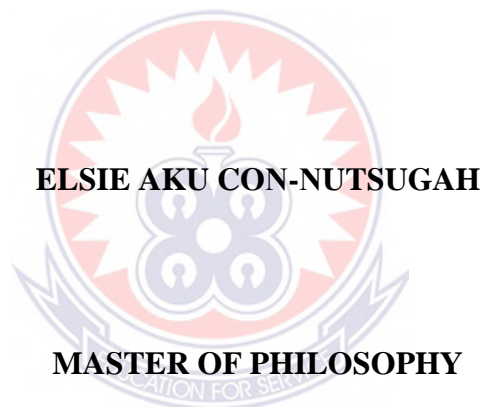


UNIVERSITY OF EDUCATION WINNEBA

**TEACHERS' KNOWLEDGE AND PRACTICES TO SUPPORT DYSLEXIC
ENGLISH LANGUAGE LEARNERS IN SEKONDI SUB-METRO
INCLUSIVE BASIC SCHOOLS**



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The logo of the University of Education, Winneba, is a circular emblem. It features a central sunburst or starburst design in white and red, surrounded by a blue and white pattern. The emblem is set against a light blue background.

**ELSIE AKU CON-NUTSUGAH
(8230060013)**

**A thesis in the Department of English Education,
Faculty of Foreign Languages Education, submitted to the School of
Graduate Studies in partial fulfillment
of the requirements for the award of the degree of
Master of Philosophy
(English Language)
in the University of Education, Winneba**

MARCH, 2025

DECLARATION

Student's Declaration

I **Elsie Aku Con-Nutsugah**, hereby declare that, except for scholarly works which have been duly acknowledged, this project is the result of my own original research and that no part of it has been presented for another award in this university or elsewhere.

Student's Signature:

Date:

Supervisor's Declaration

I hereby declare that the presentation of the project report was supervised in accordance with the guidelines on supervision of project works laid down by the University of Education, Winneba.

Supervisor's Name: Rev. Fr. Anthony Adawu, PhD.

Supervisor's Signature: 

Date: NOVEMBER 26, 2025

DEDICATION

This work is dedicated to my beloved parents, Alex shine Con-Nutsugah and Monica Tawiah Con-Nutsugah. Your determination and sacrifice have won me this success.



ACKNOWLEDGEMENTS

I am very grateful to God Almighty for His grace and mercy, which sustained me throughout this course and enabled the successful completion of this project.

I would like to express my heartfelt gratitude to all those who, in various ways, contributed to the successful completion of this work.

I am highly indebted to my supervisor, Rev. Fr. Anthony Adawu, PhD., who has guided me throughout the entire course and project. Thank you too Mark, for all the help you gave me when the going became tough.

I am sincerely grateful to all of you; I could not have reached this point without your support and prayers. May God abundantly bless you all.

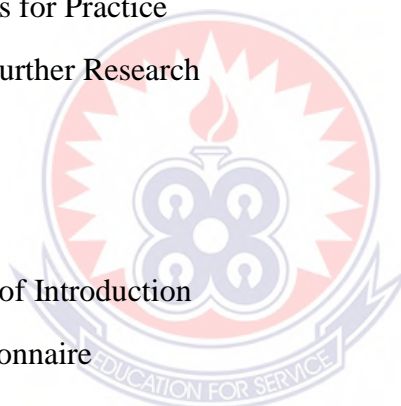


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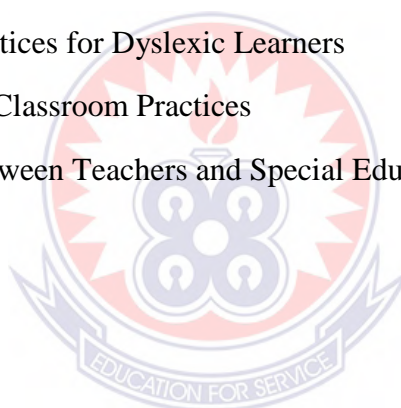
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ABSTRACT

Dyslexia, a neurodevelopmental disorder that affects reading, writing, and spelling, poses considerable challenges for English language learners (ELLs), especially in inclusive classrooms where teachers may not have the required knowledge or instructional strategies to effectively support these learners. Despite its prevalence, limited research in Ghana has explored teachers' knowledge and instructional practices for supporting dyslexic learners in inclusive classrooms. This study investigated teachers' understanding of dyslexia, the instructional strategies they employed, and their collaboration with special education experts in Sekondi Sub-Metro inclusive basic schools. Guided by the Causal Modelling Framework and the Zone of Proximal Development (ZPD), the study employed an explanatory sequential mixed methods design, integrating both quantitative and qualitative methods. In the first phase, a descriptive survey was conducted using questionnaires to gather quantitative data from 158 English language teachers selected from 30 basic inclusive schools through stratified random sampling. In the second phase, qualitative data were gathered through focus group interviews and classroom observations to gain deeper insights into teachers' practices and perspectives. Descriptive statistics were used to analyze quantitative data, while qualitative data were examined through thematic analysis. The findings indicate that although some teachers have a general awareness of dyslexia, persistent misconceptions and knowledge gaps result in inconsistent and often insufficient support for dyslexic learners. Most teachers primarily rely on traditional teaching methods with limited use of multisensory or differentiated approaches. Additionally, collaboration between teachers and special education experts remains limited due to insufficient training and institutional support. This study highlights the critical need for targeted professional development, enhanced collaboration between educators, and policy reforms to improve inclusive education. By addressing these gaps, the research contributes to the broader discourse on dyslexia, advocating for evidence-based teaching practices and structured support systems to enhance learning outcomes for dyslexic English language learners in Ghana.

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter focuses on the background of the study, problem statement and the purpose of the study. The research objectives and questions are provided to guide the investigation, along with the significance and delimitation of the study's scope, definition of terms and a summary of the subsequent chapters.

1.1 Background of the Study

The intricate interplay between genetics and environment has given rise to the rich tapestry of human diversity in our world. Individuals vary significantly in their physical, intellectual, emotional, and behavioral attributes. Similarly, within the confines of our language classrooms, we encounter a spectrum of learners categorized as "good" or "bad," "intelligent" or "dull," "motivated" or "unmotivated" (Horwitz, 2000). These differences may arise from various individual factors such as the child's personality, language aptitude, motivation, learning style, language anxiety, and language proficiency (Ellis & Shintani, 2014), or neurological conditions such as dyslexia that affects how a person is able to effectively process information (Shaywitz, 2003). If these differences are not acknowledged or addressed, it may jeopardize the educational goals of universal elementary education and equal opportunity, and also put these learners at risk of developing additional disorders such as depression, anxiety, and delinquency (Karande, 2008).

Dyslexia is a neurodevelopmental disorder which affects an individual's ability to read, write, and spell words. It is a common learning difficulty that is known to be more prevalent among English language learners (ELLs) (Shaywitz et al., 2008).

English language learners (ELLs) are learners who are learning English as an additional or a second language. According to Shaywitz and Shaywitz (2005), dyslexia affects how a person's brain processes language, regardless of his/her age, background, or intelligence level.

In the typical school setting, approximately one in every five seats in a classroom is occupied by a child with dyslexia (Lyon et al., 2003). Furthermore, Wolf (2008) highlights that an overwhelming 80% of learners diagnosed with specific learning disabilities in reading are actually dyslexic. In the Ghanaian context, Kyere-Nartey (2022) estimates that approximately 10% of the population has dyslexia, with about 4% experiencing severe forms. Despite this, public awareness of the condition remains notably low. These statistics underscore the critical need for educators to understand and address the unique learning needs of dyslexic learners within increasingly diverse classroom environments.

In Ghanaian schools, English language is taught as a mandatory subject and serves as the primary language of instruction. Learning English however, involves various aspects such as reading, writing, speaking, and listening which needs to be practiced regularly across all subject areas. Snowling and Hulme (2012) argue that dyslexia can be difficult to identify in English language learners, especially among those who are new to the English language, as many of the symptoms of dyslexia often overlap with the process of acquiring a new language.

Pontefract and Hardman (2005) and Kanu (1996) observed in their studies of classroom interaction in Kenya and Sierra Leone that many English language learners in mainstream African education systems often learn to spell through rote memorization and by repeating answers provided by teachers or peers. This rote

method of teaching English language does not only make the learning process boring and mechanical but frustrates both the teacher and the learners and prevents the learners from forming mental pictures of the words they spell. According to the International Dyslexia Association (2021), nearly all individuals with dyslexia experience difficulties with spelling and encounter significant challenges in learning. They further argue that despite receiving adequate and appropriate classroom instruction, people with dyslexia still struggle with spelling and writing.

The International Dyslexia Association (2021) further notes that although many individuals with dyslexia eventually learn to read reasonably well, they often continue to experience persistent difficulties with spelling and handwriting. As a result, they require targeted instruction, appropriate accommodations, task modifications, and understanding from educators and others who work with them. This underscores the necessity for every professional teacher to adapt their instructional approaches to meet the diverse needs of individual learners.

It is important to understand dyslexia among English language learners because it can also affect their ability to learn other subjects. English language learners face many challenges in the classroom and dyslexia can compound those challenges. Given the challenges faced by dyslexic learners, it is imperative to identify them early and provide necessary coping strategies to help them improve their performance in all subject areas, especially English language. Dalouso (2017), contends that the aid of information technology and counselling can help dyslexics potentially overcome their difficulties since traditional language teaching methods may not be effective for dyslexic learners.

In spite of their difficulties, most dyslexics are noted for their strengths in visual, creative, and problem-solving abilities (Alexander-Passe, 2016) and have been observed to develop resilience and exhibit post-traumatic growth, transforming their life experiences into positive outcomes (Alexander-Passe, 2016). The positive attributes associated with dyslexia highlight the importance of understanding and addressing it, particularly in educational settings. Teachers, in particular, are pivotal in recognizing and supporting learners with dyslexia. Research has highlighted the significant impact educators have on dyslexic learners' self-esteem, emphasizing the need for fair treatment and support from educators (Humphrey, 2001; Humphrey & Mullins, 2002). Thus, fostering a supportive environment within schools is essential for the success and well-being of dyslexic learners.

1.2 Statement of the Problem

Education does not only provide individuals with essential skills for daily life but also enhances their overall quality of life (Kennedy et al., 2012). However, specific learning difficulties, including dyslexia, present substantial obstacles to achieving this quality of life and the competencies associated with literacy and learning. Dyslexic learners who are also English language learners face compounded difficulties in reading, spelling, and comprehension, which often impede their academic success and participation in inclusive classrooms. Unfortunately, learners with dyslexia are often subjected to stigma, misconceptions, and discrimination within the educational system. In Ghana, societal attitudes toward dyslexia further exacerbate these challenges, with many learners being labeled as lazy, dull, or unintelligent (Agbenyega, 2007; Burden, 2008; Doikou-Avliidou, 2015). Such stigmatization negatively affects learners' self-esteem, motivation, and academic performance, while

also influencing teachers' attitudes and willingness to adopt effective support strategies.

Globally, early identification and intervention have been recognized as crucial for improving learning outcomes for children with dyslexia (International Dyslexia Association, 2017; Texas Education Agency, 2018). Thus, teachers' knowledge and understanding of dyslexia are central to this process, as they are often the first to observe the signs and provide appropriate instructional support (Woolfson & Brady, 2009). When teachers possess limited knowledge about dyslexia, misidentification and inappropriate instructional responses become common, which can further disadvantage these learners. Conversely, adequate teacher training can empower educators to use evidence-based strategies that enhance dyslexic learners' reading and writing skills, as seen in several global cases of individuals who overcame dyslexia through timely intervention and tailored support (Blake, 2018).

In Ghana, however, there appears to be limited information on the state of affairs regarding dyslexic English language learners within inclusive basic schools. This gap in knowledge persists because the majority of scholars and researchers have predominantly concentrated on inclusive education and special needs (Aboagye, 2018; Adera & Asimeng, 2011; Monico et al., 2018; Okyere, 2003; Vanderpuy, 2013). Others also primarily investigated teachers' knowledge and instructional practices for supporting dyslexic learners (Abraham, 2014; Acheampong et al., 2019), but paid little attention to the collaboration between general education teachers and special education experts, which is a crucial component in providing effective support for learners with dyslexia. This study sought to address this research gap by examining teachers' knowledge of dyslexia, exploring the instructional practices they employ in

their classrooms, and investigating the extent and nature of collaboration between general education teachers and special education experts in supporting dyslexic learners.

1.3 Purpose of the Study

The purpose of this research was to investigate teachers' knowledge and practices regarding dyslexia among English language learners (ELLs) in inclusive basic schools in the Sekondi Sub-Metro.

1.4 Research Objectives

This study investigates the following objectives:

1. Teachers' knowledge about dyslexia among English language learners in Sekondi Sub- Metro inclusive schools.
2. Instructional practices teachers adopt to create an inclusive educational environment to support dyslexic English language learners.
3. The extent of collaboration between general education teachers and special education experts in supporting dyslexic ELLs.

1.5 Research Questions

1. What knowledge do teachers have about dyslexia among English language learners in Sekondi Sub- Metro inclusive schools?
2. What instructional practices do English language teachers adopt to create an inclusive educational environment to support dyslexic English language learners?
3. What is the level of collaboration between general education teachers and special education experts in relation to dyslexia?

1.6 Significance of the Study

The fundamental goal of every research in English Language Teaching (ELT) is to address inequalities and injustices within specific areas of lived experience which aims to bring about transformative change to ensure freedom and equity, as highlighted by Madison (2012). ELT aims to develop proficiency in speaking, listening, reading, and writing among non-native speakers. However, these goals may be significantly undermined by dyslexia, a specific learning difficulty that affects learners' ability to read, spell and write. If dyslexic learners are not adequately supported, they may struggle to achieve proficiency in English, which can hinder their overall educational and professional development.

This study would therefore help gather information on teachers' knowledge, the instructional practices they currently adopt in supporting English language learners with dyslexia, and the collaboration between educators and special education experts. This exploration would highlight areas of improvement and also inform evaluation methods that can drive intervention initiatives and contribute to positive changes in how dyslexic learners are identified, assessed and supported, ultimately eradicating marginalization and stigmatization. The research would serve as a foundation for future researchers to build on in order to find more ways of improving teachers' knowledge and skills in identifying and supporting dyslexic English language learners which ultimately contributes to more equitable and effective education for all learners.

The underlying aim is to empower and emancipate dyslexic learners, with a critical purpose that encompasses democratization and the pursuit of social equality, as noted by Lopez-Gopar (2019). In essence, conducting this research not only investigates

and brings about findings but also contributes to a broader goal of positive change and social awareness within the educational landscape.

1.7 Delimitation of the Study

This study will be conducted in 30 inclusive basic schools in Sekondi Sub-Metro in the Western Region of Ghana. It will include teachers from kindergarten to primary 6. While the primary aim of this study is to explore teachers' knowledge and practices regarding dyslexia and the management of dyslexic learners, the range of factors involved is extensive and cannot be fully addressed in a single study. Therefore, the scope of this research is limited to examining only English language teachers' knowledge and practices concerning dyslexia, serving as a baseline investigation into how the needs of learners with dyslexia are supported in inclusive basic schools within the Sekondi Sub-Metro.

1.8 Definition of Terms

Dyslexia: “is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.” (International Dyslexia Association, 2002).

English language learners (ELLs): are learners from non-English-speaking backgrounds who have been evaluated by schools as not yet having adequate English proficiency to fully access instruction in the language. These learners are therefore entitled to educational support designed to improve their English skills (Durán, 2008).

Inclusive Education: entails “a general education classroom where” learners “with disabilities have the opportunity to fully and equally participate and interact with non-disabled peers in academic activities and curriculum” (Katz, 2012).

Neurodevelopmental Disorder: are defined as a group of conditions that arise during the developmental period and lead to deficits that cause impairments in functioning. “This category includes Intellectual Disability (ID); Communication Disorders; Autism Spectrum Disorder (ASD); Attention-Deficit/Hyperactivity Disorder (ADHD); Neurodevelopmental Motor Disorders, and Specific Learning Disorders” (Morris-Rosendahl & Crocq, 2020).

1.9 Organisation of the Study

The study is organised into five chapters. Chapter One presents the background of the research topic, the statement of the problem, the purpose of the study, the research objectives and questions, and the significance of the study. It concludes with the study’s scope, delimitations and a summary of the subsequent chapters. Chapter Two provides a review of the relevant literature, integrating both theoretical and conceptual frameworks, and examining empirical studies related to the topic. This chapter establishes connections between past and current research and concludes with a summary. Chapter Three details the research methodology, including the approach, design, setting, population, sample, and data collection instruments. It also outlines the procedures for data collection and analysis, strategies for ensuring research quality, ethical considerations, and study limitations. Chapter Four focuses on the analysis and discussion of the data. Finally, Chapter Five concludes the study by analyzing the findings and their implications, offering recommendations for

actionable steps, suggesting areas for further research, and highlighting the significance of the study's outcomes, followed by a comprehensive reference list.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

A comprehensive review of the literature concerning dyslexia is provided in this chapter. It covers definition from various perspectives including neurobiological, cognitive, and socio-cultural aspects. It delves into common misconceptions surrounding dyslexia, explores its impact on learners, and examines interventions tailored for dyslexic English language learners. By critically reviewing conceptual and theoretical frameworks alongside empirical studies, a connection between past research findings and the current research will be established. Ultimately, the chapter concludes with a summary encapsulating the key points discussed.

