall-Redemption (CFR) integration, and curriculum mapping. Margaret said, “We were able to design new lessons, help one another implement CFR in organic and meaningful ways, and evaluate how to use effectively use CFR for writing, grammar, literature, and vocabulary.”

June's experience with the LETRS literacy program was intriguing because she mentioned that "it was a whole year of professional development, but this was through a public school."

COVID-19 Pandemic Influence on Professional Development

In the individual interviews, four out of 10 participants mentioned that the COVID-19 Pandemic hindered teachers from receiving professional development. Janis claimed that "I was looking for stuff [PD] a couple years ago and then, like everything else, COVID kind of shut stuff down so I haven't really looked at conferences that deal with high-school online students." Teresa briefly touched upon the influence of the pandemic stating, "I say to some degree partially because I think what we are kind of experiencing right now again is still the aftermath of COVID and kids missing so much that I feel like we are catching up on training kids how to be in school." Covid presented the educational system with some unforeseen consequences. It will certainly take time to try and catch up. It is true for both teachers and students.

Interventions

The participants shared that they make an effort to utilize interventions for students who struggle with reading. However, they acknowledge that most of them have not been trained in evidence-based targeted multisensory interventions. Evelyn and Teresa brought up the strategy about incorporating literature of notable individuals with cognitive reading disorders and dyslexia. Teresa believed that "having a small library of books like that so that the other children who are experiencing that goes oh I'm not the only person that feels this way!" Jeanene talked about simplifying activities for her students that are low-level readers. Jeanene said that "they don't know how to do anything independently unless somebody is there with them." Margaret has provided a plethora of strategies that she utilizes within the classroom. Those strategies included the use of peer assistance, chunking, imagery, role playing, kinesthetic activities, and

wiki sticks. Margaret explained that wiki sticks are “like a little ruler that would highlight only two or three lines of text at a time; student(s) could use that as we read, and it helps them to keep track of the line that we were on.”

Assistive Technology

Five out of 10 participants mentioned the positive use of assistive technology to help students who struggle with reading. Evelyn, Janis, Teresa, Cathy, and June have incorporated assistive technology that guide students when reading. Cathy mentioned that there are online reading programs that are “designed to retrain the [students’] eyes to read correctly.” Four participants talked about the use of audio books. Janis explained that “if [students] need help reading [text], to use an audio program to read the screen for them.” Two participants talked about the use of the text-to-speech modality so that the text can be read aloud for students who struggle to read.

Group Work

Teresa mentioned that during a professional development meeting “we would talk about how to do small group instruction or response to intervention and how to meet the needs of those students as well.” Jeanene talked about an experience where her student wanted to work independently but would not fully understand the in-class assignment. Jeanene said that this student “wants to be independent but she's not real sure how to do it so you [teacher] still have to take over.” Evelyn, Margaret, and Julie also explained the significance of peer assistance for students who struggle with reading. The participants were interested in providing their students with the best practices for group work. They believe that group work provides struggling readers with extra support from the teacher and student peer work.

Positive Reinforcement

Margaret explained how she uses positive reinforcement strategies to help students who may struggle with reading. She said that professional development “really taught me the power of using different like sensory methods in the classroom and so we're not maybe we're not just going to read this story but maybe we act it out or maybe we create something with that story or maybe we only look at a chunk of it instead.” Cathy attempts to encourage a positive habit of reading within her classroom. Cathy mentioned that “we're encouraging a habit of reading and a love for reading without punitive damages.”

Treat Students Equally

Julie described that she previously taught a student with dyslexia in her class. Julie alluded to the fact that she adapted to students with dyslexia’s inverted handwriting. She was committed to finding ways to reach each student. She would adapt to her students’ representations when she understood what they meant to write. This ensured her students understood she is supportive and prepared to treat them equally. Julie said:

I remember specifically a student I taught maybe three years ago she had dyslexia and so a lot of times she would actually write her numbers backwards and so I kind of just learned like what she meant by what she had written down and I as long as I understood like she knows what she's doing this is the correct answer it's just written backwards or written wrong because of her disability and I would give her credit anyway because to me that's not fair to mark her down if she clearly knows it's just a matter of writing it backwards.

According to Janis, she had a professor who would write his letters backwards sometimes if he was writing to fast. She learned it was not that he saw things backwards it is just that he

processes differently. Teresa warned against labeling a student who may mix up a b and d. Transposing a letter can sometimes be developmental and does not necessarily indicate characteristics of dyslexia. According to June, some of the best professional development on cognitive reading disorders and dyslexia training she experienced was from the LETRS program and IMSE Institute for Multisensory Education professional development training she experienced at a previous location.

Differentiation

Sandra said that her “bachelors’ education and practice has been more about differentiating instruction, so I understand the need to like meet different learning styles in the classroom without directing that at dyslexia and reading disorders.” She often differentiates to create a more manageable task for her students. Some of the differentiation is good practice for students because it addresses reading needs. The participants believe that vocabulary and comprehension are skills the students need to get the most out of their education. If presenting a lesson in a different way increases those skills that is what should be done. The differentiation is done in multiple ways to reach students. It is sometimes a matter of making the text bigger or creating more manageable sentences. Helen differentiated by using an app called NEWSOLA because she could adjust the story’s reading level and still maintain the original meaning with less wordiness. Helen mentioned chunking and splitting a question into more comprehensive parts helped readers navigate the text.

Margaret talked about involving the student in creating tools they can use for themselves. Pausing to think about what was read or writing a short response to a passage also helps the student to comprehend the text. Sandra differentiates by discussion with the student one on one about what they believe in might be a helpful approach they can try together. Julie invites

students for extra help during down times so that a student does not have to feel self-conscious about being called out. She suggests meeting with her before school, during lunch, after school, or small group session. June had a similar approach to Sandra's. June asks the students what they feel they don't understand. Then she asks them to try and work on a problem or passage on their own. Of course, she is available if they need further clarification. Helen guides the students in navigating a recipe by annotating. The student learns to underline and circle pertinent information. This results in teaching the student how to differentiate naturally. Margaret also teaches students to annotate to find important information they can come back to later. She also incorporates a multitask approach to reading. She wants them to first hear a story. Then read the story and ultimately reread the story. By breaking it down this way it becomes more manageable to comprehend the meaning.

Sandra differentiates by giving the class an independent task to accomplish. This allows her to spend quality one on one time to devote with a student who has dyslexia. It works well because the other students are engaged, and she is available to provide the extra help needed for the student who struggles with dyslexia. Julie noted that her students may understand math calculations, but struggle with the reading passages. She differentiates by reading the problem aloud to those students because it relieves their stress then they can focus on the meaning of the task. Janis differentiates by providing students with an audio version of literature. Old English can be confusing, so she also gives them access to a modern version that maintains the meaning. Ultimately, she does expose them to the depth and essence of the Old English Literature but provides them a way to comprehend it in manageable styles and presentation.

Jeanene differentiates homework for students who struggle with reading. She tailors the task to not frustrate the students. This way they can attain a sense of success and naturally build

stamina for learning. This encourages them to want to read because they have a feeling of accomplishment. June uses the David Kilpatrick Program. She utilizes the built-in screener to help her identify struggling students. Once she has a sense of what they need she creates a smaller group to focus on just those deficits. This way they can build the foundation before they are presented with more challenging tasks. Teresa was in a different school last year and felt frustrated because the curriculum was not a solid one. She had to find multiple ways to differentiate for the students. Teresa had to introduce the students to the basics because they were not being exposed before the more demanding expectations. Going back to basics and creating a strong foundation is what her students needed. She is delighted to now be in a school that is a caring and supportive environment for teachers and students. It is rewarding to see teachers pivot by differentiation to support student success.

Cathy changed her approach to how she teaches vocabulary. She was tired of students learning new words simply to memorize them for a day or just for a test. Cathy differentiated her instruction to include learn by doing. She realized the best way for a student to remember vocabulary is to learn how to use it in their writing. Creating a learning environment that extends and connects to real-life experience. Evelyn differentiated by reading the test questions to a student with severe dyslexia. Evelyn said, “This student’s scores improved dramatically. I am simply providing a research-based accommodation that I learned about in a school-provided PD from several years ago.”

Collaboration

From the individual interviews, six out of 10 participants spoke of a resource teacher that they may collaborate with. Sandra stated that “the resource teacher has a class with these students every single day of the school week and they help with things like vocabulary reading

things aloud giving those students an environment to learn and explore.” Julie mentioned that “you are working hand in hand with the resource teacher and you're collaborating with some of the other teachers.” One subtheme is evident for the theme of collaboration. That subtheme involves teacher collaboration. The participants all agree that working in their school is a very supportive environment. Administrators and teachers collaborate and support one another on a regular basis. It is a very welcoming environment of caring people.

Teacher Collaboration

Cathy mentioned, “teacher collaboration which to me is just as rich as professional development.” As aforementioned, four out of 10 participants talked about the collaboration with a resource teacher. Julie said, “one thing that we do every year that is super helpful at the beginning of the school year and during the teacher workdays, we have a meeting with the resource teacher.” The participants really appreciate the extra help that the resource teacher can provide the students. They also acknowledge they receive helpful strategies when they collaborate with the resource room and teacher to teacher collaboration. It is very helpful to seek advice from one another because that is how knowledge is shared. It also provides the next year teacher with a wealth of information that can be passed on.

Teacher Confidence

All the participants in this study are confident teachers. However, most wished to have more professional development targeting cognitive reading disorders and dyslexia. Evelyn wished to have PD in “specific interventions at my grade level.” Participants also expressed a wish to have the professional development demonstrated in their classroom. This would boost their confidence in utilizing new strategies for students who struggle with cognitive reading disorders and dyslexia. Overall, the participants are confident teachers who love teaching,

working at LCA, and their school administrators because of the support they receive. The participants describe LCA like a family with love and respect for everyone. However, most participants recognized they could use some additional strategies and interventions specifically targeting cognitive reading disorders and dyslexia.