2.1 Conceptual Framework

The conceptual framework of this study serves as a roadmap, outlining the important concepts under examination based on relevant literature (Rocco & Plakhotnik, 2009) and clarifying the assumed relationships between these concepts (Anfara & Mertz, 2014). These concepts include teacher knowledge, instructional practices, school culture, and collaboration between teachers and special education experts, and are interrelated in their role in supporting dyslexic English language learners (ELLs).

Research indicates that dyslexia is a prevalent issue among ELLs, with some studies suggesting its incidence may be higher in this group than in monolingual populations (Neef et al., 2017; Jiménez et al., 2015). However, due to the complexities of language acquisition and the challenges of assessing and diagnosing dyslexia in multilingual contexts, dyslexia is often misunderstood and underdiagnosed (Geva & Massey-Garrison, 2013; McCardle et al., 2016). This shows how important teachers

knowledge is in recognizing and addressing dyslexia among ELLs. Thus, teacher knowledge directly influences instructional practices, as educators apply their understanding to implement strategies that accommodate dyslexic learners. Additionally, teacher knowledge fosters collaboration with special education experts, enabling the exchange of expertise to refine instructional approaches. Collaboration, on the other hand, enhances instructional practices by incorporating specialized techniques tailored to dyslexic ELLs' needs. Also, school culture plays an essential role in encouraging collaboration and shaping teacher knowledge. A supportive school culture promotes professional development and equips teachers with the needed skills to identify and support dyslexic learners appropriately. Moreover, an inclusive school culture fosters collaboration between teachers and special education professionals, ensuring that instructional practices align with best practices for dyslexia intervention.

The effectiveness of instructional practices and collaboration ultimately determines the learning outcomes of dyslexic ELLs. Effective instructional methods, reinforced by collaboration with experts, contribute to improved literacy and comprehension skills among students. These improved outcomes, in turn, reinforce the importance of continuous teacher learning, instructional adjustments, and a strong school culture that prioritizes the needs of dyslexic ELLs.

As the conceptual framework evolves, it becomes clear that these relationships are dynamic and reciprocal. Teacher knowledge, instructional practices, school culture, and collaboration influence one another in a continuous cycle that shapes the support system for dyslexic ELLs. This framework therefore serves as a theoretical lens for

investigating teachers' knowledge and practices regarding dyslexia among ELLs in the Sekondi Sub Metro.

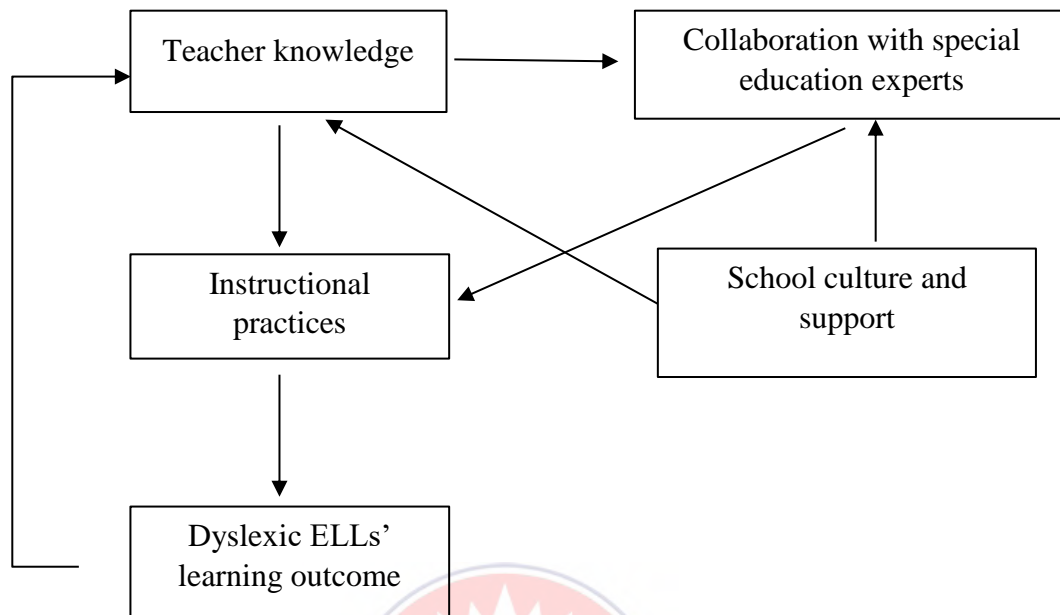


Figure 1: A conceptual map showing the relationship between the different concepts.

Figure 1 above shows the relationship between the different elements. Thus, at the core of this framework is teacher knowledge, which serves as the foundation for identifying dyslexic learners and understanding their unique literacy challenges. When teachers possess adequate knowledge of dyslexia, they are better positioned to recognize early indicators, avoid misconceptions, and differentiate instruction to support learners' reading and writing development.

Teacher knowledge has a direct influence on instructional practices. Educators apply what they know to adopt evidence-based approaches such as multisensory teaching, phonics instruction, tailored scaffolding, and the use of technological tools. Where knowledge is limited, instructional practices may be ineffective or even detrimental to dyslexic learners.

Additionally, teachers' knowledge contributes to improved collaboration with special education experts. When teachers are aware of dyslexia as a specific learning difficulty and understand their limitations, they are more likely to consult specialists for assessments, individualized support strategies, and learner-specific interventions. In turn, collaboration enriches teachers' classroom practices by introducing specialized techniques and promoting shared responsibility for learner success.

In shaping teacher knowledge and collaboration, the school culture plays a very important role. A school environment that values inclusion, continuous professional development, and early intervention encourages teachers to engage more deeply in learning about dyslexia and to seek collaborative support. Policies, administrative support, and availability of resources all determine the extent to which teachers can successfully apply instructional interventions and collaborate with experts.

Consequently, these elements, teacher knowledge, instructional practices, collaboration, and school culture, collectively contribute to learning outcomes for dyslexic ELLs. Thus, effective instruction reinforced through expert collaboration and supportive school structures leads to improvements in reading fluency, comprehension, self-confidence, and overall academic engagement. Positive learner outcomes, in turn, reinforce the need for sustained teacher learning, evidence-based pedagogy, and institutional support systems.

This conceptual map therefore guides the investigation of teachers' knowledge and instructional practices, and examines how collaboration and school structures affect support for dyslexic ELLs in Sekondi Sub-Metro. It provides a theoretical basis for interpreting findings and formulating recommendations aimed at strengthening inclusive literacy instruction in Ghanaian basic schools.

2.2 Theoretical Framework

A theory is an understandable explanation of a particular aspect of the natural world; a structured system of knowledge that is accepted and can be applied in different contexts to account for specific phenomena. It represents a concept that has not yet been definitively proven. Over the years, many theories have emerged on dyslexia and how best it can be identified and managed.

This study examined theories such as the Causal Modelling Framework and the Zone of Proximal Development (ZPD).

2.2.1 Causal Modelling Framework

In examining the issue of dyslexia among English language learners, the Causal Modelling Framework is worth looking at. This model developed by Uta Frith in 1999 looks at dyslexia in relation to three factors, that is, behavioural, cognitive and biological. However, in the year 2001, the theory was revised to include environmental factors. The causal framework is valuable when analysing the various causes and symptoms of dyslexia and can be developed for individual experiences.

Frith (1999) posits that mental processes, referred to as the cognitive level, are related to memory, perception, and attention, and these cognitive aspects are also connected to behaviour. According to Frith (1999), the biological level involves biochemical, genetic, and neurophysiological explanations. Moreover, these behavioural, cognitive, and biological factors interact with environmental influences.

According to Frith (1999), environmental factors including the environment we have been exposed to for instance socio economic status, cultural attitudes, and teaching methods have to be critically considered when dealing with dyslexia since the

behavioural perspective can be linked to the learner's difficulty in reading and writing. Thus, the severity and the nature of dyslexic problems may not only result from a literacy problem but from the nature of interaction with other people in the environment and complexity in writing system and effectiveness of teaching methods. For example, a dyslexic learner in an inclusive school environment may struggle with literacy and find it difficult to develop reading and writing skills. Also, if the teacher is not aware of the issue of dyslexia and does not have adequate training on the correct teaching methods, he may use wrong teaching methods which may result in further compounding the issue. It is important to note that all four levels of the framework hold equal significance and are meant to complement one another.

The Causal Modelling Framework therefore helps to identify the primary and secondary causes of dyslexia. Primary causes, as discussed, are the direct factors contributing to reading difficulties, such as impairments in phonological processing. Research has consistently shown that dyslexic learners struggle with phonological awareness, involving recognizing and manipulating sounds in words (Bradley & Bryant, 1983). This phonological deficit can be traced back to neurological differences in how the brain processes language, often evident in the "underactivation" of the left hemisphere regions responsible for reading (Shaywitz et al., 2002). Secondary causes include factors that worsen the primary deficits. For example, reduced exposure to print and less reading practice due to difficulties in reading can further impair the development of reading skills (Stanovich, 1986). Additionally, socio-emotional factors such as low self-esteem and anxiety about reading can also negatively impact a dyslexic's learning experience (Humphrey & Mullins, 2002).

The Causal Modelling Framework therefore helps in identifying the causes and mapping out the relationships between them. By understanding these relationships, educators can develop comprehensive intervention plans. For instance, recognizing that a phonological deficit leads to poor decoding skills, which in turn affects reading fluency and comprehension, allows for targeted interventions that address each stage of this causal chain.

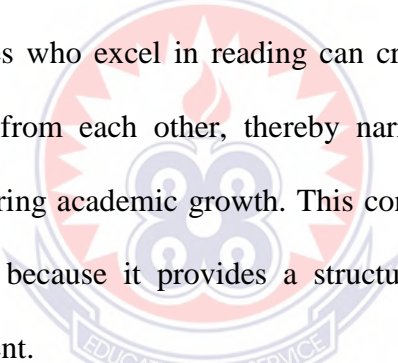
Interventions for dyslexic learners within the Causal Modelling Framework often begin with phonological training. Thus, a dyslexic learner's reading skills can be greatly improved with clear instruction in phonemic awareness. Also, programs that focus on teaching the relationship between sounds and letters have been shown to be effective (Moats & Tolman, 2004). These programs provide clear and structured instruction in phonological awareness, decoding, and phonics, which are crucial for building a strong foundation in reading. Beyond phonological training, interventions also need to address the secondary causes of reading difficulties. Providing dyslexic learners with increased exposure to print and opportunities for reading practice can help lessen the adverse effects of limited reading experience. Again, assistive technologies, including text-to-speech software and audiobooks, can also support dyslexic learners by allowing them to access text in a more manageable way (Raskind & Higgins, 1995).

Moreover, addressing socio-emotional factors is essential in the causal modelling framework. Teachers are therefore urged to create an understanding and supportive classroom environment to help dyslexic learners build self-esteem and reduce anxiety related to reading. Again, positive reinforcement, regular feedback, and a focus on

individual progress rather than comparison with peers can contribute to a more positive learning experience (Humphrey, 2003).

2.2.2 Zone of Proximal Development (ZPD)

Zone of Proximal Development was developed by Lev Semenovich Vygotsky during the 1920s. He defined the “concept as the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with” skilled adults or high achieving peer’s problem solving (Woolfson & Brady, 2009). Thus, the range of tasks that a learner can perform with the help and guidance of others but cannot yet accomplish independently. For instance, pairing learners with classmates who excel in reading can create a supportive environment where they can learn from each other, thereby narrowing the Zone of Proximal Development and fostering academic growth. This concept is particularly relevant to learners with dyslexia because it provides a structured approach to support their learning and development.



Understanding a child's current abilities is the first step in applying the ZPD framework to learners with dyslexia. This involves assessing what a child can do independently, which provides a baseline for their current skills. The ZPD highlights the tasks learners can accomplish when provided with appropriate support (Vygotsky & Cole, 1978). This tailored approach is especially important for dyslexic learners who may struggle with standard methods of instruction. By knowing a child's Zone of Proximal Development, educators can design instructional practices that are both challenging and achievable with guidance, thereby creating an effective environment for learning. It is therefore paramount for general education teachers to collaborate

with special education experts to share ideas and work together to support dyslexic learners.

Another key component of the ZPD is Scaffolding, which involves providing structured support to help the child progress. This support can include breaking tasks into smaller, more manageable parts, providing visual aids, or using multisensory teaching techniques (Wood et al., 1976). As the child becomes more proficient, the support is gradually withdrawn, promoting independent learning (Clark, 2018). This method of guided assistance is particularly beneficial for dyslexic learners, as it allows them to build confidence and competence incrementally.

Furthermore, multisensory instruction is a highly effective strategy within the ZPD framework for dyslexic learners. This approach engages multiple senses such as sight, sound and touch to help dyslexic learners grasp reading and writing skills. For instance, using letter tiles, sandpaper letters, or apps that combine visual and auditory elements can make learning more accessible and engaging (Birsh, 2018). Such methods enhance memory and retention by reinforcing learning through various sensory pathways (Shams & Seitz, 2008).

Explicit phonics instruction is another important strategy in ZPD. Direct teaching of phonics helps dyslexic learners understand the relationship between letters and sounds, which is often a primary challenge (Snowling & Hulme, 2012). A systematic, explicit phonics program can be delivered within the ZPD by starting with simple concepts and gradually moving to more complex ones as the child's skills develop (National Reading Panel (US), 2000). This step-by-step approach ensures that learners are not overwhelmed and can build on their knowledge progressively.

In addition, assistive technology is very important in creating a supportive environment for dyslexic learners within their ZPD. Resources like audiobooks, text-to-speech software and specialized reading applications can assist reading comprehension and fluency (Raskind & Higgins, 1995). These tools enable dyslexic learners to access content and complete tasks within their ZPD, promoting greater independence over time (Rose & Meyer, 2005). Interactive and collaborative learning strategies can also further enhance the educational experience for dyslexic learners. Group work and peer-assisted learning provide social and educational support, allowing peers to model strategies and offer encouragement within the child's ZPD (Gillies, 2006). Interactive activities such as games, role-playing, and storytelling make learning more engaging and less intimidating, providing opportunities for success within the ZPD (Fisher et al., 2016).

Another important and effective component within the ZPD framework is regular feedback and positive reinforcement. Frequent feedback helps learners recognize their progress and areas needing improvement, while positive reinforcement builds confidence and motivation (Hattie & Timperley, 2007). By providing specific and constructive feedback, dyslexic learners will be able to adjust their strategies and continue progressing within their ZPD (Brookhart, 2017).

In order to implement the ZPD framework for dyslexic learners, teachers should collaborate with stakeholders like special education experts in identifying and working within the ZPD, utilizing specialized teaching practices and tools (Moats, 2000). Individualized Education Plans (IEPs) in the ZPD framework helps outline specific supports and instructional practices tailored to the learners' needs (Smith et al., 2014). Additionally, parental involvement is crucial because they can reinforce

learning at home by engaging in activities that align with the child's ZPD and use recommended strategies and tools.

2.3 Review of Key Concepts

2.3.1 Conceptualizing Dyslexia

According to Everatt and Reid (2009), there is no universally accepted definition of dyslexia although research on dyslexia has made significant strides over the last two decades. There have been various definitions of dyslexia, most of which focuses on comparing learners' reading skills to their overall linguistic and cognitive abilities (Zaretsky & Velleman, 2011). Scholars like Rief and Stern (2010), contends that the word “dyslexia” etymologically combines two Greek words, "dys," meaning difficult, with "lexicon," referring to language or words, indicating a struggle with language-based tasks such as phonological awareness and word decoding.

Two main definitions of dyslexia were delineated in 1968 by the World Federation of Neurology (Miles, 1995). The first, “specific developmental dyslexia”, highlights the role of instruction and socio-cultural factors in reading difficulties while the second, simply termed “dyslexia”, focuses on the observed language skill deficits despite conventional classroom experiences. I believe that such varying definitions have contributed to the confusion and misconceptions observed among teachers in this study, particularly within the Ghanaian context where dyslexia lacks a standardized operational definition in schools

2.3.2 Neurobiological Basis

Dyslexia is often conceptualized as “a neurobiological” disorder, “involving differences in brain structure and function that” impact “reading-related” processes (Shaywitz & Shaywitz, 2005) such as “difficulties with accurate and/or fluent word

recognition and by poor spelling and decoding abilities” (Shaywitz, 2003; International Dyslexia Association, 2002). Similarly, Frith (1999) adds that dyslexia is a neurological condition with behavioral manifestations influenced by both neurological origins and cultural factors.

Again, dyslexia has been described by the British Dyslexia Association (2021) as a specific learning disability affecting reading, writing, spelling, and numerical work. They further contend that dyslexia is marked by challenges in phonological processing, which refers to the ability to recognize and manipulate sounds in spoken language. In the same vein, Lyon et al. (2003), argue that dyslexia is a neurobiological-specific learning disability, marked by “difficulties in word recognition, spelling, and decoding” primarily stemming from phonological processing deficits.