Suggestions For Improvement

The participants touched upon some excellent suggestions for improvement in regard to professional development. Four out of 10 participants wished to have more PD whether it be in general, targeting dyslexic characteristics, or specifically for math teachers because students do need to navigate their way through reading passages too. Jeanene explained that she would like to see professional development being demonstrated. Learning from the professionals in the field is a great way to acquire more knowledge. Seeing it in action is a great benefit. Jeanene said:

“I think that sometimes professional development does a really good job of telling us what we should be doing, but I really like to see things implemented. Like if you can come into my classroom and show me how to do this or go to someone's classroom and record them doing what you're wanting me to do. I love to watch YouTube videos of teachers teaching skills to students because then it gives me a way to say oh, I think I can do that.”

Evelyn similarly wished to have trained professionals visit classrooms to demonstrate and implement targeted strategies. Cathy said “I would love to see teachers have more say so one day in professional development.” Julie similarly mentioned “I just think if there were more teacher input then PD could be designed to help the teachers and if they help the teachers obviously the students can benefit as well.” Jeanene briefly spoke about possibly having a follow-up professional development meeting on how to present the

students' results to the parents. Jeanene specifically said that she "would like to have a follow up professional development on how to disseminate the report to parents and how to explain you know what the different aspects are." The participants have relevant concerns and are key to devising effective and informative professional development opportunities.

Research Question Responses

The data from teacher participants' is collectively represented by interviews, participant journal responses, and focus groups. During analysis it is evident how these participants experiences combine to answer the central research question, sub-question one, sub-question two, and sub-question three. The study builds upon each data collection. It evolved to holistically answer the critical research question and the sub-questions. The following is an explanation of how the critical research question and sub-questions were answered.

Central Research Question

What are the experiences of K-12 teachers who receive professional development to provide cognitive reading instruction with interventions specific to dyslexia? The common experience of teachers included limited professional development targeted toward cognitive reading disorders and dyslexia. Through interviews, participant reflections journals, and focus groups, five common themes emerged: limited targeted professional development, interventions, teacher to teacher collaboration, teacher confidence, and suggestions for improvement.

Sub-Question One

How has the school's professional development or other prior professional development experiences informed teachers about the complexity of cognitive reading disorders and dyslexia?

Teachers commonly experienced professional development at school, but it was not targeted toward cognitive reading disorders and dyslexia. On reflection, the teachers described the support of their school administrators, resource room and reading teacher as a good resource, but acknowledged they were not prepared in implementing specific strategies for cognitive reading disorders and dyslexia.

Sub-Question Two

What interventions are currently used for students with cognitive reading disorders and dyslexia based on what teachers have learned from professional development? Teachers at this school are very resourceful and willing to share best practices. During participation in this study, teachers reflected on different areas of professional development at school, in college, at seminars, and the internet. The focus groups provided an opportunity to share teacher-to-teacher strategies. They use these strategies to help students in general education and for those who may have cognitive reading disorders and dyslexia. The teachers are appreciative to have the opportunity to work with a caring staff who all have the best interest of the children in mind.

Sub-Question Three

How confident are teachers in using the interventions to meet the diverse needs of students with cognitive reading disorders and dyslexia? Overall, the participants in this study are confident and effective teachers. They are proud of the school's culture and the shared mission of educating the students to the best of their ability. They collaborate and rely on the resource room, reading teacher, and teacher to teacher collaboration to collectively share best practices. They recognize that some interventions are good for regular education and students with cognitive reading disorders and dyslexia. There is only one area in which they feel less confident, but that is only because there have limited opportunities for professional development experience

especially providing targeted interventions specifically for cognitive reading disorders and dyslexia.

Summary

Chapter Four analyzed data from the participants' interviews, journal responses, and focus groups. This study identified five significant themes: professional development experience, reading interventions, teacher collaboration, teacher confidence, and suggestions for improvement. The participants in this study have reflected on their experiences with professional development. Teacher responses unveiled professional development experiences came from several sources. Some professional development opportunities at their school, previous schools, college courses, seminars, reading teachers, resource room, and teacher to teacher sharing knowledge and expertise. However, they had limited experience from professional development geared toward cognitive reading disorders and dyslexia.

CHAPTER FIVE: CONCLUSION

Overview

The purpose of this phenomenological study is to understand the experiences of the 10 K-12 teacher participants who may implement instruction and interventions for students who struggle with cognitive reading disorders and dyslexia. Chapter Five begins with a discussion of findings assessed from the collection of data and analysis. These findings were categorized by codes and assigned to themes and sub-themes. Then, implications for practice are addressed. Limitations and delimitations are included. Finally, this chapter concluded with recommendations for future research on teachers' experiences with professional development and cognitive reading disorders and dyslexia.

Discussion

This section highlights the findings of this study. These findings are based on the five themes that emerged in Chapter Four. First, findings are explained for the reader. Second, the findings are presented as they relate to the literature. This process exemplifies to the reader how the data is assimilated to develop themes and interpretations. Third, the explanation of findings supports Piaget's (1952) theory of cognitive development and his perspective on constructivism. Next, empirical implications of the research were identified, which demonstrated that there are limited studies on K-12 teachers' experience with professional development on implementing intervention for cognitive reading disorders and dyslexia. Finally, the limitations, delimitations, and recommendations for future research are addressed for the reader.

Summary of Thematic Findings

These sections refer to a summary of each thematic finding with implication of practice. The purpose is for the reader to understand how the study connects to the central research question, sub-questions, and the theoretical approach used. Then, the implications are addressed for application to professional development education and future research. These themes are developed through interviews, journal responses, and focus groups. The data collection evolved holistically over time to uncover the meaning of experiences. Data collection was acquired and analyzed to create the following five themes.

Interpretation of Findings

The following section summarizes the thematic findings and implications for practice. Therefore, the reader can understand how the research connects to the central research question, sub-questions, and theory guiding the study. The research was compared to the existing literature. The literature and findings were analyzed to produce the results. The findings culminated in the following interpretation.

Professional Development Experience

A common theme of professional development was limited experience regarding training for cognitive reading and dyslexia. However, teacher participants are proficient in collaborating with the Resource Room, reading teacher, and one another. They share experiences and knowledge to meet the needs of their students. Participants were diverse in their acquired skills. Professional development was not usually targeted to cognitive reading disorders and dyslexia. Teacher participants acquired PD training through teacher education programs, seminars, internet programs, and teacher collaboration.

Interventions

Teacher participants in this study used what they had acquired and shared to help struggling readers. Some used Assistive Technology for audio books. Others used text-to-speech features. Small Group work was utilized to provide struggling readers with extra support. Teacher to teacher best practices were shared. Two teachers were familiar with Orton Gillingham methodology. One participant had experienced some training on the LETRS program at another school. And another had some familiarity with the LETRS program based on what she had learned from the internet.

Teacher Collaboration

Teacher participants of this study value the administration and Resource Room educators for their support. They described a close working relationship where everyone cares about one another. This is a trait that is part of their school culture. It is an environment that supports one another and this collaboration transfers to the students. Group work emphasizes the practice of helping one another. There is an undeniable bond between the teachers and the administrators at LCA. This was evident through focus groups and rich descriptions of support and respect for one another in this close-knit school culture.

Teacher Confidence

These teacher participants are confident educators. They enjoy teaching and take great pride in helping their students. However, there is one area in which most are less confident in. That is implementing strategies specifically targeted for cognitive reading disorders and dyslexia. This may be due to a lack of specific targeted and sustained professional development devoted to cognitive reading disorders and dyslexia. Participants acknowledge they have professional development in other areas of education. Participants appreciate the service providers in their

school who are available for the students and address teacher inquiries. Collectively they strive to meet the needs of all their students.

Suggestions for Improvement

A common desire for participants is to have targeted professional development that pertains to the population they teach and student needs. Teacher participants expressed an interest in learning how to implement the best strategies for students who struggle with reading or have cognitive reading disorders and dyslexia. The teachers believe those strategies would be beneficial for general education and struggling readers. The ideal professional development model may be acquired by learning from the professional/presenter exactly how to implement targeted multisensory evidence-based reading strategies for cognitive reading disorders and dyslexia. The teacher participants of this study have a strong desire to implement best practices. Teachers may benefit by having a voice in the selection of professional development topics. They believe this would give them an opportunity to request and receive the best practices for their individuals' grades and content areas.

Implications for Practice

Implication for Practice

Professional development comes in different forms, styles, content areas, and purposes. However, an important implication for practice in this research setting is to provide teachers with targeted professional development for cognitive reading disorders and dyslexia. Teachers may have a higher degree of confidence in teaching students with cognitive reading disorders and dyslexia if they had targeted and sustained professional development on evidence-based multisensory strategies for cognitive reading disorders and dyslexia. Ten out of 10 teachers in this study are confident educators because they know they implement instruction in a

comprehensive manner. However, they acknowledge they are not entirely comfortable with implementing interventions for cognitive reading disorders and dyslexia. This is primarily because of limited professional development in cognitive reading disorders and dyslexia. Many of the participants have not had targeted and sustained training in cognitive reading disorders and dyslexia. Teachers may benefit from professional development by having a voice in what they need in their classrooms and subject areas. The teachers agree that reading skills and interventions are a high priority for all subject comprehension. Another implication for practice was to have professionals in the field demonstrate how to implement the targeted strategies for the specific population.