Furthermore, the International Dyslexia Association (IDA, 2002) provides a widely accepted definition of dyslexia, emphasizing its specific learning disability of neurological origin. The IDA (2002) asserts that dyslexia is characterized by difficulties in “accurate and/or fluent word recognition”, as well as “poor spelling and decoding” skills. These challenges generally arise from a deficit in the “phonological component of language”, which is often “unexpected” given other “cognitive abilities” and adequate classroom instruction. Secondary effects may include problems with reading comprehension and reduced reading experience, which can impede vocabulary development and background knowledge.

Advancements in neuroscience, particularly through Magnetic Resonance Imaging (MRI), have made dyslexia's neurological underpinnings visible, highlighting “differences in brain” functioning “between dyslexic and non-dyslexic” individuals (Swanson et al., 2013; Mather & Wendling, 2012).

Some other common characteristics of dyslexia as indicated by the National Center on Improving Literacy (2021) include difficulty with phonemic awareness, phonics, fluency, vocabulary, and comprehension. Dyslexia has also been defined as “a specific learning disability” that “is characterized by difficulties with accurate and fluent word recognition,” poor decoding abilities, and problems with spelling (American Psychiatric Association, 2013). According to Shaywitz and Shaywitz (2005), “dyslexia is not related to intelligence” and it can occur in learners, regardless of age, background and level of intelligence.

2.3.3 Cognitive and Linguistic Perspectives

In addition to neurobiological differences, dyslexia may be associated with specific cognitive and linguistic deficits. According to Snowling (2008), dyslexia is rooted in deficits “in phonological processing,” thus, “the ability to identify and manipulate the sounds” within “words”. Dyslexic individuals may struggle to distinguish between similar sounds (example, /b/ and /d/), make connections between letters and their corresponding sounds (Snowling, 2014), and manipulate sounds to form new words (Wolf, 2008). This impaired phonological awareness consequently hinders their ability to decode unfamiliar words, leading to slow and labored reading.

Furthermore, dyslexia impacts morphology, the study of how words are formed through prefixes, suffixes, and root words. Dyslexic individuals might struggle to identify morphemes and understand how they contribute to word meaning (Casalis et

al., 2004). This can make it difficult for them to grasp complex vocabulary and decode words with multiple morphemes.

Also, dyslexia may impact syntax, the way words are arranged in sentences to convey meaning. While dyslexic individuals may understand individual words, they might find it challenging to grasp the larger structure of a sentence, leading to difficulties with comprehension (Shankweiler & Crain, 1986).

It is important to note that dyslexia manifests differently in each individual. Some may primarily have phonological processing challenges, while others might experience stronger difficulties with morphology or syntax. Additionally, dyslexia often co-occurs with other learning disabilities, such as specific language impairment (SLI), highlighting the intricate interaction between cognitive and linguistic factors (Landerl & Moll, 2010).

Understanding dyslexia through both cognitive and linguistic lenses is crucial for developing effective interventions. By addressing specific phonological processing deficits, educators can equip individuals with the tools to decode words more efficiently. Additionally, focusing on morphology and syntax can improve vocabulary development and sentence comprehension.

2.3.4 Socio-Cultural Perspectives

Frith (1999) contends that while dyslexia originates neurologically and presents specific behavioural signs, cultural influences are also integral to its understanding. Thus, dyslexia definition is not limited to its neurobiological and cognitive aspects; it also includes socio-cultural factors. The experience of dyslexia may differ across cultural and linguistic contexts. In defining dyslexia, it is important to consider its

socio-cultural diversity. As Rose (2009) rightly points out, cultural beliefs, educational practices, and societal attitudes towards literacy and language influence the identification and management of dyslexia.

Other scholars argue that the identification, labelling, and interventions related to dyslexia have been influenced by powerful social forces throughout history, stemming from political, cultural, and social pressures (Armstrong & Squires, 2015; Hughes, 2010). Societal attitudes towards dyslexia vary widely, influenced by cultural beliefs, historical context, and media portrayals (Rose, 2009). While some societies embrace neurodiversity and advocate for inclusive education, others stigmatize dyslexia, viewing it as a sign of incompetence or laziness (Riddick, 2010). In societies that emphasize literacy, individuals who deviate from established norms may be marginalized or labelled as disabled, as seen in the case of learners with dyslexia (Oliver, 2018).

Additionally, cultural factors influence how dyslexia is perceived and experienced within different communities (Riddick, 2010). In some cultures, dyslexia may be unrecognized or misunderstood, leading to delayed diagnosis and intervention (Rose, 2009). As a result, structural and cultural biases surrounding dyslexia often focus on challenges rather than differences, leading to the alienation and reduced self-esteem of affected individuals (Burden, 2008).

Defining dyslexia involves grappling with its complex interplay of neurobiological, cognitive, linguistic, and socio-cultural factors. By acknowledging the heterogeneity of dyslexia and considering its diverse manifestations, we can develop more inclusive and personalized approaches to identification, intervention, and support. Also,

understanding the neurological basis of dyslexia is essential for implementing effective teaching strategies (Lyon et al., 2003).

A range of factors including teacher training, beliefs and attitudes about dyslexia, language learning, and cultural and linguistic backgrounds can influence teachers' knowledge and practices (López & Greenfield, 2011; Vaughn et al., 2013; Castro-Olivo et al., 2016). Other researchers suggest that teachers may have limited knowledge and understanding of dyslexia and its impact on language learning, and as a result, they may rely on ineffective or inappropriate instructional practices (Neef et al., 2017; Jiménez et al., 2015).

2.3.5 Misconceptions about Dyslexia

Misconceptions surrounding dyslexia still exist among teachers, despite having knowledge of basic dyslexia concepts (Acheampong et al., 2019). These misconceptions can hinder understanding and support for individuals with this condition, perpetuating stigma and misinformation that impact how dyslexia is perceived and managed. Addressing these misconceptions can lead society to better support individuals with dyslexia and promote their success.

One common misconception about dyslexia is that it primarily involves seeing words and letters in reverse. However, research suggests that word reversal is common among early readers and writers and is not directly correlated with dyslexia (Adams, 1990; Hudson et al., 2007).

Another misconception is that dyslexia is indicative of low intelligence. This belief stems from the misunderstanding of dyslexia as solely a reading disorder, overlooking the diverse cognitive abilities of individuals with dyslexia. Research indicates that

dyslexia is not linked to intelligence. Rather, it is a specific difficulty with language processing that can affect an individual's ability to read, spell, and write (Shaywitz, 2003). Dyslexics are often good with problem-solving, creativity, and visual thinking (Fawcett & Nicolson, 2008). Thus, equating dyslexia with low intelligence is erroneous and overlooks the unique talents and capabilities of individuals with this condition.

Others believe that dyslexia is something that individuals can simply outgrow as they get older. Although it is true that some individuals may develop compensatory strategies and improve their reading skills over time, dyslexia itself is a lifelong condition with persistent problems in language processing and reading (Snowling, 2008). Without appropriate intervention and support, dyslexics may continue to experience challenges in various aspects of their lives, including academic achievement and professional success.

Therefore, dismissing dyslexia as something that can be outgrown neglects the ongoing needs of individuals with this condition and undermines the importance of early intervention and targeted support.

Another common misconception perpetuated by educators, parents, and even individuals with dyslexia themselves is the notion that dyslexia is caused by poor teaching or lack of effort. This belief places blame on the individual or their instructors rather than recognizing dyslexia as a neurobiological condition with underlying differences in brain structure and function (Gabrieli, 2009). According to Olson (2002), dyslexia is not simply poor reading ability resulting from inadequate education or home environment. Rather, dyslexia refers to a specific condition where individuals face significant challenges in learning to read effectively, even with

sufficient instruction. These individuals, termed 'dyslexic,' struggle with reading despite receiving appropriate educational support.

Effective teaching methods and support can mitigate the impact of dyslexia, but they do not eradicate the condition itself. Research suggests that dyslexia has a strong genetic component, with differences in brain connectivity and activation patterns observed in individuals with dyslexia compared to typical readers (Shaywitz et al., 2003). Attributing dyslexia to external factors such as teaching quality or effort oversimplifies the complex nature of this condition and undermines the need for targeted interventions tailored to individual needs.

I agree with these authors, as teachers in this study also demonstrated such misconceptions, often attributing learners' reading difficulties to laziness, slow learning, or lack of seriousness.

From the above discussion, it is worthy to note that addressing misconceptions, providing appropriate support and resources, and promoting inclusive educational practices are essential steps in empowering learners with dyslexia to reach their full potential.

2.3.6 Characteristics of Dyslexia

Dyslexia impacts an individual's reading and writing abilities, leading to challenges with spelling, vocabulary development, and overall learning (Roitsch & Watson, 2019). The severity of dyslexia varies among individuals, with symptoms ranging from mild to severe and often including poor decoding, fluency, spelling, and reading comprehension (Lyon et al., 2003). Poor decoding describes the struggle to correctly read or sound out words that are not already familiar, which may result from delayed

speech development and phonological awareness issues (Roitsch & Watson, 2019). Similarly, poor fluency manifests as a slow reading rate and can affect reading comprehension due to challenges in speed, accuracy, expression, and comprehension (Roitsch & Watson, 2019).

Additionally, dyslexic individuals commonly struggle with spelling, attributed to difficulties in phonological processing and memory, which persist throughout life despite improvement in reading skills (Roitsch & Watson, 2019). Poor reading comprehension, often observed in moderate and severe dyslexia, stems from inadequate decoding and fluency, hindering the ability to understand written text despite satisfactory oral language skills (Roitsch & Watson, 2019).

These primary characteristics of dyslexia impact various areas of learning, leading to difficulties in following multi-step instructions, sequencing, remembering names and terms, understanding mathematical word problems, and expressing ideas coherently (Roitsch & Watson, 2019). Dyslexic individuals may also struggle with reading, writing, and solving mathematics, as well as integrating and organizing concepts and skills (Roitsch & Watson, 2019).

Moreover, the International Dyslexia Association's Dyslexia Handbook (2019) outlines common characteristics of dyslexia, including difficulties in oral language, word retrieval, reading, and written language. These traits typically continue over time and disrupt learning, influencing phonological awareness, phonemic awareness, phonological processing, and reading comprehension. (International Dyslexia Association, 2019).

Other symptoms associated with dyslexia include weak memory, distractibility, inconsistent schoolwork, and downward trends in achievement test scores (International Dyslexia Association, 2019).

I believe that recognizing these characteristics is crucial as the focus group data showed teachers mainly identify dyslexia through observable challenges in reading fluency and spelling, and overlook other cognitive difficulties such as sequencing or working memory deficits. It is worth noting that dyslexia presents a complex array of challenges that affect various aspects of learning and development.

2.3.7 Impact of Dyslexia on Learners

Dyslexia has significant impacts on learners in various areas. Research shows that learners with dyslexia face challenges beyond academic struggles, including social-emotional difficulties, negative attitudes from peers and teachers, and bullying.

According to Humphrey (2001), peer bullying is a significant issue for learners with dyslexia, leading to reduced self-esteem and feelings of exclusion. In addition, learners with dyslexia tend to display timid behavior, seek excessive reassurance, and experience low self-esteem when it comes to reading (Humphrey, 2001). Unfair treatment by teachers, such as labelling learners as lazy or incompetent, further worsens the challenges faced by learners with dyslexia (Burden, 2008).

Also, dyslexic learners often struggle with literacy acquisition which leads to social-emotional problems that hinder academic success (Cameron, 2016). These difficulties heighten the risk of involvement in criminal behavior and increase susceptibility to health issues, substance abuse, and mental health problems later in life (Siddique & Ventista, 2018).

Furthermore, teachers frequently lack sufficient training and resources to support learners with dyslexia effectively, resulting in inadequate support for these learners (Acheampong et al., 2019). Nevertheless, appropriate professional development can significantly enhance teachers' ability to meet the needs of dyslexic learners (Scott-Beale, 2016). In addition, dyslexia involves particular learning challenges, such as difficulties with phonological processing, word recognition, and spelling (Grigorenko et al., 2019). However, dyslexic learners may also experience difficulties with mathematical operations, memory recall, and processing information, which can impact their overall academic performance (Rief & Stern, 2010; Almahrag, 2021).

Mader (2017) postulates that inclusion of dyslexic learners in general education classrooms is essential, but additional instructional assistance is often necessary for these learners to thrive. It is therefore crucial to recognize that not all learners who struggle with reading or spelling have dyslexia, and there are various indicators beyond academic performance, such as inconsistent performance, difficulty with word storage, sequencing, and processing information, that suggest the possibility of dyslexia (Ministry of Education, New Zealand, 2008).

2.3.8 Interventions for Dyslexic English Language Learners

Dyslexia is a lifelong condition that cannot be cured but can be managed with appropriate support. It may be minimized, if not totally overcome by applying an effective teaching strategy (Shaywitz, 2003). Dyslexic English language learners (ELLs) face unique challenges that necessitate tailored interventions. These learners must navigate the complexities of learning a new language while simultaneously coping with the difficulties associated with dyslexia. For ELLs, this often results in compounded difficulties in phonological processing, reading comprehension, and

written expression. Therefore, effective interventions must address both the language learning needs and the specific learning disability.

Many strategies have been used over the years by educators in the quest to find a solution to learning difficulties among learners. Among these strategies is the multisensory teaching strategy which is based on the constant and simultaneous use of the visual, auditory, kinesthetic (motor memory), and tactile channels in the teaching of reading, spelling and writing. A learner learns a shape of a letter, a word or a sentence (visual perceptual skills are required), its sound (auditory perceptual skills are required); how the speech organs or the hand in writing physically feels during its production (motor skills are required). It is also called a VAKT – Visual Auditory Kinesthetic Tactile Approach. This technique was developed by Grace Fernald and was used in a “clinic school at the University of California, Los Angeles” (Gearheart, 1980). It was advocated that the greater the deficiencies in motor-sensory functions and the child’s learning, the more intensive and diversified the remedial teaching programme should be. The VAKT approach is based on the assumption that the more perceptual channels are open, the more possibilities there are for the learner to associate and integrate the visual – graphemic and auditory – phonemic properties of words and their meaning as well (Nijakowska, 2020). In this technique, the teacher writes a word on a card or on the chalkboard in large letters and shows the word to the learner while he names the word. The teacher then asks the learner to say the word after him and traces the word with two fingers as the learner repeats the word. The learner is then made to trace the word with his fingers as he pronounces each syllable. He repeats this until he feels ready to write the word without copying it. If the learner gets the spelling right, he can then use it in different activities to enhance his spelling and writing skills.

Ehri et al. (2001) also highlight phonological awareness as an effective intervention, which involves teaching learners to recognize and manipulate the individual sounds within words. This type of training is essential for reading development and is often an area of difficulty for learners with dyslexia. Similarly, Rivers (1974) described the phonics approach, which entails learning the forty (40) distinct sounds associated with the twenty-six (26) letters of the alphabet and understanding when to apply each phonetic sound correctly. For ELLs especially, this training should be adapted to include phonemic awareness in both the native language and English. Techniques such as rhyming, segmentation, and blending exercises can be beneficial. Research indicates that early and intensive phonological awareness training can significantly improve reading outcomes for dyslexic ELLs (Snowling, 2008).

Knowledge of vocabulary is also an essential component of reading comprehension. Dyslexic ELLs benefit from explicit, systematic vocabulary instruction that includes direct teaching of word meanings, usage, and morphology (the study of word forms). Techniques such as pre-teaching vocabulary before reading, using graphic organizers, and providing repeated exposure to new words in various contexts are effective (August et al., 2005). Additionally, reading comprehension strategies can be employed to help dyslexic ELLs who often struggle with reading comprehension due to difficulties in decoding and limited vocabulary. Interventions should target the teaching of specific comprehension strategies, including summarizing, predicting, and questioning. Visual aids, story maps, and guided reading sessions can support comprehension development (Vaughn et al., 2013).

Furthermore, assistive technology can be instrumental in supporting dyslexic ELLs. Tools like audiobooks, text-to-speech software, and language learning apps can greatly help bridge the gap between their decoding skills and comprehension abilities. Additionally, speech recognition software can assist with writing and spelling tasks (Macaruso & Walker, 2008). Understanding the cultural and linguistic backgrounds of ELLs is essential for effective intervention. Culturally responsive teaching entails acknowledging and integrating learners' cultural backgrounds into every aspect of the learning process. This method makes learning more relevant and engaging for learners and also helps in building a supportive learning environment (Gay, 2018).

It is important to note that successful implementation of these interventions requires collaboration among educators, specialists, and families. Teachers should receive professional development to understand the intersection of dyslexia and second language acquisition while schools also provide resources and support systems, such as reading specialists and bilingual education programs, to address the diverse needs of dyslexic ELLs (Linan-Thompson et al., 2006). The effectiveness of interventions can be measured through consistent progress monitoring. Using formative assessments, teachers can adjust instruction based on individual learner needs. Additionally, creating individualized education plans (IEPs) can offer tailored support for dyslexic ELLs (Wagner et al., 1999).