Empirical and Theoretical Implications

Empirical Implications

The empirical implications of this study corroborates according to Handler et al., (2021); Darling-Hammond, (2014). More educators are calling for more cohesive and an interconnected approach to PD. This study found that teachers common assertion was there is limited PD and would appreciate a targeted and sustained approach to PD. Donovan et al. (2015) suggested that more research is needed to determine if teacher beliefs change when they receive PD. This study found that teachers began to think of PD through a different lens as a result of taking part in the study. Professional development was discussed holistically and is represented by multiple learning opportunities. Huijboom et al. (2020) suggested implementing PD into a learning culture supports instructional practice. This research study diverged from the extant literature because the participants were diverse in contents area. It was important to consider different subject areas because any teacher may have students with cognitive reading disorders and

dyslexia. Hauge, (2019); Kramarski & Heaysman, (2021) asserted interpersonal interaction builds trust and strengthens the academic support system through this shared culture.

Theoretical Implications

Piaget (1952) theory of cognitive development influenced this study by providing the supportive framework. Piaget's (1952) constructivist theory postulates that constructive knowledge and meaning is derived from individual learning experiences. This research study builds on the hermeneutic constructivism because it is an understanding that people experience the world differently. Peck & Mummery (2018) assert that events people acknowledge and appreciate become their own understanding of how the world works. Grounding this study is constructivism because interdisciplinary approaches are part of the skills set required for reading and writing. The essence of PD is bringing professionals together to construct meaning to develop the best practices. Effective PD brings teachers together to construct a shared learning environment. Theoretical implications are interwoven in this study. Bringing teachers together from different content areas is a constructivist approach to creating a culture of shared learning experiences. Hermeneutic constructivism is referred to as events because it does not exist without the human understanding of the event (Gadamer, 1960/2003; Peck & Mummery, 2018). Findings in my study indicated that teachers reflected on PD differently, but with common goals. Prior to this study, the teachers viewed PD as isolated and limited experiences. Since the study, there is a collective buzz and sharing about common and different PD opportunities that were experienced and are now being shared. In the discussions there are collaborations and curiosity for strategies and interventions that can be used for cognitive reading disorders and dyslexia.

Limitations and Delimitations

Limitations

Limitations are discussed as weaknesses in this study. First, this study consisted of single gender participants. Next, this study had a small teacher pool of just 10 participants. However, this study was used to determine how teachers within different content areas may be prepared to implement effective instruction to include all readers, fluent, struggling, cognitive reading disorders and dyslexic readers. This method insured an authentic reflection of professional development experiences to find the commonalities of participant experiences.

Delimitations

Teachers were included across content areas who may be exposed to or responsible for providing instruction for students with cognitive reading disorders or dyslexia. There were 10 K-12 teacher participants chosen because they represent K-12 professionals across grade levels, content areas, and shared common and different experiences, with professional development. This study is designed to find the common goals of professional development for teachers to provide best practices for general education students, struggling readers, and students with cognitive reading disorders and dyslexia. This is an important construct because educators are exposed to students' reading from basic requirements to the more complicated needs of the students. This study sought to determine how teachers are being educated by professional development to implement best practices.

Recommendations for Future Research

The following recommendation is for future research. This study can be used as a scaffold and be extended to include a wider range of schools, teacher participants, both female and male participants and geographical locations. Different kinds of schools can be included to

expand the study. By including other schools, teachers' understanding of professional development for cognitive reading disorders and dyslexia may be enriched. Teacher preparation and professional development for teachers may benefit from learning different methods to service students with cognitive reading disorders and dyslexia. Using a wide range of professionals in different subject areas also helps to train teachers across multiple content areas. Best reading practices may benefit all across subject areas in a K-12 educational setting. Teacher preparation is supported by providing professional development.

Another recommendation is to provide teachers with sustained professional development. An important element of successful professional development may be achieved by expert modeling of the desired lesson for teachers to acquire the intended knowledge. When professional development is implemented in the classroom it may become part of the school's culture. To learn by doing is part of the constructivist theory. Even teachers who are not directly involved in the teaching of reading, may be apt to implement helpful strategies for all students. Exposure to high quality interventions are key to developing best practices.

Funding for PD can be a financial burden. However, in a school setting such as LCA there is so much respect and emotional support. The teacher participants in this study are amazing and genuinely want to come together for the good of the students. As the researcher, it is recommended that these wonderful teachers can design more frequent PD experiences based on what they already know or learned from experiences. They enjoy collaborating with one another and can add a wealth of knowledge to the school. If each teacher took turns to present to the school, a small portion of high quality evidence-based reading methodology, a wealth of information could be cultivated.