I agree with the above interventions, as teachers in this study frequently used multisensory techniques such as clapping, tapping, phonics apps, and flashcards. Addressing the needs of dyslexic English language learners requires a multifaceted approach that integrates evidence-based reading interventions with culturally and

linguistically responsive teaching practices to help dyslexic learners overcome their challenges and succeed academically

2.4 Teachers' Knowledge about Dyslexia

Teachers' knowledge and preparedness regarding dyslexia is important for ensuring dyslexic learners' educational success, especially in inclusive classrooms. These learners have specific educational needs that necessitate tailored approaches from their teachers. One aspect of teachers' knowledge of dyslexia is their perceptions of the disorder. Teachers' perceptions can influence how they teach English language learners with dyslexia. Some studies have revealed that teachers do not have a clear understanding of dyslexia and how it affects language learning (Kluth & deBettencourt, 2003; Snowling, 2013). For example, Kluth and deBettencourt (2003), and Horowitz et al. (2017) reported that some teachers believed dyslexia resulted from laziness or a lack of effort. Other teachers believed that English language learners with dyslexia would eventually overcome their difficulties with language learning. Some teachers also assume that a learner's struggles with reading and writing are due to their limited proficiency in the English language rather than an underlying learning difficulty. These assumption and misinformation may lead to delayed identification of dyslexia which can have long-term consequences on the learner's academic and emotional well-being (Siegel & Smythe, 2004).

Despite well-documented evidence supporting phonologically based interventions for learners with dyslexia (Snowling & Hulme, 2011), many teachers lack familiarity with appropriate terminology related to dyslexia and evidence-based reading instruction methods, as argued by Washburn et al. (2011) and Gwernan-Jones and Burden (2010). They express a need for more training in dyslexia-related areas to

improve their teaching practices (Kantor, 2011). Aladwani and Shaye (2012) and Worthy et al. (2016) opine that existing pre-service and in-service training programs do not adequately equip teachers with the necessary skills and knowledge to identify dyslexia indicators or effectively teach learners with dyslexia. Training often emphasizes theoretical knowledge over practical strategies for teaching dyslexic learners, leading to a gap in teachers' ability to address the diverse needs of their learners (Sharma et al., 2012), resulting in reluctance, discomfort, or uncertainty when interacting with these learners (Chiner & Cardona, 2013; Washburn et al., 2011).

Bridging this gap requires comprehensive professional development that equips teachers with practical strategies for instructing learners with dyslexia (Guskey & Yoon, 2009; Acheampong et al., 2019). Such professional development can positively impact teachers' attitudes and practices and improve learner outcomes (Gallardo et al., 2015; McCray & McHatton, 2011). Thus, teachers who receive training on dyslexia are better equipped to identify struggling learners and apply research-based instructional practices that address individual learning differences (Mattson & Roll-Pettersson, 2007; Washburn et al., 2011; Lambe & Bones, 2008; Sharma et al., 2012). I agree with the assertion that inadequate teacher training is a major barrier, as many teachers in this study demonstrated partial knowledge and confusion about dyslexia, confirming the need for targeted training programs.

2.5 Dyslexia Instructional Practices

Teachers' instructional practices towards learners with dyslexia can significantly impact academic outcomes. Appropriate instructional practices, such as multisensory and explicit instruction can improve dyslexic learners' reading skills. Teachers' practices for supporting English language learners with dyslexia are also important in

facilitating language learning. Studies have shown that English language learners with dyslexia benefit from instruction in phonological awareness and phonics (Foorman et al., 2012; Geva et al., 2017).

The cognitive theory of dyslexia posits that dyslexic individuals struggle with phonological processing, which involves the recognition and manipulation of sounds in spoken language (Snowling, 2013). According to this theory, the primary deficit in dyslexia is a difficulty with the phonological representation of language which affects reading and spelling abilities.

Kluth and deBettencourt (2003) note that teachers do not consistently offer clear instruction in phonics and phonological awareness for English language learners with dyslexia. They also reported that some teachers believed that English language learners with dyslexia would benefit from more reading practice rather than explicit instruction in phonics. Furthermore, Kavale et al. (2011) argue that teachers' practices towards dyslexia among English language learners are also varied and can be influenced by factors such as their training, experience, and knowledge about dyslexia. Some teachers may not have received sufficient training on dyslexia and, as a result, may lack the skills needed to identify and support dyslexic learners. This lack of knowledge and training can result in a failure to provide appropriate accommodations or interventions to support English language learners with dyslexia (Kaufman et al., 2013).

Furthermore, some teachers may be unfamiliar with evidence-based interventions proven effective for dyslexic learner. This gap in knowledge can result in the use of ineffective interventions that fail to address the needs of dyslexic English language learners (Reid et al., 2001). It is therefore important for teachers to have knowledge of

effective practices for supporting dyslexic English language learners including explicit instruction in phonological awareness.

2.6 Inclusive Educational Support for Dyslexic Learners

The school culture and support provided to teachers and learners with dyslexia can influence teachers' knowledge and practices. A positive school culture and adequate support can promote inclusive practices and support for learners with dyslexia.

Inclusive education has received considerable attention in Ghana's educational discourse, aligning with global initiatives to provide equal access to quality education for all learners. Forlin and Sin (2010) argue that inclusive education is the inclusion of 'disabled' learners into mainstream schools. The move towards inclusive education, driven by philosophical and ideological shifts towards human rights and social justice, has significantly influenced educational policies worldwide. Historically, learners with disabilities were often segregated in special settings, but since the 1960s and 1970s, there has been a shift towards inclusive educational settings (Florian & Rouse, 2009; Mattson & Roll-Pettersson, 2007). The Salamanca Statement in 1994, signed by numerous countries including Ghana, reinforced the commitment to ensuring education for all learners, irrespective of any learning barriers (Florian & Rouse, 2009). This commitment aligns with the United Nations' 'Education for All' initiative, which aimed to ensure basic education for all learners globally by 2015.

Inclusive education focuses on meeting the needs of all learners, irrespective of their physical, social, emotional, or cognitive conditions, within mainstream schools (UNESCO, 1994). The statement encourages special schools to act as resource centers and training facilities for mainstream teachers, promoting collaboration between different educational settings. However, the effective implementation of inclusive

practices is hindered by several challenges, such as insufficient teacher training, curricula that are not aligned with learners' needs, and unrealistic teacher expectations (Florian & Rouse, 2009). Other obstacles may include socio-economic disadvantages, negative and discriminatory attitudes, rigid curricula, language and communication barriers, inaccessible or unsafe learning environments, and exposure to high levels of violence and trauma (Lomofsky & Lazarus, 2001).

Although not universally supported by educators initially (Bain & Rheams, 2005), attitudes towards inclusion have gradually shifted positively over time, influenced by factors such as knowledge of learners' disabilities, availability of support services, and administrative backing (Alexander & Strain, 1978; Laviree & Cook, 1979; Struggs & Mastropieri, 1996).

The limited commitment and collaboration in inclusive education often arise from unsuitable teaching and assessment methods, rigid curricula, and primarily, inadequate teacher preparation and support. Most studies highlight the need for improvement in teacher training and preparation (Fletcher et al., 2010). This emphasizes the argument that teachers' beliefs are pivotal to the effective implementation of inclusive practices (Norwich, 1994).

Teacher training is crucial for effectively implementing inclusive education. According to Kuyini and Desai (2008), many mainstream teachers do not have the necessary knowledge and skills regarding inclusion and supporting learners with disabilities, emphasizing the importance of comprehensive teacher preparation. Parents, learners, and other stakeholders anticipate that teachers are knowledgeable in these areas, given the high probability of working with learners who have disabilities or learning difficulties. However, numerous teachers have received minimal to no

training in special needs education, whether during their initial teacher training or through ongoing professional development (Florian & Rouse, 2009).

To address these hurdles, some countries, including Ghana, have adopted innovative strategies like the 'train-the-trainer' model to bolster teacher capacity in inclusive education (Kuyini & Desai, 2008).

Moreover, large class sizes intensify the difficulties teachers encounter when implementing inclusive education in many developing countries (Kuyini & Desai, 2008). With overcrowded classrooms, teachers find it challenging to offer personalized attention and support to learners with diverse educational needs. The sheer number of learners can overwhelm teachers, making it difficult to cater to learners' varying pace and style of learning. In such environments, learners with dyslexia may be overlooked or marginalized, hindering their access to quality education. In support of this, the majority of participants in this study raised concerns regarding overcrowded classrooms and lack of support services, which made it difficult to provide individualized assistance to dyslexic learners.

2.7 Collaboration between Teachers and Special Education Experts

While significant strides have been made towards inclusive practices, barriers such as inadequate teacher training and large class sizes hinder successful implementation. Addressing these barriers requires a collaborative effort involving teachers, school management, educational authorities, and innovative approaches to teacher preparation and support.

Ultimately, inclusive education represents learner-centered approaches, collective achievement, and human rights, demonstrating a worldwide commitment to ensuring quality education for all children (Links, 2009). Collaboration between general education teachers and special education experts is pivotal in creating an inclusive educational environment, particularly for learners with specific learning disabilities such as dyslexia. This partnership ensures that learners receive comprehensive support tailored to their individual needs, leveraging the strengths and expertise of both sets of professionals. Understanding how this collaboration operates and its impact on dyslexic English language learners can provide valuable insights into effective educational practices and interventions. According to Friend and Cook (2013), collaboration in education refers to the process where teachers and special education experts work together to plan, implement, and evaluate instructional practices that cater to the diverse needs of learners. This involves shared decision-making, open communication, and a mutual commitment to learner success. Integrating the subject knowledge of general educators with the specialized strategies of special educators ensures that learners with dyslexia receive comprehensive support. Also, collaboration promotes inclusive educational practices that accommodate all learners, helping to integrate learners with dyslexia into mainstream classrooms (McLeskey et al., 2017).

Furthermore, Villa et al. (2013) contend that teachers benefit from the exchange of knowledge and skills, leading to professional growth and improved instructional practices. Effective collaboration involves several key practices such as co-planning where teachers and special education experts jointly plan lessons and activities that address the needs of dyslexic learners. This may involve adapting materials, modifying instruction, and setting common goals (Friend & Cook, 2013). Co-

Teaching is another model which involves both professionals sharing the responsibility of teaching a class, allowing for more individualized support and differentiated instruction (Murawski & Lochner, 2011). Collaboration also encourages regular communication between general and special educators is critical for monitoring learners progress, discussing challenges, and adjusting strategies as needed (Brownell et al., 2006). Research has shown that collaborative practices positively impact learners with dyslexia. For instance, McLeskey et al. (2017) contend that learners benefit from differentiated instruction tailored to their specific learning needs, resulting in improved academic performance and increased engagement. I believe that the emotional and social support provided through collaborative efforts helps in building learners' self-esteem and confidence. Thus, examining the collaboration between general education teachers and special education experts can reveal critical insights into the support systems available for dyslexic English language learners. Understanding these collaborative practices can help identify effective strategies and potential areas for improvement.

2.8 Review of Empirical Studies

Dyslexia is a prevalent learning difficulty that impacts the development of reading and spelling skills, especially among English language learners (ELLs). Teachers play a vital role in identifying and supporting dyslexic ELLs within the classroom. This section of the review examines previous studies on teachers' knowledge of dyslexia and the strategies they use to assist dyslexic ELLs from varied social, cultural, and economic backgrounds.

2.8.1 Teachers' Knowledge about Dyslexia among English Language Learners

English language learners with dyslexia have specific educational needs that must be addressed for them to achieve academic success (Snowling & Hulme, 2011). However, teachers often report limited knowledge or involvement in managing this disability (Ness & Southall, 2010). Consequently, Rose (2009) recommends that teacher education programs should, at least, equip classroom teachers with the skills to recognize signs of dyslexia and provide guidance on where to seek support for learners at risk.

Schabmann et al. (2020) studied the perspectives of 234 University instructors' knowledge related to dyslexia. Their findings reveal that while teachers possess some understanding of dyslexia, they lack essential information, particularly regarding diagnostics and appropriately addressing the needs of dyslexic learners. They further indicate that a third of the instructors admitted providing assistance to dyslexic learners in the form of compensatory measures during exams.

Likewise, Worthy et al. (2016) carried out a qualitative study exploring the understandings, perspectives, and experiences of 32 public school educators in Texas concerning dyslexia. The participants expressed a strong desire to support their learners more effectively but reported frustration stemming from unclear guidance and insufficient information regarding dyslexia identification and intervention policies in their schools. Many felt uncertain about working with learners identified as dyslexic, despite feeling confident in addressing other reading challenges. Thus, the complexity and lack of clarity surrounding dyslexia make it difficult for teachers to determine the most effective ways to support their learners. This highlights the fact that many teachers do not have a full understanding of dyslexia as a language-based

reading disability or its connection to phonological processing (Ness & Southall, 2010). This gap emphasizes the need for comprehensive teacher training programs that address dyslexia and equip educators with the knowledge and strategies required to effectively support dyslexic learners.

Acheampong et al. (2019), using a descriptive cross-sectional design with a quantitative approach and a questionnaire as the sole data collection tool, found that many Ghanaian teachers have limited knowledge of the characteristics and educational needs of learners with dyslexia. This is attributed to the sporadic and sometimes inaccurate training and information they receive on the subject. The study indicated that a significant number of primary school teachers were unable to correctly identify the signs of dyslexia, often mistaking it for other learning difficulties. The findings also highlighted the need for continuous professional development on dyslexia, as existing training opportunities are insufficient.

Again, Makgato et al. (2022) conducted a similar study in South Africa. A mixed-methods approach was employed by the authors. The study found that teachers possessed a basic understanding of dyslexia but employed only limited strategies to instruct dyslexic learners. The researchers also recommended early diagnosis through testing, active parental involvement, a supportive learning environment, and professional development for teachers on dyslexia.

Furthermore, Thompson (2013) examined teachers' levels of awareness of dyslexia, their ability to identify and support learners with the condition, and their perceptions of both pre-service and in-service training in the Western Cape region of South Africa. The study employed a quantitative design using a questionnaire. Findings indicated that although teachers believed they possessed sufficient knowledge to

identify and manage dyslexia, they acknowledged receiving inadequate training at both the pre-service and in-service levels. Thompson (2013) therefore stresses the need for continuous professional development in dyslexia for teachers.

Similarly, Iwuagwu et al. (2022) explored the knowledge, awareness, and support provided by primary caregivers, thus, both parents and teachers, for elementary school learners with dyslexia in Owerri Municipal, Nigeria. Using a quantitative research approach and a questionnaire, the study found that while participants had limited knowledge of dyslexia, they were aware of its implications and had implemented coping and management strategies. Nonetheless, their overall support for dyslexic learners was insufficient. As a result, Iwuagwu et al. (2022) recommend a thorough review of Nigeria's National Policy for Special Needs Education to foster a more equitable and inclusive educational system.

From the above discussion, it can be concluded that teachers' knowledge of dyslexia among English language learners is crucial for creating an inclusive educational environment. While some studies indicate a basic understanding of dyslexia among teachers, there is a clear need for focused professional development to strengthen their knowledge and the strategies they use to support dyslexic learners. In addition, comprehensive training programmes tailored to the unique needs of English language learners with dyslexia should be introduced to enhance learning outcomes and foster greater inclusivity in the classroom.

2.8.2 Instructional practices teachers adopt to support dyslexic English language learners

Professional development plays a crucial role in enhancing teachers' abilities to support dyslexic learners. Research indicates that professional development initiatives

can significantly improve teachers' attitudes and instructional practices in supporting learners with dyslexia (Gallardo et al., 2015; McCray & McHatton, 2011). Equipping teachers with relevant knowledge and skills enables them to better respond to the varied learning needs of dyslexic students and to foster inclusive classroom environments. Acheampong et al. (2019) further found that most general education teachers in Ghana did not use specific strategies to assist dyslexic learners, instead relying on broad instructional methods that were not tailored to their needs. This highlights a critical gap in practical training and the implementation of inclusive teaching practices.

In a study by Yoro et al. (2020) examining the instructional approaches used by newly qualified teachers in mainstream South African classrooms, it was found that teachers employed a range of support strategies, such as learning and curriculum differentiation, ability grouping, cooperative and peer, and the use of visual aids, which proved successful in enabling dyslexic learners to comprehend and assimilate lessons despite their learning challenges. The authors used an interpretative generic qualitative design which employed semi-structured interviews, observations and critical incident reports. The study indicated that incorporating specific teaching strategies tailored to the needs of dyslexic learners is essential for creating inclusive classrooms.

Additionally, Exeley (2003) explored whether adapting teaching methods to align with learners' preferred learning styles could improve their performance and achievement in both numeracy and literacy. Working with seven dyslexic learners in England, Exeley (2003) identified visual learning as the preferred option for the majority, followed closely by kinesthetic learning. The study found that adjusting

teaching strategies to align with learners' preferred learning styles led to academic improvements. While quantifiable gains were observed in five learners, qualitative observations revealed that the other two learners developed a deeper understanding of spelling patterns and mathematical concepts.

Agreeably, El Arbaoui (2022) argues that teachers can employ various techniques, such as reading aloud, visualizing vocabulary, and using nonverbal cues, to support dyslexic learners. Moreover, providing dyslexia-specific teaching strategies that emphasize repetition and reinforcement can help cultivate learners' memory and improve learning outcomes. Multisensory strategies, including activating all senses simultaneously, and providing verbal instructions with visual backing, can further enhance learners' understanding and retention of information (El Arbaoui, 2022).

Ultimately, the success of instructional practices depends on teachers' understanding of dyslexia and their ability to modify teaching methods to meet the unique needs of individual learners. With comprehensive training and continuous professional development, educators can support dyslexic students more effectively and foster inclusive learning environments where every learner has the opportunity to succeed.

In traditional learning environments, dyslexic learners often face unique challenges that necessitate tailored educational approaches to ensure they thrive alongside their peers. Teachers with in-depth knowledge of dyslexia can identify these challenges early and implement timely interventions that are crucial for the learners' academic success (Shaywitz, 2003). Knowledgeable teachers can create a supportive and inclusive educational environment, allowing dyslexic learners to access the same educational opportunities as their peers, thereby fostering equity, boosting self-esteem, and improving academic outcomes (Elliott & Grigorenko, 2014).

According to Aboagye (2018), teachers' attitudes toward learners with conditions such as dyslexia can be greatly influenced by their years of experience, their professional training, and their understanding of the characteristics of learners with special needs, Agbenyega and Deku (2011) similarly found that it is more likely for teachers who possess greater knowledge of learning disabilities like dyslexia to implement inclusive practices effectively. In contrast, limited understanding often leads to resistance toward inclusive education, as teachers may feel unprepared to address the diverse needs within their classrooms. Similarly, Aboagye (2018) used mean scores and standard deviations to analyze teachers' attitudes. A mixed-methods approach involving 243 teachers from inclusive schools across four regions of Ghana was employed. The results showed that most teachers held positive attitudes towards learners with special educational needs, although some opposed the inclusion policy.

Moreover, Avramidis and Norwich (2002) emphasized that teachers' knowledge and understanding of specific learning disabilities like dyslexia shapes their attitudes towards inclusive education. Teachers with more comprehensive training and understanding of dyslexia are more likely to adopt inclusive practices successfully.

Again, a cross-cultural study in Ghana, Germany, and Spain by Mónico et al. (2020) examined teachers' knowledge, and attitudes towards inclusion. A cross-cultural survey design was employed, in which a questionnaire was administered to teachers from three different countries, thus, Ghana, Germany, and Spain, to gather information on their knowledge and attitudes toward inclusion. The study revealed that teachers' experience, attitudes, and knowledge can either support or impede inclusive education efforts. It further suggests that although cultural factors may differ, a strong understanding of effective teaching practices is crucial for advancing

inclusive education. Furthermore, Van der Leij (2013) conducted a study that focused on the effects of professional development programs on teachers' efficacy in inclusive classrooms. The results indicated that teachers who participated in specialized training on dyslexia reported higher levels of self-efficacy and were more adept at creating inclusive learning environments. This longitudinal study monitored teachers' progress over several years, revealing the lasting positive impact of targeted professional development.

From the ongoing discussing, it is evident that teachers' knowledge of dyslexia is crucial for fostering an inclusive educational environment. Sufficient training and awareness equip educators to apply strategies that address the specific learning needs of dyslexic learners, creating a setting in which all learners have the opportunity to succeed.

2.8.3 Collaboration Between Teachers and Special Education Experts

The importance of collaborative efforts in education cannot be overstated. Research consistently shows that when general and special educators work together, they can develop more effective learning environments that address the diverse needs of all learners (Friend & Cook, 2013). A key focus in this area is co-teaching, where general and special educators share instructional responsibilities. Murawski and Swanson (2001), in a meta-analysis of 89 co-teaching studies, found that such collaborative approaches generally lead to positive academic outcomes for learners with disabilities compared to those in non-collaborative settings.

Another study by Scruggs et al. (2007) reviewed qualitative research on co-teaching in inclusive classrooms. They observed that co-teaching facilitates differentiation and individualized instruction, which significantly benefits learners with learning

disabilities such as dyslexia. The researchers noted improved learner engagement and academic performance, highlighting the practical benefits of collaborative teaching models. Apart from reported academic benefits of collaboration, it also positively impacts the social and emotional well-being of learners with disabilities. Research by Carter et al. (2009) confirmed that collaborative practices enhance learners' social interactions and reduce feelings of isolation. The study revealed that learners with disabilities, including dyslexia, in collaborative classrooms were more likely to engage actively in classroom activities and form positive relationships with their peers.

Similarly, Friend et al. (2010) found that students in co-taught classrooms demonstrated improved social skills and greater peer acceptance. Their research highlighted the critical role of collaborative teaching in promoting a supportive and inclusive learning environment.

However, despite these advantages, collaboration between general and special educators still presents certain challenges. A study by Pugach and Blanton (2009) identified several barriers to effective collaboration, including lack of time for planning, insufficient administrative support, and differences in teaching philosophies. These barriers can impede the successful implementation of collaborative practices. A study by Magiera and Zigmund (2005) explored the barriers faced by co-teachers in inclusive classrooms. The researchers found that lack of common planning time and conflicting teaching styles were significant obstacles. They suggested that administrative support and structured planning time are essential for overcoming these barriers and fostering effective collaboration.

2.9 Connection between Reviewed Works and the Current Research

The knowledge and practices of teachers regarding dyslexia among English language learners (ELLs) carry significant implications for English education, language curriculum development, and instructional practices. These implications encompass various areas, including increased understanding and awareness of dyslexia, enhancement of professional development and teacher training, improvement of socioeconomic outcomes, and promotion of inclusion of dyslexia in language curriculum and instruction.

To begin with, addressing the issue of dyslexia requires heightened awareness and understanding among educators, parents, and caregivers. Evidence-based studies highlight a significant lack of understanding among educators regarding dyslexia, resulting in challenges in identifying and effectively supporting dyslexic learners (Schabmann et al., 2020; Worthy et al., 2016). Dyslexia can be challenging to identify in ELLs, especially among those new to the English language, as symptoms may overlap with those of language acquisition (Snowling & Hulme, 2012). Unfortunately, dyslexia is often unrecognized or misunderstood by teachers and parents (Darkwa et al., 2018). Therefore, this study will play a crucial role in increasing awareness and understanding among stakeholders, enabling better support for dyslexic learners.

Again, effective professional development and teacher training programmes are essential for supporting dyslexic learners and promoting inclusive education. Programmes addressing the needs of dyslexic learners have been shown to improve reading outcomes (Lembke & Foorman, 2019). Professional development initiatives that provide teachers with the knowledge and skills to recognize and support dyslexic

learners can significantly improve educational outcomes for these learners. Additionally, evidence-based teaching strategies tailored to dyslexic learners can be integrated into training programs, further optimizing their effectiveness (Loo & Ong, 2019).

Moreover, investing in education, including addressing the needs of dyslexic learners, can have a profound impact on socioeconomic outcomes. Research indicates that education is a key strategy for reducing poverty and fostering economic growth (World Bank, 2000). By ensuring equitable access to education and supporting dyslexic learners, particularly in a country like Ghana, where this study will focus, societal benefits can be realized, leading to improved social and economic outcomes for all learners.

Moreover, integrating dyslexia awareness into language curricula and instruction is crucial for addressing the diverse needs of learners. Dyslexia impacts multiple areas of language learning, including reading, writing, and spelling (Snowling et al., 2020). Consequently, incorporating strategies and accommodations for dyslexic learners into language curriculum development is paramount. This may include the use of assistive technologies, multisensory teaching methods, and differentiated instruction to support dyslexic learners effectively (NICHD, 2020). Also, strategies such as adapting teaching methods to learners' preferred learning styles and utilizing multisensory techniques have been proven to improve academic outcomes for dyslexic learners (Exeley, 2003; El Arbaoui, 2022).

In conclusion, research addressing teachers' knowledge and practices of dyslexia among ELLs holds significant promise for improving educational outcomes and fostering inclusivity. By increasing awareness, enhancing teacher training, improving

socioeconomic outcomes, and promoting inclusion in language curriculum and instruction, this study aimed to help develop more supportive and effective learning environments for learners with dyslexia.

2.10 Chapter Summary

This chapter has provided a critical review of relevant literature on dyslexia, including its definition, misconceptions, characteristics, and interventions, especially among English language learners. It was revealed that dyslexia's impacts extend beyond academics, affecting social-emotional well-being if it is not identified early or underdiagnosed. Interventions like multisensory teaching aim to manage challenges. Also, teachers' knowledge and practices were noted to be crucial. Thus, the lack of knowledge on dyslexia hinders support, while positive attitudes facilitate inclusivity. Further, theoretical frameworks like the Zone of Proximal Development and Causal Modeling frameworks were discussed. An in-depth review of empirical studies revealed gaps in teacher knowledge, emphasizing the need for targeted professional development. The review further indicated that various strategies, including cooperative learning and the use of visual aids, have proven effective in supporting learners with dyslexia. Successfully addressing the complexities of dyslexia entails raising awareness, improving training, and advocating for inclusive practices in education.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter discusses the research approach, design, setting, population, sample, and data collection instruments used in the study on teachers' knowledge and practices regarding dyslexia among English language learners. It also details the procedures for data collection and analysis, strategies for ensuring research quality, ethical considerations, and the study's limitations.

3.1 Research Approach

For the purpose of this study, a mixed methods approach was used. According to Creswell and Creswell (2018), mixed methods research involves the integration of both qualitative and quantitative approaches within a single study. This approach was considered suitable because it provided a comprehensive understanding of teachers' knowledge and practices concerning dyslexia and allowed for the triangulation of data from multiple sources, thereby strengthening the validity and reliability of the findings (Greene et al., 1989).

Quantitative methods were crucial in assessing the prevalence and frequency of specific instructional practices related to dyslexia. Surveys were used to collect numerical data, enabling statistical analysis and increasing the generalizability of the findings. For example, surveys captured quantitative evidence about the prevalence of certain misconceptions and the consistency with which various strategies were employed, adding a broader perspective to the qualitative insights.

The qualitative component of the study provided an opportunity to explore teachers' knowledge of dyslexia in greater depth. Through focus group discussions, teachers shared their experiences and insights regarding dyslexia, which added contextual richness to the data. These qualitative insights were invaluable for understanding the underlying attitudes and perceptions that influence teachers' approaches to dyslexia, providing a deeper perspective on their experiences.

Additionally, observations were carried out to complement and validate the data obtained from the surveys and focus group discussions. Observation, as noted by Cohen et al. (2018), is a valuable data collection method that involves systematically recording and analyzing behaviors, events, and interactions within their natural setting. It provides direct insight into the dynamics of a situation, enabling them to gather data on what people do, rather than what they say they do. Observational data provided insights into the actual classroom practices of teachers, such as the use of assistive technology, differentiated instruction, and specific accommodations for dyslexic learners. Observing teachers in their real-world teaching environments offered tangible evidence of the extent to which reported practices were implemented, thereby enhancing the overall credibility of the findings.

According to Creswell and Plano Clark (2018), "the strengths of mixed methods research include the ability to collect both quantitative and qualitative data and the potential to achieve a more comprehensive understanding of the research problem." The use of surveys and statistical analysis provided a broad overview of the knowledge and practices of teachers while focus groups discussions and classroom observations provided a rich understanding of the reasons behind their practices. This goes to increase the reliability and validity of the findings by providing multiple

sources of evidence. Qualitative data also provided insights into the factors influencing teachers' knowledge and attitudes toward dyslexia, including their personal experiences, training, and the organizational culture in which they operate. However, this approach had certain limitations. One potential drawback was that collecting and analyzing both quantitative and qualitative data was time-consuming and resource-intensive. Additionally, integrating the two types of data can be challenging, as they may be collected and analyzed separately and may vary in level of detail (Creswell & Plano Clark, 2018). Moreover, the generalizability of the findings may be constrained by the sample size and sampling techniques used, making it difficult to apply the results to other populations, such as teachers in different regions or with varying levels of experience.

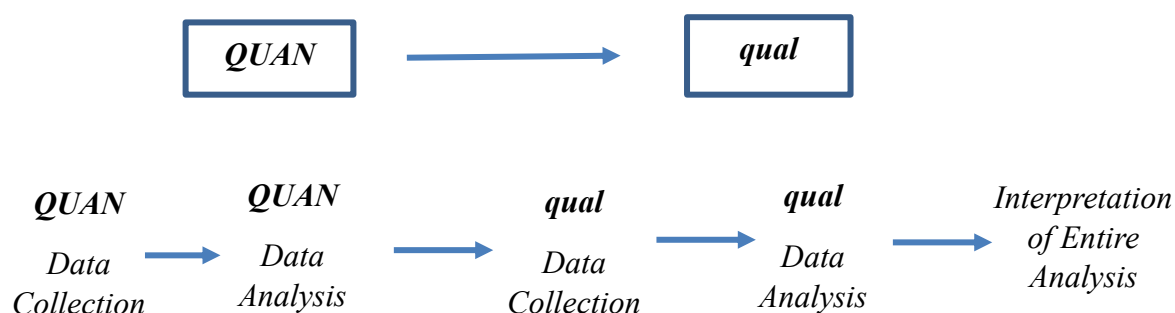
To mitigate these limitations, a detailed research plan and timeline were developed to manage the sequential phases efficiently (Creswell & Plano Clark, 2018). Furthermore, a clear integration strategy was established, with specific procedures for data analysis and interpretation, to manage the complexity of data integration (Plano Clark & Ivankova, 2015). This design allowed for a comprehensive examination of the research problem by combining the strengths of both quantitative and qualitative methods, offering a richer and more nuanced understanding of teachers' knowledge and practices related to dyslexia among English language learners.

3.2 Research Design

An explanatory sequential mixed methods design was employed to examine teachers' knowledge and practices regarding dyslexia among English language learners. The research design involved initially collecting and analyzing quantitative data, followed by qualitative data. The main purpose of this approach was to use the qualitative

findings to clarify and further elaborate on the initial quantitative results (Creswell & Plano Clark, 2018), allowing for a broad understanding of the topic along with detailed insights.

Figure 2: Explanatory Sequential Mixed Methods Design (Creswell & Plano Clark, 2018)



The explanatory sequential design was particularly appropriate for this study, as the qualitative data provided deeper insights into the initial quantitative results (Creswell & Creswell, 2018). This sequential approach enhanced data interpretation by integrating quantitative and qualitative findings, leading to a more comprehensive understanding and conclusion (Creswell & Plano Clark, 2018). In line with the explanatory sequential design, the qualitative data collection instrument was developed based on the initial quantitative findings to further explain patterns identified in the survey results. This approach, therefore, enabled a more focused investigation of the research questions (Teddlie & Tashakkori, 2009).

3.3 Setting

This study was carried out in the Sekondi Sub-Metro of the Sekondi Takoradi Metropolitan Assembly (STMA) in Ghana's Western Region. Covering an area of 65 km², the STMA is bordered by Mpohor and Wassa East Districts to the north, Shama District to the east, Effia-Kwesimintsim Municipal to the west, and the Gulf of

Guinea to the south. The Sekondi Sub-Metro comprises communities such as Sekondi Ridge, Fijai, Kweikuma, Bakaeyile, Adiembra, Bakado, Essaman, and Ekuase.

3.4 Population

The target population for this study included English language teachers in 30 inclusive kindergarten (KG) and primary schools within the Sekondi Sub Metro. The focus on kindergarten and primary schools was deliberate, as dyslexia is a neurodevelopmental condition that primarily manifests in learners at these educational levels. These teachers were purposively chosen due to their role in teaching English language as one of their subjects. Also, teachers at these educational levels are often the first to observe learning difficulties, making their knowledge and practices vital for early detection and support (Rose, 2009).

3.5 Sample and Sampling Technique

The primary purpose of this study was to investigate and understand teachers' knowledge and practices regarding dyslexia among English language learners in the Sekondi Sub Metro inclusive kindergarten and primary schools. Data on kindergarten and primary schools as well as English language teachers was obtained from the Sekondi - Takoradi Metro Education Directorate in Takoradi. There were 30 basic schools and 260 English language teachers (88 in KG and 172 in primary schools). All the 30 schools participated in the study. 158 teachers were sampled for the quantitative survey and 20 teachers were included in the qualitative study. In addition, 5 classrooms were observed to offer a comprehensive insight into the current state of teachers' knowledge and practices across the sub-metro.

3.5.1 Quantitative Data

The quantitative aspect of this study involved surveying approximately 158 English teachers from the sampled schools. This sample size provided statistical representation and allowed for the generalization of findings to the entire population of English teachers in the Sekondi Sub-Metro. The Yamane formula, shown below, was used to calculate an appropriate sample size for the quantitative component of the study:

$$n = \frac{N}{1 + N(e^2)}$$

Where: n = sample size, N = population size (260 English teachers), e = margin of error (0.05 for a 95% confidence level).