Conclusion

The purpose of this phenomenological study is to understand the experiences of the 10 K-12 teacher participants who may implement instruction and interventions for students who struggle with cognitive reading disorders and dyslexia. The research site is a Christian educational K-12 setting. The 10 K-12 participants were selected from one school and have professional development experience, varied content experience, and grade levels. The selection of participants were chosen to illuminate the need for all teachers to have knowledge of students reading fluency, cognitive reading disorders and dyslexia. The teacher participants had common and wide ranges in teaching experience. Their backgrounds span from Bachelor's Degrees, Master's Degrees, and Doctorate Degrees. The 10 K-12 teacher participants criteria were to have experience with professional development, preprofessional programs, graduate education, on the job training, seminars, courses, Resource room, reading teachers, and or teacher to teacher collaboration. These participants were included to design an organic study to investigate how professional development contributes to educating the reading needs of students across different content areas. The 10 K-12 teachers participated in interviews, journal responses, and focus groups. The data was collected, compiled, analyzed, and categorized by codes that resulted in significant themes and subthemes. The research yielded five themes, professional development experience, interventions, teacher collaboration, teacher confidence and recommendations for future research. In conclusion, the purpose of this study was to investigate how professional development can contribute to teachers' professional knowledge. And how targeted professional development can help teachers across all content areas. Teachers should be able to implement intervention and strategies to help all readers from those who are fluent, to struggling readers,

and students with cognitive reading disorders and dyslexia. The goal of this study is to identify the professional experiences and needs of teachers to provide the best strategies.

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Appendices

Appendix A IRB Approval Letter

[External] IRB-FY22-23-1198 - Initial: Initial - Exempt

do-not-reply@cayuse.com <do-not-reply@cayuse.com>

Fri 6/30/2023 11:43 AM

To: Bracewell, Jonathan Matthew (Online Academy) <jmbracewell@liberty.edu>; Balestieri, Rosemary <rbalestieri@liberty.edu>

[EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content.]

LIBERTY UNIVERSITY

INSTITUTIONAL REVIEW BOARD

June 30, 2023

Rosemary Balestieri
Jonathan Bracewell

Re: IRB Exemption - IRB-FY22-23-1198 K-12 TEACHERS' EXPERIENCE WITH PROFESSIONAL DEVELOPMENT ON IMPLEMENTING INTERVENTION FOR COGNITIVE READING DISORDERS AND DYSLEXIA: A QUALITATIVE HERMENEUTIC PHENOMENOLOGICAL STUDY

Dear Rosemary Balestieri, Jonathan Bracewell,

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.(iii). 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) if at least one of the following criteria is met: The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by §46.111(a)(7).

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.

Sincerely,
G. Michele Baker, PhD, CIP
Administrative Chair
Research Ethics Office

Appendix B
Permission Request

July 8, 2023

[Recipient]
[Recipient Address]

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 Doctor of Education degree. The title of my research project is K-12 Teachers' Experience with Professional Development on Implementing Intervention for Cognitive Reading Disorders and Dyslexia: A Qualitative Hermeneutic Phenomenological Study and the purpose of my research is to understand the experiences of the 10 K-12 teacher participants who receive professional development and implement instruction and interventions for students with cognitive reading disorders and dyslexia.

I am writing to request your permission to conduct my research virtually through [Recipient]. Participants will be asked to complete an online survey (15 minutes), and sit for a 30–45-minute, virtual one-to-one video/audio recorded interview that will be later transcribed (pseudonyms will be assigned). Names and other identifying information will be requested as part of this study, but the information will remain confidential.

Thank you for considering my request. If you choose to grant permission, please provide a signed statement on official letterhead indicating your approval. A permission letter document is attached for your convenience.

Sincerely,

Rosemary Balestieri
Doctoral Candidate

Appendix C

Permission Letter

[Date]

[Recipient]

[Title]

[Company]

[Address 1]

[Address 2]

[Address 3]

Dear [Researcher's Name]:

After careful review of your research proposal entitled [Title of Research Proposal], [I/we] have decided to grant you permission to [Select the appropriate phrase:] [access our membership list/contact our faculty/staff/other and invite them to participate in your study]—OR—[conduct your study at [name of district/school/church/etc.]]—OR—[receive and utilize [name/description of archival data] for your research study]—OR—[other].

Check the following boxes, as applicable:

Retain, delete, modify, or add to the below options as applicable to your study.

[[I/We] will provide our membership list to [your name], and [your name] may use the list to contact our members to invite them to participate in [his/her] research study.

[[I/We] grant permission for [your name] to contact [description of potential participants] to invite them to participate in [his/her] research study.]

[[I/We] will not provide potential participant information to [your name], but we agree to [[send/provide] [his/her] study information to [description of potential participants] on [his/her] behalf.]

[If you are requesting archival data, retain the option listed below that is applicable to your study and remove the option that is not applicable.]

[The requested data WILL BE STRIPPED of all identifying information before it is provided to the researcher.]

[The requested data WILL NOT BE STRIPPED of identifying information before it is provided to the researcher.]

[Retain the below option if desired.]

[[I/We] are requesting a copy of the results upon study completion and/or publication.]