In order to ensure that both KG and primary school teachers are adequately represented in the sample, a stratified random sampling technique was used. The schools were stratified into two categories based on the level of education (KG and primary), and teachers were randomly selected from each category. The proportion of teachers sampled from each school was based on the total number of English language teachers in each school relative to the total number of English language teachers in the Sekondi Sub-Metro as shown below:

Proportion of teachers from a school = $\frac{\text{Number of teachers in the school}}{\text{Total number of teachers}}$

The proportion of teachers from each school was then multiplied by the total sample size (158) to determine the number of teachers to be sampled from each school. For instance, the number of teachers to be sampled from Nkontompo A.M.E. Zion Basic Sekondi is calculated below:

Nkontompo A.M.E. Zion Basic Sekondi: 9 (KG) + 13 (Primary) = 22 teachers

Proportion of teachers to be sampled

$$\frac{22}{260} = 0.0846$$

Number of teachers to sample from Nkontompo A.M.E. Zion Basic Sekondi:

$$0.0846 \times 158 = 13$$

This technique enhances the representativeness of the sample and ensures that variations in teacher knowledge and practices across different educational levels are captured (Etikan et al., 2016).

Table 3.1: Sampled Inclusive Basic Schools

S/ N	NAME OF SCHOOL	NUMBER OF ENGLISH TEACHERS BY LEVEL		SAMPLED NUMBER OF ENGLISH TEACHERS BY LEVEL	
		KG	PRIM ARY	KG	PRIMARY
1	Adiembra Stma KG School	2	0	1	0
2	Ekuase Methodist Basic school	4	6	2	4
3	Gethsemane Stma Basic School	4	10	2	6
4	Holy Child Centre of Excellence Basic School	3	7	2	4
5	Holy Child Practice Basic School	2	9	1	5
6	Kweikuma Stma Basic School	3	6	2	4
7	Nana Anaisie Memorial Stma Primary School	0	6	0	4
8	Nana Kobina Gyan KG & Primary School	2	6	1	4
9	Nkontompo A.M.E Zion Basic Sekondi	9	13	5	8
10	REV. DR. Osam Pinanko A.M.E. Zion Basic School	4	6	2	4
11	ST. John the Baptist Catholic Basic School	5	7	3	4

1 2	Aggrey Memorial Basic School	2	6	1	4
1 3	Ann Someville Memorial Catholic KG School	5	0	3	0
1 4	Boundary Road Methodist Primary School	0	13	0	8
1 5	Boundary Road Stma/3rd Street KG & Primary School	3	8	2	5
1 6	Chief Ibrahim Islamic KG School	2	0	1	0
1 7	Chief Ibrahim Islamic Primary School	0	8	0	5
1 8	Old Hospital Stma Primary School	0	5	0	3
1 9	Queen Elizabeth II KG School	9	0	5	0
2 0	REV. Griffeon Catholic Primary & JHS	0	6	0	4
2 1	Salvation Army KG & Primary School	3	5	2	3
2 2	Sekondi A.M.E. Zion Basic School	1	4	1	2
2 3	Sekondi Model KG & Primary School	3	3	2	2
2 4	Sekondi Presby Basic 'A' School	3	7	2	4
2 5	Sekondi Presby Basic 'B' School	4	7	2	4
2 6	ST. Andrew's Anglican 'A' KG & Primary School	1	6	1	4
2 7	ST. Peter's Anglican Basic 'A' School	3	6	2	4
2 8	ST. Peter's Anglican Basic 'B' School	2	5	1	3
2 9	Well Road Methodist Primary School	0	7	0	4
3 0	Wesley Methodist KG School	9	0	5	0
GRAND TOTAL		88	172	53	105

3.5.2 Qualitative Data

For the qualitative component, a purposive sampling technique was used to select a smaller, more targeted group of participants. This approach enabled the researcher to choose individuals with specific characteristics or experiences relevant to the study, such as teachers with a minimum of three years of experience teaching the English language, teachers who had encountered learners with dyslexia or reading difficulties, and teachers who had received some form of training or professional development related to special education or dyslexia. These teachers were chosen based on their survey responses and their willingness to offer detailed insights during the focus group discussions. This group consisted of 20 English language teachers who exhibited varying levels of experience and knowledge about dyslexia. The discussions were held in two separate sessions with a group of 10 teachers participating in each session. The determination of a sample size of 20 for the qualitative research was based on principles of data saturation rather than specific statistical calculations. According to Mason (2010) qualitative research aims to explore complex phenomena in depth. He further argues that qualitative sample sizes should be sufficiently large to achieve saturation but small enough to allow for the deep, case-oriented analysis that is a hallmark of qualitative research. Studies indicate that saturation often occurs within the first 10-12 interviews (Guest et al., 2006). Similarly, Creswell (2013) suggests a range of 5-25 participants for phenomenological studies, emphasizing that the exact number depends on the study's purpose and the point at which saturation is achieved. A sample size of 20 participants was both practical and manageable given the time and resource constraints, while still providing enough data for thorough in-depth analysis.

3.5.3 Observation Data

For the observational component of this study, a purposive sampling technique was used to select a specific group of teachers exhibiting key characteristics relevant to the research objectives. This method enabled the researcher to intentionally choose participants with unique insights and experiences in teaching dyslexic learners, thereby enhancing the relevance and depth of the data collected. The sample consisted of teachers with at least three years of experience teaching English, who had encountered dyslexic learners in their classrooms, and who had received some form of training or professional development in special education or dyslexia. These criteria were essential in ensuring that the teachers observed were both knowledgeable about and experienced in managing dyslexia-related challenges in an English language learning context.

A total of five teachers were selected for observation. This sample size aligns with the principles of qualitative research, which prioritize depth over breadth by focusing on a smaller group to gain a detailed understanding rather than aiming for a larger, statistically representative sample (Mason, 2010). Observational research, as Creswell and Creswell (2018) point out, is best conducted with participants who can provide detailed and contextualized information, rather than a broad sample, to capture nuanced behavioral data. Furthermore, Creswell & Plano Clark (2018) recommend a focus on fewer participants to allow for detailed recording and analysis of specific teaching practices within naturalistic settings. The selection of five participants was based on the principle of data sufficiency in qualitative research, which emphasizes reaching a practical level of data saturation where no new insights are gained, as highlighted by Guest et al. (2006). A small, focused sample was chosen to ensure in-

depth observation while managing the study's constraints on time and resources effectively.

3.6 Data Collection Instruments

This study employed both quantitative and qualitative data collection instruments to obtain a comprehensive understanding of teachers' knowledge of dyslexia, how this knowledge impacted their ability to foster an inclusive classroom environment, the instructional strategies they used to support learners with dyslexia, and the extent of collaboration between teachers and special education experts.

3.6.1 Questionnaire

A questionnaire was employed to gather quantitative data efficiently from a large sample within a minimal timeframe. This instrument included closed-ended questions to collect numerical data, which could be analyzed using statistical techniques. The survey was completed by 158 teachers from 30 inclusive basic schools, assessing teachers' knowledge about dyslexia, their instructional practices, their level of collaboration with special education experts. The survey instrument, structured in four parts (A to D) with 30 items, was adapted from previous research methodologies to ensure reliability and relevance.

Section A of the questionnaire consisted of 15 dyslexia-related items adapted from Acheampong et al. (2019) to evaluate teachers' knowledge of dyslexia, including its definition, characteristics, and symptoms. Section B focused on instructional practices, with four items adapted from Villa and Thousand (2005) to suit this study's purpose. Section C assessed collaboration between teachers and special education experts, with four items derived from Friend et al. (2010) and Scruggs et al. (2007). Section D comprised seven demographic questions designed to collect background

information, including gender, age range, years of teaching experience, and teaching qualifications.

3.6.2 Interview Protocol

Qualitative data were gathered through focus group interviews to gain an in-depth understanding of teachers' knowledge, attitudes, and experiences concerning dyslexia. A focus group interview format with open-ended questions was chosen to solicit rich, detailed responses and to allow participants to express their thoughts openly (Amedahe, 2002). The interview questions, informed by studies on dyslexia (Stanovich & Jordan, 1998), were designed to align with the study's objectives. This covered five sub-sections: teachers' knowledge, instructional practices, inclusive educational environment, collaboration with special education experts, and demographic information. The first section assessed teachers' understanding of dyslexia, while the second focused on the instructional practices they employ. The third section explored how their knowledge aids them in fostering an inclusive environment, and the fourth examined the nature and impact of their collaboration with special education experts. Finally, the fifth section gathered demographic data to provide context to the participants' responses.

3.6.3 Classroom Observation Checklist

In addition to surveys and focus group interviews, observational data were collected to validate the practices teachers reported in fostering an inclusive educational environment for learners with dyslexia. Observational checklists were used to document classroom practices and instructional practices during English language sessions. This allowed for the direct examination of strategies reported in interviews, providing additional data to triangulate findings. Teachers selected for observation

were those with a minimum of three years of teaching experience who had previously taught dyslexic learners, as their experience was likely to offer insights into established practices. The observation focused on instructional techniques employed by teachers and inclusive classroom environment created in real classroom settings. This was done to enrich the study's findings by adding a layer of practical evidence.

3.7 Piloting the Survey Questionnaire

A pilot test is essential in research for ensuring the reliability and validity of data collection instruments. It enables the researcher to detect and address any potential issues prior to full implementation. (Bryman, 2012). In this study, a pilot test of the questionnaire was conducted with ten basic schools in the Shama district, involving 30 teachers. This step offered an opportunity to assess the clarity, relevance, and comprehension of the questions, and to refine the instrument for greater accuracy (Patton, 2002). According to Saunders et al. (2016), a pilot test helps to address ambiguous questions and adjust wording to enhance respondents' understanding, thus supporting the reliability of the research tool.

During the pilot phase, the questionnaire was distributed to teachers in the selected schools, and their responses were carefully analyzed. Any ambiguity or lack of clarity in the questions was addressed based on the feedback received. For example, certain terms in the instructional practices section, which were initially unclear to respondents, were refined for better understanding, as suggested by Cohen et al. (2011). Similarly, terms that could cause confusion were reworded, and vague statements were revised to improve clarity and readability. This process of revision aligned with the recommendations of Bell & Waters (2014), who argue that pilot tests can identify misinterpretations or unintended biases in the survey design

Additionally, the pilot test enabled the researcher to evaluate the feasibility of the data collection procedures, including the time needed for completion and the clarity of the instructions provided. According to Babbie (2014), a pilot test serves to streamline data collection logistics and confirm that the instrument can gather consistent and meaningful data across respondents. After the pilot, minor adjustments were made, and ambiguous items were clarified to support ease of response. The feedback from this pilot also facilitated the adjustment of scales and response options, which is essential to improve the instrument's reliability (Zikmund et al., 2013). For example, statements on instructional practices and collaboration practices were refined to avoid double-barreled or leading questions. As a result, the questionnaire was fine-tuned to ensure that it accurately captured the necessary information regarding teachers' knowledge and practices related to dyslexia.

3.8 Data Collection Procedure

An introductory letter from the English Department of the University of Education, Winneba, was sent to the schools to inform the heads about the research study and request permission for teacher participation. Ethical considerations were given priority during school visits, with the study's purpose and all related ethical aspects clearly explained to potential participants. Once permission was granted, a one-month period was scheduled for administering questionnaires, conducting interviews, and carrying out observations at the respective schools with the sampled teachers.

Before conducting the focus group interviews, all interviewees were given copies of the interview schedule to review beforehand. This step aimed to promote interaction between the interviewer and the interviewees by familiarizing them with the topics to be discussed. Additionally, interviewees were given the flexibility to select the time,

date, and venue for the interviews, allowing them to accommodate their regular schedules without disruption. Throughout this process, strict assurances of confidentiality were provided to all participants, emphasizing that their identities would remain undisclosed. Moreover, participants were not subjected to any coercion or pressure to join the study, and strict adherence to the principles of informed consent and voluntary participation was maintained, as recommended by Denscombe (2010). To enhance data accuracy, consent was sought from interviewees to audio-record the sessions. Following the interviews, each participant had the opportunity to listen to the recorded audio to cross-check their comments and validate the information provided during the interview process. This practice ensured transparency and empowered respondents to verify the accuracy of their contributions, thereby fostering trust and reliability in the research outcomes.

Observation was also employed to provide a direct examination of teachers' instructional practices and classroom interactions, as well as to confirm reported practices from the survey and interview responses. Teachers selected for observation were those with at least three years of teaching experience and prior interactions with dyslexic learners. Observational data were collected during full class sessions, documenting strategies used to support dyslexic learners, the use of assistive technology, classroom layout, and the overall inclusivity of the learning environment. The use of observation as a data collection tool allowed for additional validation of the findings through real-time classroom insights, providing a nuanced layer to the qualitative data.

3.9 Data Analysis Procedure

Serial numbered were assigned to the completed questionnaires to facilitate identification and coding. Responses on the four-point Likert scale were scored as 4, 3, 2, and 1, corresponding to “strongly agree,” “agree,” “disagree,” and “strongly disagree,” respectively. To maintain consistency and facilitate interpretation, items stated negatively were reverse coded. The research questions were analyzed using mean and standard deviation calculations to determine whether the responses were generally homogeneous or heterogeneous.

For the qualitative data, research questions 1, 2, and 3 were analyzed thematically using Creswell and Creswell’s (2023) framework. This approach involves organizing and preparing the data, thoroughly reading the data for familiarization, coding the data, using the codes to generate themes or descriptions, developing a story line interpretation, and representing and interpreting the findings.

During data familiarization, the interview audio recordings were reviewed multiple times to capture subtle nuances in the responses (Braun & Clarke, 2006). Each participant was assigned a numerical code for ease of reference (Bishop & Colby, 2002), and interviews were transcribed verbatim to preserve original data (McLellan et al., 2003). The transcribed data were carefully reviewed alongside the audio to ensure accuracy, and each interview was summarized to highlight emerging themes, similarities, and differences. General notes and comments were made to reflect recurring issues in the data, following the qualitative analysis framework of Creswell and Creswell (2023).

Initial codes were generated by identifying essential units within the data, which were then organized by color-coding and noting significant themes (Braun & Clarke, 2006). The research questions and predefined main themes guided this process. Responses addressing multiple issues were segmented and categorized under relevant themes. Further, themes were reviewed and refined to ensure alignment with the study objectives, with subthemes generated as needed to provide nuanced insights. The coded data and relevant excerpts were organized cohesively, with clear labels for each subtheme.

In writing the findings chapter, themes were reviewed and grouped, and illustrative quotes were selected to support each theme. The main themes were thoroughly analyzed, with selected quotes used as evidence to interpret the findings in relation to the research questions and relevant literature. These verbatim extracts were chosen based on relevance and clarity, providing vivid examples that supported the conclusions drawn from the data.

The analysis of observational data centered on validating and corroborating the claims made by teachers during the surveys and focus group discussions. Specifically, it examined how teachers' knowledge of dyslexia affected their ability to foster an inclusive educational environment and the instructional strategies they used to support learners with dyslexia. Observations were conducted with five purposefully selected teachers who had direct encounters with dyslexic learners and over three years of experience teaching English. These observations provided critical insights into the consistency between self-reported practices and actual classroom behaviour.

The analysis begun with the preparation of data. Detailed observational notes and recordings from the classroom sessions were systematically organized according to key themes corresponding to the research questions. These themes included the inclusivity of classroom environments and the effectiveness of instructional practices in supporting dyslexic learners.

Quantitative analysis involved tabulating the frequency of observed inclusive practices during the sessions. Statistical measures, including mean and standard deviation, were applied to assess the variability and consistency of these practices. In addition to the quantitative analysis, qualitative methods were used to capture the depth and richness of the observed practices. Descriptive coding was applied to the observational data and focused on aspects such as the use of teaching aids, individual support for dyslexic learners, and the overall classroom atmosphere.

Furthermore, contextual factors such as resource limitations, classroom dynamics, and institutional challenges were considered during the analysis. These factors were crucial in understanding the extent to which teachers could implement inclusive practices effectively.

3.10 Strategies for Ensuring Quality of Research

3.10.1 Credibility

In this study, a mixed methods approach was employed to ensure the complementarity of the findings. The interpretation, discussion, and conclusions were shared with all respondents for validation, which confirmed their support for the accuracy and alignment of the findings with their experiences.

3.10.2 Validity

In this study on teachers' knowledge and practices regarding dyslexia among English language learners, validity was evaluated using three primary categories: face validity, construct validity, and criterion validity (De Vos et al., 2005).

To ensure face validity, a pilot study was conducted to evaluate the questionnaire items. This pilot study involved reviewing the questionnaire items to determine whether they effectively captured the aspects of teacher awareness and management of dyslexia, as intended. Also, construct validity was assessed empirically through the questionnaire by examining the relationship between the level of education and teacher awareness of dyslexia. By analyzing responses to questionnaire items related to teachers' educational backgrounds and their knowledge of dyslexia, construct validity was evaluated.

Additionally, to ensure criterion validity, efforts were made to align the questionnaire items with established criteria for measuring teacher awareness and management of dyslexia. This involved consulting existing literature, expert opinions, or standardized assessment tools to inform the development of questionnaire items that accurately reflected the construct of interest.

3.10.3 Reliability

Reliability of this study was ensured by providing a thorough description of its focus, the researcher's roles, the roles of the participants, the criteria for selecting participants, and the contextual background. This detailed account promoted transparency and clarity, allowing readers to fully understand the research process. Additionally, the use of a mixed methods design enabled triangulation, incorporating multiple data collection and analysis methods to enhance both reliability and internal

validity. By cross-verifying findings across different sources and analytical approaches, the study strengthened the consistency and credibility of its results. Careful documentation of data collection and analysis procedures was also carried out to provide a transparent and accurate account of the research methods used, facilitating replication and verification by other researchers. Furthermore, all phases of the study were reviewed by the researcher's supervisor and external auditors with expertise in research methods to ensure reliability.

3.10.4 Transferability

In this study, the researcher included comprehensive descriptions of participants' demographic characteristics, encompassing factors such as race, gender, age, years of teaching experience, educational attainment, and previous teaching background, as recommended by Trochim et al. (2016).

3.10.5 Dependability

The researcher transparently detailed all methods utilized, presented accurate data reflective of the information gathered, and derived conclusions based on the evidence provided by the data.

3.10.6 Confirmability

To ensure confirmability, the researcher played back recorded interviews to participants before finalizing data analysis. This promoted greater objectivity and helped prevent misinterpretations of participants' thoughts and actions, thereby enhancing the validity and trustworthiness of the research findings (Bryman, 2012).

3.11 Ethical Consideration

In this study, the researcher meticulously informed participating teachers about the research topic, its objectives, and the rationale for their involvement. Each teacher was explicitly asked to provide consent, ensuring they clearly understood the nature of the study and retained full autonomy in deciding whether to participate. Participants were also assured that they could withdraw from the study at any stage if they chose to do so. Additionally, stringent measures were taken to uphold confidentiality, with names of schools and teachers omitted from the study to safeguard their identities. This anonymity shielded teachers' classroom practices and personal impressions of dyslexic English language learners from being traced back to them, creating a safe space for teachers to share their experiences without fear of repercussions.

3.12 Limitations

This study aimed to investigate teachers' knowledge and practices regarding dyslexia among English language learners; however, several limitations affected the generalizability and comprehensiveness of the findings. First, the study was restricted to kindergarten (KG) and primary schools within the Sekondi Sub Metro area, excluding junior high schools (JHS). This focus on younger learners limits the scope of the findings, as teachers in KG and primary schools often have different training, experience, and professional development opportunities than their counterparts in JHS. Consequently, the results mainly reflect the knowledge and practices of teachers working with younger learners, and may not capture the broader spectrum of educational settings and teacher experiences within the Sekondi Sub Metro area.

Additionally, due to time and resource constraints, only five classroom observations were conducted. According to Creswell and Creswell (2023), qualitative research often requires a larger number of observations to achieve data saturation, the point at which no new insights emerge. In this study, the limited number of observations may not fully capture the wide range of instructional strategies and approaches teachers use to support dyslexic learners. Increasing the number of observations in future studies would provide a more comprehensive understanding and improve the reliability of the findings.

3.13 Chapter Summary

This chapter has extensively discussed the research methodology employed in the study. It explained the mixed methods approach chosen for its ability to offer a comprehensive understanding of teachers' knowledge and practices regarding dyslexia among English language learners. The chapter details the research design, setting, population, and sampling technique, emphasizing the use of a convergent mixed method design to collect and analyze both qualitative and quantitative data simultaneously. Also, the data collection instruments, data collection procedure, and data analysis procedure have been looked at, outlining strategies for ensuring the quality of research. Ethical considerations and limitations are also provided, offering a thorough understanding of the research methodology employed in the study.

CHAPTER FOUR

ANALYSIS OF DATA AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter presents an analysis of the data collected on the knowledge and practices employed by teachers to support dyslexic English language learners in Sekondi Sub Metro. The study employed both quantitative and qualitative methods, including questionnaires, focus group interviews, and classroom observations. Frequencies, percentages, means, and standard deviations were used to analyze the data collected. Analysis of the quantitative survey results organized according to the main research questions will be presented in the first part of this chapter. This is followed by a presentation of the key themes from the focus group interviews, which serve to corroborate and enrich the quantitative findings.

4.1 Analysis of Demographic Data

Data for this section were gathered through a questionnaire and analyzed to identify the demographic characteristics of the respondents, their training in special education needs, contact with dyslexic learners, and their knowledge of dyslexia.

4.1.1 Gender Distribution of Respondents

Table 2 shows that out of the samples 158 teachers, majority of respondents were female (n=115, 72.8%), with a smaller proportion being male (n=43, 27.2%). This gender distribution indicates that more female teachers participated in the study compared to their male counterparts. The higher participation of female teachers could be reflective of the general gender distribution within the teaching profession in the Sub Metro as observed in all the schools.

4.1.2 Age of Respondents

The data as shown in Table 2 reveals that the largest group of respondents were aged between 36 and 40 years (n=55, 34.6%). This was followed by those aged 31-35 years (n=49, 30.8%). Additionally, 24 respondents (15.4%) were aged 26-30 years, and an equal number of respondents (n=24, 15.4%) were aged between 51 and 60 years. Only a small percentage of respondents (n=6, 3.8%) were aged between 41-50 years, and there were no respondents in the 20-25 years age category. This distribution suggests that most of the teachers are in their mid-career phase, with a significant number nearing retirement. The fact that the majority are in the 31-40 years range could imply that these teachers have substantial experience and are likely to have developed various strategies to support students with dyslexia.

Table 4.1: Descriptive Statistics of Respondents

Variable	Sub-scale	Frequency	Percentage (%)
Gender	Male	43	27.2
	Female	115	72.8
	Total	158	100
Age (in years)	20 – 25	0	0
	26 – 30	24	15.4
	31 – 35	49	30.8
	36 – 40	55	34.6
	41 – 50	6	3.8
	51 - 60	24	15.4
	Total	158	100
Years of teaching	1 – 3 years	24	15.4
	4 – 6 years	18	11.5
	7 – 10 years	43	26.9
	Above 10 years	73	46.2
	Total	158	100

Professional Qualification	Diploma	18	11.5
	Bachelor's Degree	134	86.4
	Master's Degree	6	3.8
	PhD	0	0
	Total	158	100
Special Education Needs Training	Yes	103	65.4
	No	55	34.6
	Total	158	100
Special Education Needs Training specifically in Dyslexia	Yes	91	88.2
	No	12	11.8
Contact with dyslexic learners	Yes	115	73.1
	No	43	26.9
	Total	158	100
Teachers' perceived level of knowledge about dyslexia	Considerable	18	11.5
	Adequate	61	38.5
	Limited	61	38.5
	Very Limited	18	11.5
	Total	158	100

Source: Field Survey, (2024)

4.1.3 Years of Teaching Experience

Table 2 indicates that the majority of respondents (n=73, 46.2%) had more than 10 years of teaching experience, suggesting that most participants were seasoned teachers with extensive experience in the classroom. A smaller percentage of respondents (n=43, 26.9%) had between 7 to 10 years of experience, while 24 respondents (15.4%) had between 1 to 3 years of experience. The least represented group were those with 4 to 6 years of experience (n=18, 11.5%). This distribution reflects that the majority of the teachers have been in the profession long enough to

encounter diverse learning needs, including those of dyslexic learners. Their experience could potentially influence their approach to handling students with reading difficulties.

4.1.4 Professional Qualifications

The data collected reveals that the majority of respondents (n=134, 86.4%) hold a bachelor's degree as their professional qualification, indicating that most teachers in the sample possess a strong foundational academic background for their roles. A smaller proportion (n=18, 11.5%) have a diploma qualification, suggesting that while these teachers meet the minimum requirements for teaching, they may benefit from further professional development to align with the degree-holding majority.

Interestingly, only a few respondents (n=6, 3.8%) have attained a master's degree, reflecting a limited level of advanced professional training among the teachers. This highlights a potential gap in specialized knowledge and skills that could be particularly relevant for addressing challenges like supporting dyslexic learners.

4.1.5 Training in Special Education Needs

The data collected shows that a majority of respondents (n=103, 65.4%) reported having received training in special education needs. This indicates a relatively high level of awareness and preparation among teachers to deal with students who have special educational needs. However, a significant proportion (n=55, 34.6%) of the respondents had not received such training, suggesting that not all teachers are equally equipped to address the diverse needs of their learners.

4.1.6 Training in Dyslexia

Among those who had received training in special education needs, as show in Table 2, the majority (n=91, 88.2%) had received specific training in dyslexia. This suggests that most teachers with special education training are also knowledgeable about dyslexia, which is crucial for identifying and supporting learners with this specific learning difficulty. However, a small proportion (n=12, 11.8%) had not received such specific training, which could impact their ability to effectively support dyslexic learners.

4.1.7 Contact with Dyslexic Learners

Table 2 reveals that a majority of respondents (n=115, 73.1%) had contact with dyslexic learners. This suggests that most teachers are familiar with the challenges these students face and may have developed strategies to support them. However, 43 respondents (26.9%) reported not having had any contact with dyslexic learners, indicating that there is still a portion of the teaching workforce that may lack direct experience with this group of learners. The high percentage of teachers with contact with dyslexic learners is positive, as it implies that many are likely to be aware of the practical needs of these learners. This could influence their ability to implement effective support strategies in the classroom.

4.1.8 Teachers' Perceived Level of Knowledge about Dyslexia

Table 2 shows that the majority of respondents believed they either have "Adequate" (n=61, 38.5%) or "Limited" (n=61, 38.5%) knowledge of dyslexia. This indicates that while a considerable number of teachers feel reasonably confident in their understanding of dyslexia, an equal number perceive their knowledge as insufficient. Additionally, a smaller group of respondents (n=18, 11.5%) reported having

"Considerable" knowledge, and another 18 respondents (11.5%) indicated their knowledge was "Very Limited." The fact that most of teachers rated their knowledge as either "Adequate" or "Limited" suggests that there is room for improvement in professional development to enhance teachers' understanding of dyslexia. This could be crucial for improving educational outcomes for dyslexic learners.

4.2 Results and Analyses of the Research Questions

This section presents the results and discussion derived from the data collected from participants. Data was gathered using a questionnaire based on a four-point Likert scale, with response options coded as Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1. The scale ranged from a minimum score of 1 to a maximum of 4, and a cut-off mean score of 2.5 was used for interpretation. The summary and analysis of the findings are shown in the table below and further discussed in detail.

4.2.1 Research Question One: *What knowledge do teachers have about dyslexia among English language learners in Sekondi Sub- Metro inclusive schools?*

The research question aimed to assess teachers' knowledge regarding dyslexia, particularly among English language learners in Sekondi Sub-Metro inclusive schools. The data were analyzed using mean and standard deviation scores for various statements related to teachers' knowledge of dyslexia.

Table 4.2: Teachers' knowledge of dyslexia

statement	strongly agree (4)	agree (3)	disagree (2)	strongly disagree (1)	Mean (M)	Standard Deviation (SD)
• Dyslexia is a language-based learning disability.	109	24	18	6	3.5	0.84
• Teaching pupils with dyslexia requires extra classroom instructional time.	85	61	12	0	3.46	0.68
• Dyslexia is a neurological condition.	67	43	49	0	3.11	0.88
• Learners with dyslexia often perform poorly in all other aspects of academic work.	43	43	49	24	2.61	1.05
• People who are very intelligent can be dyslexic.	55	55	30	18	2.98	0.97
• Dyslexics learners see words and letters backwards	12	85	61	0	2.8	0.62
• I am able to identify a learner who is in need of a diagnostic assessment with regards to dyslexia.	55	85	18	0	3.23	0.74
• Dyslexia does not actually exist; it's just an excuse for laziness.	6	12	55	85	1.75	0.91
• Dyslexia can be outgrown even if learners do not receive any intervention	6	30	49	73	2.2	0.83
• Certain medications have been found to be effective in treating dyslexia	24	36	55	43	2.65	0.97
• Dyslexic learners should be in a special needs school and not in an inclusive school.	12	30	49	67	2.22	0.86
• Learners with dyslexia also have problems with spelling and/ or writing	61	49	30	18	2.95	0.94

• Multi-sensory teaching methods are considered to be particularly helpful to dyslexic pupils.	79	73	6	0	3.46	0.6
• Formal testing of reading, language, and writing skills is the only way to confirm a diagnosis of suspected dyslexia the only way to confirm a diagnosis of suspected dyslexia	49	55	49	6	3.1	0.86
• I am able to identify the characteristics of a dyslexic learner as opposed to that of a slow learner.	24	91	24	18	2.79	0.88
Average Mean and Standard Deviation	2.87	0.85				

Source: Field survey, (2024)

The results indicate that teachers strongly agreed with the statement that dyslexia is a language-based learning disability ($M = 3.50$, $SD = 0.84$). This suggests that most teachers have a clear understanding of the nature of dyslexia. Similarly, there was strong agreement that teaching learners with dyslexia requires extra classroom instructional time ($M = 3.46$, $SD = 0.68$), indicating that teachers recognize the additional challenges involved in educating dyslexic learners. Also, in considering the neurological aspects of dyslexia, teachers moderately agreed with the statement that dyslexia is a neurological condition ($M = 3.11$, $SD = 0.88$). This points to an awareness that dyslexia has a biological basis, although there might still be some confusion. In the same way, the statement that learners with dyslexia often perform poorly in all other aspects of academic work received moderate agreement ($M = 2.61$, $SD = 1.05$), reflecting some uncertainty among teachers about the broader academic impact of dyslexia.

Furthermore, teachers showed moderate agreement with the statement that people who are very intelligent can be dyslexic ($M = 2.98$, $SD = 0.97$). This suggests that while most teachers understand that dyslexia does not correlate with low intelligence, some misconceptions might still exist. Additionally, the statement that dyslexic learners see words and letters backward received moderate agreement ($M = 2.80$, $SD = 0.62$), highlighting a common but incorrect belief among teachers. There was also a strong agreement that teachers feel confident in identifying learners who need a diagnostic assessment for dyslexia ($M = 3.23$, $SD = 0.74$), indicating that teachers feel equipped to recognize signs of dyslexia. In contrast, the statement that dyslexia does not exist and is just an excuse for laziness was strongly rejected ($M = 1.75$, $SD = 0.91$), showing that teachers recognize dyslexia as a legitimate condition.

Again, the idea that dyslexia can be outgrown without intervention was disagreed with ($M = 2.20$, $SD = 0.83$), suggesting that teachers are aware of the need for support and intervention for dyslexic learners. However, the moderate agreement with the statement that certain medications can treat dyslexia ($M = 2.65$, $SD = 0.97$) indicates some confusion, as there is no medication that directly treats dyslexia. The notion that dyslexic learners should be in a special needs school rather than an inclusive school was generally disagreed with ($M = 2.22$, $SD = 0.86$), demonstrating support for inclusive education. Additionally, teachers moderately agreed with the statement that learners with dyslexia also have problems with spelling and/or writing ($M = 2.95$, $SD = 0.94$), reflecting awareness of the broader challenges dyslexic learners face.

Further, teachers strongly agreed that multi-sensory teaching methods are helpful for dyslexic pupils ($M = 3.46$, $SD = 0.60$), indicating recognition of the importance of diverse teaching strategies. There was also moderate agreement with the statement

that formal testing is the only way to confirm dyslexia ($M = 3.10$, $SD = 0.86$), reflecting recognition of the importance of formal assessments, though there may be room for a broader understanding of diagnostic methods. Additionally, teachers showed moderate agreement with the statement that they can distinguish between a dyslexic learner and a slow learner ($M = 2.79$, $SD = 0.88$). This indicates some level of confidence but also a need for further clarity.

The overall average mean score ($M = 2.87$, $SD = 0.85$) suggests that teachers in Sekondi Sub Metro have a moderate level of knowledge about dyslexia, with a mixture of accurate understanding and some persistent misconceptions. This emphasizes the need for continued professional development and training to enhance teachers' knowledge and ensure effective support for dyslexic learners in inclusive school settings.

4.2.2 Research Question Two: *What instructional practices do English language teachers adopt to create an inclusive educational environment to support dyslexic English language learners?*

This research question sought to explore the instructional practices teachers use to support dyslexic English language learners. The data was analyzed using mean and standard deviation scores, as shown in Table 4.

Table 4. 3: Instructional Practices Employed by Teachers

Statement	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Mean (M)	Standard Deviation (SD)
1. I frequently use differentiated instruction to support learners with dyslexia	67	73	12	6	3.27	0.79
2. I consistently integrate assistive technology in my lessons for learners with dyslexia	49	61	30	18	2.89	0.9
3. I extensively modify my teaching materials to accommodate dyslexic learners.	55	67	30	6	3.08	0.82
4. I frequently adjust my instructional methods to meet the needs of dyslexic learners.	73	61	18	6	3.27	0.79
Average Mean and SD					3.13	0.83

Source: Field Survey, (2024)

From the table, the results indicate that teachers generally adopt a range of instructional practices to support dyslexic English language learners. The statement "I frequently use differentiated instruction to support learners with dyslexia" had a mean score of 3.27 (SD = 0.79), indicating that the majority of teachers agree with this practice. Similarly, the statement "I frequently adjust my instructional methods to meet the needs of dyslexic learners" also had a mean score of 3.27 (SD = 0.79), further supporting the notion that teachers are actively modifying their teaching approaches to better assist these learners.