Sincerely,

[Official's Name]

[Official's Title]

[Official's Company/Organization]

Appendix D

Consent

Title of the Project: K-12 TEACHERS' EXPERIENCE WITH PROFESSIONAL DEVELOPMENT ON IMPLEMENTING INTERVENTION FOR COGNITIVE READING DISORDERS AND DYSLEXIA. A QUALITATIVE HERMENUTIC PHENOMENOLOGICAL STUDY.

Principal Investigator: Rosemary Balestieri, 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 teacher at the K-12 level. Taking part in this 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 study is to understand the experiences of the 10 to 12 K-12 teacher participants who receive professional development and implement instruction and intervention for students with cognitive reading disorders, dyslexia, or general education.

What will happen if you take part in this study?

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

1. Complete an online survey (15 minutes)
2. Participate in an audio and video-recorded interview via Zoom (30-45 minutes)
3. Respond by Email as a Journal Response (30-45 minutes)
4. Member Check to review your transcribed Interview for accuracy (30-45 minutes)
5. 1st. Focus Group (60 minutes)
6. 2nd Focus Group as Data Synthesis (45-60) minutes

How could you or others benefit from this study?

Benefits to society include increased awareness about the value of professional development and research on teachers experience with cognitive reading disorders and dyslexia.

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. I am a mandatory reporter. During this study, if I receive information about child abuse, child neglect, elder abuse, or intent to harm self or others, I will be required to report it to the appropriate authorities.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researchers will have access to the records.

- Participant responses will be kept confidential by replacing names with pseudonyms.
- Interviews will be conducted in a location where others will not easily overhear the conversation.
- Data will be stored on a password-locked computer/in a locked file cabinet. After three years, all electronic records will be deleted, and hardcopy records will be shredded.
- Recordings will be stored on a password locked computer for three years. The researcher and members of her doctoral committee/the study team will have access to these recordings.

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

- Participants will receive a \$50.00 Amazon gift card at the conclusion of the Survey and a \$50.00 Amazon gift card upon completion of the Interview, a \$50.00 gift card at the completion of a Journal Response by Email, a \$50.00 gift card at the completion of the Member Check, a \$50.00 gift card at the completion of 1st. Focus Group, and a \$50.00 completion of the 2nd. Closing Focus Group for a total participation amount of \$350.00 per participant!

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. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

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

If you choose to withdraw from the study, please exit the survey and close your browser. Your responses will not be recorded or included in the study. If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this 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 Rosemary Balestieri. 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, Johnathan Matthew Bracewell 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. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is 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/video-record me as part of my participation in this study.

Printed Subject Name

Signature & Date

Appendix E

Recruitment Email

Dear Prospective Participant:

As a graduate student in the School of Education at Liberty University, I am conducting a qualitative hermeneutic phenomenological study to better understand K-12 teachers' experience with professional development on implementing intervention for cognitive reading disorders and Dyslexia. The purpose of my research is to understand the K-12 teachers' experiences who receive professional development to provide cognitive reading instruction with interventions for cognitive reading disorders, dyslexia, or general education. I am writing to invite eligible participants to join my study.

Participant inclusion criteria are teachers at the K-12 Level from Lakeview Christian Academy. Teacher participants should have some experience by exposure to Professional Development topics in education. I would prefer my participants be from Lakeview Christian Academy. They are of particular interest because of their shared mission as Champions for Christ and Warrior Educators. Participants, if willing, will complete an online survey (15 minutes), and sit for a 30–45-minute, virtual one-to-one video/audio recorded interview that will be later transcribed (pseudonyms will be assigned). Response to Email as a Journal Response (30-45 minutes). Member Check to review your transcribed Interview for accuracy (30-45 minutes). Participate in 1st Focus Group (60 minutes). Participate in 2nd Focus Group (45-60 minutes). Names and other identifying information will be requested as part of this study, but the information will remain confidential, and pseudonyms will be assigned.

To participate, please contact me at [REDACTED] for more information and to schedule an interview.

A consent document is attached to this email. The consent document contains additional information about my research. If you choose to participate, you will need to sign the consent document and return it to me via email prior to participating in any procedures. If you have any questions, please do not hesitate to contact me at [REDACTED].

Participants will receive a \$50.00 Amazon gift card at the conclusion of the Survey and a \$50.00 Amazon gift card upon completion of the Interview, a \$50.00 gift certificate at the completion of a Journal Response by Email, a \$50.00 gift certificate at the completion of a Member Check to review your transcribed Interview for accuracy, a \$50.00 gift certificate at the completion. 1st. Focus Group at the completion a \$50.00 gift certificate at the completion of the 2nd Focus Group a final \$50.00 gift certificate. Data collection methods will be staggered as to document the evolution of the study and respect for participants' time.

Sincerely,

Rosemary Balestieri
Doctoral Candidate
[REDACTED]

Appendix F
Recruitment Flyer

Research Participants Needed

K-12 TEACHERS' EXPERIENCE WITH PROFESSIONAL DEVELOPMENT ON IMPLEMENTING INTERVENTION FOR COGNITIVE READING DISORDERS AND DYSLEXIA: A QUALITATIVE HERMENEUTIC PHENOMENOLOGICAL STUDY

- Are you a teacher at the K-12 level affiliated with [Recipient]?
- Do you have some experience by exposure to Professional Development topics in education?

If you answered **yes** to both questions, you may be eligible to participate in an education research study.

The purpose of this phenomenological study will be to understand the experiences of the 10 to 12 K-12 teacher participants who receive professional development and implement instruction and interventions for students with cognitive reading disorders, dyslexia, or general education.

Participants will be asked to do the following:

- Complete an online survey (15 minutes)
- Participate in an audio and video-recorded interview via Zoom (30-45 minutes)
 - Respond by Email as a Journal Response (30-45 minutes)
- Member Check to review your transcribed Interview for accuracy (30-45 minutes)
 - 1st. Focus Group (60 minutes)
 - 2nd Focus Group as Data Synthesis (45-60) minutes
- **Participants will receive a \$50.00 Amazon gift card at the conclusion of the Survey and a \$50.00 Amazon gift card upon completion of the Interview, a \$50.00 gift card at the completion of a Journal Response by Email, a \$50.00 gift card at the completion of the Member Check, a \$50.00 gift card at the completion of 1st. Focus Group, and a \$50.00 completion of the 2nd. Closing Focus Group for a total participation amount of \$350.00 per participant!**

Names and other identifying information will be requested as part of this study, but participant identities will not be disclosed, and pseudonyms will be assigned.

A Recruitment Letter and Consent Form documents will be emailed to you.

The study is being conducted virtually through the ZOOM platform. A link for the ZOOM meetings will be sent to you via email before the data collection.

Rosemary Balestieri, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Please contact Rosemary Balestieri at [REDACTED] for more information.

Appendix G
 Researcher's Reflexive Journal

Dates	Entries
Fall 2022	I am researching Professional Development (PD) and how those experiences transfer to struggling readers, cognitive reading disorders, and dyslexia.
Spring 2023	I am working hard on Chapters 1-3 of my dissertation. I am adding and revising in my literature review.
Summer 2023	I am learning about defense and creating a PowerPoint for Chapters 1-3.
Fall 2023	I am still working hard and waiting for IRB approval. Permission was finally granted!
Spring 2024	It's time to identify a research site. Permission is granted by the Director of Curriculum and Instruction.

Appendix H
Audit Trail

April 11, 2023	Qualtrics® survey is created
June 30, 2023	Received IRB approval to commence research.
July 23, 2023	The Director of Curriculum and Instruction granted me access to send and advertise my research flier to recruit participants at this school setting.
August 9, 2023	I began acquiring signed consent forms from new participants.
August 14, 2023	Qualtrics® survey was published and ready to be sent to participants.
August 2023 – November 2023	Survey data were collected.

Appendix I

Table 2:
Themes and Subthemes

Codes	Themes	Subthemes
Limited Professional Development Limited Dyslexia Instruction Professional Development for primary grade levels Professional Development for differentiating instruction Professional Development for learning theory for differentiation Class on reading Class on behavior management Class on learning disabilities COVID-19 Pandemic hindered teachers from receiving professional development Grade level meetings Limited time management Program at LCA called reading plus Online reading training programs LCA hosted first family literacy night LETRS professional development Clinical research training on brain function	Professional Development Experience	Limited Professional Development Annual Professional Development COVID-19 Pandemic Influence on Professional Development
NEWSELA Orton-Gillingham Literacy skills Read-alouds Group Work Tone and inflection Assistive technology Audio books Text-to-speech Read and record text Social-Emotional strategies Peer assistance Positive Reinforcement Literature of notable individuals with cognitive reading disorders and dyslexia Word/Sentence modification Consider student input Reading comprehension strategies Scaffolding	Interventions	Assistive technology Group Work Positive Reinforcement Treat students equally Differentiation

<p>One-on-one teacher/student instruction Intensive group work Chunking Imagery Role Playing Kinesthetic / hands on activities Wiki sticks Simplified activities No independent work Beanie babies Sky writing strategy Spelling station with letter cubes Pacing instruction Oral discussions Data collection based off student informal observation Teacher adapted to students with dyslexia's inverted handwriting Align content specific vocabulary Encourage a habit of reading Annotate while reading Strategies to look for errors in reading patterns Context clues Differentiation Pre-assessment for phonological awareness AIMS Web</p>	Collaboration	Teacher Collaboration
<p>Resource Teacher Teacher Collaboration Reading Coach Family Collaboration</p>	Teacher Confidence	No Subtheme
<p>Not very confident</p> <p>More professional development More professional development targeting dyslexic characteristics More professional development for math teachers Invite trained professionals Needs to be demonstrated See more teacher input on professional development Follow-up professional development on how to present results to parents</p>	Suggestions for Improvement	No Subtheme