Also, the statement "I extensively modify my teaching materials to accommodate dyslexic learners" had a mean score of 3.08 (SD = 0.82), suggesting that teachers agree, albeit slightly less strongly, that they adjust their teaching materials for dyslexic students. On the other hand, "I consistently integrate assistive technology in

my lessons for learners with dyslexia" had a slightly lower mean score of 2.89 (SD = 0.90), indicating that while assistive technology is being used, it might not be as prevalent or consistent as other strategies.

Overall, the average mean score across these statements was 3.13 (SD = 0.83). This suggests that teachers in the Sekondi Sub Metro inclusive schools generally adopt various instructional practices to support dyslexic English language learners, with a slight variance in the consistency and extent of these practices.

4.2.3 Research Question Three: *What is the level of collaboration between general education teachers and special education experts in relation to dyslexia?*

This research question aimed to explore the extent of collaboration between general education teachers and special education experts in supporting dyslexic learners. The data was analyzed using mean and standard deviation scores, as presented in Table 5.

Table 4.4: Collaboration between Teachers and Experts

statement	strongly agree (4)	agree (3)	disagree (2)	strongly disagree (1)	Mean (M)	Standard Deviation (SD)
1. I regularly collaborate with special education experts to develop instructional practices for dyslexic learners	6	12	55	85	1.53	0.82
2. I find collaboration with special education experts in supporting learners with dyslexia very effective	43	49	36	30	2.53	1.06
3. I have received professional development on collaborating with	24	18	43	73	1.97	1.06

special education experts							
4. I believe collaborating with special education experts has a positive impact on learner outcomes	109	43	6	0	3.65	0.56	
Average Mean and SD					2.42	0.88	

Source: Field Survey, (2024)

From the table, the results reveal a mixed level of collaboration between general education teachers and special education experts. The statement "I regularly collaborate with special education experts to develop instructional practices for dyslexic learners" had a low mean score of 1.53 (SD = 0.82), indicating that regular collaboration is limited among the teachers surveyed. Also, the statement "I find collaboration with special education experts in supporting learners with dyslexia very effective" had a mean score of 2.53 (SD = 1.06), showing a moderate level of agreement, suggesting that while some teachers find collaboration effective, others may not have experienced its full benefits.

According to the data, the statement "I have received professional development on collaborating with special education experts" had a mean score of 1.97 (SD = 1.06), indicating that many teachers have not received adequate training in this area. However, the statement "I believe collaborating with special education experts has a positive impact on learner outcomes" received the highest mean score of 3.65 (SD = 0.56), demonstrating a strong belief among teachers that such collaboration positively influences learner outcomes.

The average mean score across these statements was 2.42 (SD = 0.88). This indicates that although teachers acknowledge the value of working with special education experts, the actual extent of collaboration and related professional development remains very low.

4.3 Discussion of Quantitative Findings

The research findings in relation to teachers' knowledge of dyslexia, the instructional practices they employ to create an inclusive classroom environment to support dyslexic learners effectively, and the level of collaboration between the teachers and special education experts are discussed in this section.

4.3.1 Teachers' Knowledge of Dyslexia

Research question one sought to investigate teachers' knowledge of dyslexia in some selected basic schools in Sekondi Sub Metro. From the data analysis, the results suggest that most teachers recognize dyslexia as a language-based learning disability and understand the need for additional classroom instructional time to support dyslexic learners. This awareness aligns with the literature, which defines dyslexia as a specific learning difficulty that primarily affects language skills such as reading and spelling (Snowling & Hulme, 2011). This understanding is crucial, as it reflects teachers' acknowledgment of the unique challenges faced by dyslexic learners and the need for tailored instructional approaches.

However, the study also reveals areas of confusion and uncertainty among teachers. While there is some awareness that dyslexia has a neurological basis, misconceptions persist, such as the belief that dyslexic learners see words and letters backward. This finding mirrors the study by Schabmann et al. (2020), which found that university instructors lacked essential information about the neurological aspects of dyslexia and

its appropriate diagnostic methods. The persistence of such misconceptions emphasizes the importance of comprehensive teacher training programs that directly address such misunderstandings, as suggested by Ness and Southall (2010) and Rose (2009).

The findings further indicate that while many teachers understand that dyslexia does not correlate with low intelligence, some misconceptions still exist. There is awareness among teachers that individuals with dyslexia can be very intelligent, which aligns with the research by Thompson (2013), who found that teachers in South Africa were aware of the complexity of dyslexia and its coexistence with high intelligence. However, the persistent uncertainty about this relationship suggests a lack of confidence in their understanding, potentially stemming from insufficient training and exposure to dyslexia-specific education. This aligns with the findings of Acheampong et al. (2019) in Ghana, where limited training led to gaps in teachers' knowledge about dyslexia.

Interestingly, the study found strong agreement among teachers regarding the need for intervention and support for dyslexic learners. Teachers rejected the notion that dyslexia can be outgrown without intervention and strongly opposed the idea that dyslexia is merely an excuse for laziness. These findings are consistent with Worthy et al. (2016), who observed that teachers expressed a desire to support dyslexic learners but felt uncertain about the appropriate interventions. Teachers in this current study also showed support for multi-sensory teaching methods, recognizing their effectiveness in aiding dyslexic learners, which aligns with best practices highlighted by Snowling and Hulme (2011) and Makgato et al. (2022). This awareness is a

positive indication that teachers are open to employing diverse strategies to accommodate the learning needs of dyslexic students.

Additionally, the study also suggests that teachers have a limited understanding of the various methods for diagnosing dyslexia. Many teachers believe that formal testing is the only way to confirm dyslexia, which indicates a narrow view of the diagnostic process. This reflects findings from Schabmann et al. (2020), which revealed gaps in teachers' knowledge of dyslexia diagnostics. While formal assessments play a crucial role, there are multiple ways to identify and support dyslexic learners through classroom observation and intervention strategies. This points to the need for a more nuanced understanding of dyslexia diagnosis, where teachers are equipped with knowledge of both formal and informal assessment techniques.

Moreover, the study indicates that while teachers have a basic understanding of dyslexia and the challenges it poses, misconceptions persist. Some teachers believe in the effectiveness of certain medications for treating dyslexia, a misconception that contrasts with the literature, which states that dyslexia requires educational and behavioral interventions rather than medication (International Dyslexia Association, 2002). Such misunderstandings highlight the necessity for continuous professional development and targeted training, as emphasized by Rose (2009) and Thompson (2013). This training should address common myths and provide teachers with evidence-based strategies for supporting dyslexic learners.

4.3.2 Instructional Practices Employed by Teachers

The analysis of research question two reveal that teachers in Sekondi Sub Metro adopt a variety of instructional practices to create an inclusive classroom environment in order to support dyslexic English language learners. The use of differentiated

instruction and adjustments in instructional methods, both of which received relatively high levels of agreement, suggest that teachers are aware of the need to tailor their teaching approaches to meet the diverse needs of dyslexic learners. This is consistent with the study by Yoro et al. (2020), which highlighted the success of differentiated techniques, such as cooperative learning, ability grouping, and curriculum differentiation, in helping dyslexic learners comprehend lessons despite their learning challenges.

Also, the moderate agreement with statements related to the modification of teaching materials indicates an acknowledgment among teachers of the importance of adapting resources to support dyslexic learners. This finding is somewhat aligned with Acheampong et al. (2019), who found that many teachers in Ghana did not employ specific strategies for dyslexic learners, instead relying on more general teaching methods. Again, the less frequent use of assistive technology, as indicated by a slightly lower mean score, suggests that while some teachers are incorporating technological tools to support dyslexic learners, it is not as widespread or consistent as other strategies. This finding is in line with Exeley (2003), who pointed out the significance of adapting instructional approaches to suit learners' preferences, such as visual and kinesthetic learning. The relatively lower prevalence of assistive technology use might be due to various factors, including a lack of resources, limited or no access to technology, and insufficient training in utilizing these tools effectively.

The average mean score of 3.13 from the analysis indicates a general willingness among teachers to adopt various instructional practices to support dyslexic learners, with some variance in consistency and extent. This also aligns with El Arbaoui (2022), who advocated for a range of techniques, such as reading aloud, visual aids,

and multisensory strategies, to support dyslexic learners. The moderate level of agreement with these practices suggests that while teachers are making efforts to accommodate dyslexic learners, there may still be a need for more focused professional development to enhance the implementation of specific strategies, including the consistent use of assistive technology and more extensive material modification.

4.3.3 Collaboration Between Teachers and Special Education Experts

The findings reveal that while teachers in Sekondi Sub Metro recognize the potential benefits of collaboration with special education experts in supporting dyslexic learners, the actual practice of collaboration is limited. The low level of regular collaboration suggests that although teachers see the value in working together with special education experts, they are not often engaging in such practices. This is consistent with the challenges highlighted by Pugach and Blanton (2009), such as lack of time for planning and differences in teaching philosophies. Despite this limited collaboration, teachers strongly believe in its positive impact on learner outcomes. The belief that collaboration can enhance educational outcomes aligns with studies by Friend and Cook (2013) and Murawski and Swanson (2001), which found that co-teaching and collaborative practices contribute to more effective learning environments for learners with disabilities, including dyslexia. However, the low mean score for the statement regarding regular collaboration indicates that teachers in this context are not experiencing these benefits first-hand, possibly due to a lack of common planning time and insufficient administrative support.

Furthermore, the moderate level of agreement on the effectiveness of collaboration suggests that some teachers who have had the opportunity to collaborate find it beneficial. This aligns with the findings of Scruggs et al. (2007), who observed that co-teaching facilitates differentiation and individualized instruction, benefiting learners with learning disabilities like dyslexia. However, the lower mean score of 1.97 for receiving professional development on collaboration suggests that many teachers may not have had adequate training in collaborative practices. This finding echoes the study by Pugach and Blanton (2009), which identified the need for structured professional development and support to overcome barriers to effective collaboration. While actual collaboration is limited, teachers' belief in the positive impact of collaboration on learner outcomes is strong. This suggests a discrepancy between teachers' attitudes and their actual practices. Also, the high mean score reflecting teachers' belief in the benefits of collaboration aligns with Friend et al. (2010) who emphasized the positive social and academic outcomes for learners in collaborative settings.

4.4 Conclusion

The main purpose of this study was to evaluate teachers' knowledge of dyslexia among English language learners in Sekondi Sub-Metro inclusive schools; identify instructional practices teachers adopt to support dyslexic English language learners, and also investigate the extent of collaboration between general education teachers and special education experts in supporting dyslexic ELLs.

The quantitative data analyzed highlights a moderate understanding and implementation of strategies related to dyslexia among teachers in Sekondi Sub Metro. With regard to teachers' knowledge of dyslexia, the results indicate a strong

recognition of dyslexia as a language-based learning disability. Teachers also acknowledge the need for extra instructional time and the effectiveness of multi-sensory teaching methods. However, some misconceptions persist, such as the belief that dyslexia involves seeing words and letters backward and the idea that certain medications can treat dyslexia. Despite these misconceptions, teachers largely reject the notion that dyslexia is an excuse for laziness and show support for inclusive education, thereby emphasizing the importance of interventions for dyslexic learners. In relation to instructional practices, the findings suggest that teachers frequently use differentiated instruction and adjust their teaching methods to meet the needs of dyslexic learners. There is also a moderate level of agreement on modifying teaching materials. However, the integration of assistive technology is less prevalent, indicating a potential gap in the resources or training available to teachers in this area. Overall, teachers demonstrated a willingness to adopt various instructional practices to support dyslexic learners, though the consistency and extent of these practices vary. Another aspect examined was the level of collaboration between general education teachers and special education experts, which was found to be notably limited. Although teachers strongly believe that such collaboration positively influences learner outcomes, their actual engagement with special education professionals remains low. Additionally, many teachers have not received sufficient professional development on effective collaboration, highlighting the need for more structured support and targeted training in this area.

Overall, the quantitative findings indicate that while teachers in the Sekondi Sub-Metro possess a moderate understanding of dyslexia and apply various instructional strategies to support dyslexic learners, several areas still require significant improvement. Misconceptions about dyslexia, limited use of assistive technology, and

infrequent collaboration with special education experts highlight the importance of continued professional development, increased access to resources, and enhanced collaborative efforts to provide more effective support for dyslexic learners in inclusive school settings.

4.5 Qualitative Analysis

4.5.1 Introduction

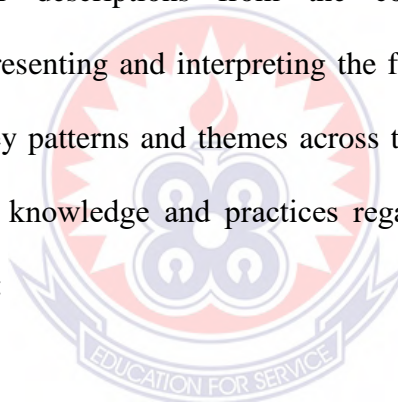
The qualitative phase of this study explored the perspectives of teachers in Sekondi Sub-Metro, Ghana. It focused on their knowledge of dyslexia and also examined the instructional practices they employ to support dyslexic English language learners, as well as the nature of collaboration between general teachers and special education experts. Focus group interviews were used to give teachers an opportunity to elaborate on their survey responses and provide more nuanced insights into the key issues that had emerged during the earlier quantitative phase. Focus group interviews are widely regarded as an effective method for capturing detailed information about participants' beliefs and experiences in a collaborative setting (Krueger & Casey, 2014). As noted by Snowling and Hulme (2011), understanding teachers' experiences is crucial, as their knowledge, collaboration and instructional practices play a important role in how dyslexic learners are supported in inclusive classrooms.

The focus group interviews were conducted between June 2024 and July 2024 in the respective schools of the teachers within the Sekondi Sub-Metro. Based on their survey responses, teachers were purposefully selected to gain deeper insight into their understanding of dyslexia and the practical strategies they implemented in the classroom. Each interview session lasted approximately an hour and comprised open-ended questions. These questions were designed to encourage participants throw more

light on their experiences, challenges, and instructional practices related to teaching dyslexic learners in inclusive settings. The open-ended nature of the interviews allowed teachers to reflect on their classroom experiences and share valuable insights, contributing to a deeper understanding of how dyslexia is managed in their educational contexts.

4.6 Thematic Analysis

The data collected from the focus group interviews were analyzed using thematic analysis, following Creswell and Creswell's (2023) six-step process: organizing and preparing the data, reading through the data for familiarization, coding the data, generating themes or descriptions from the codes, developing a narrative interpretation, and representing and interpreting the findings. This approach enabled the identification of key patterns and themes across the interviews, offering detailed insights into teachers' knowledge and practices regarding dyslexia. The following themes were generated:



Themes Generated

From the 21 initial codes, **4 main themes** were identified:

- 1. Teachers' Knowledge of Dyslexia**
- 2. Instructional Practices Employed by teachers**
- 3. Creating an Inclusive Classroom Environment**
- 4. Collaboration Between Teachers and Special Education Experts**

Table 4.5: Coding Scheme

Main Themes	Sub-Themes	Categories of Codes	Examples of Patterns of Response
Teachers' Knowledge of Dyslexia	Understanding of dyslexia	1. Reading and writing issues	<p>“Dyslexia is a learning disorder that occurs in learners who have difficulty in reading. They find it difficult to identify words and even read.” – Respondent 7</p> <p>"The one who cannot read and write." – Respondent 3</p> <p>"Children, not only children but inability to read." – Respondent 4</p> <p>“What I know is that dyslexia learners are learners who cannot read, write, or spell.” – Respondent 5</p> <p>" I have to say it's a learning disability. Where learners find it difficult to read." - Respondent 6</p>
		2. Letter recognition problems	<p>"A learner who has difficulty in pronunciation of words, identification of letters, sounds and so on." – Respondent 2</p> <p>"Learners with dyslexia, they find it difficult to identify words, and even read. They can't read, they can't identify words." - Respondent 7</p>

Sources of knowledge	1. Professional development	<p>" I acquired knowledge about this in school that is dealing with special needs learners and so through that I was able to know about dyslexia." - Respondent 1</p> <p>"During PLC. During that time, certain teachers choose certain topics."- Respondent 3</p> <p>" we read it in school and I also watched a film which depicts a child who has that problem." -Respondent 4</p> <p>"Through professional development."- Respondent 5</p> <p>"When I was doing my first degree, we did it. It's a course that we did." - Respondent 6</p> <p>" I think, training college, we learn something about special ability, and one of them was mentioned. I think dyslexia was part."-Respondent 8</p>
Identification of Dyslexic Learners	2. personal research	"Oh, by reading. Personal reading? Yeah, personal reading. Reading of articles and others." -Respondent 7
	3. <i>observation</i>	"Through observation. Observation is one." -Respondent 2
	1.Delayed responses and letter reversals	<p>"When I'm teaching a word and I want the child to pronounce it, and the child is not able to pronounce it or identify the beginning sound, I know the child is dyslexic." – Respondent 7</p> <p>"If the child is writing... if it is 'F,' he will turn it upside down." – Respondent 6</p> <p>"Yes. When they are doing the work, they sit down, they cannot do anything. That means the person has dyslexia." - Respondent 2</p>
	Observable behaviors	" Okay, so you may find a learner in a class who may be having difficulty. For instance, maybe you may write something on the board or maybe in a textbook expecting the learner to be able to pronounce that word or read that sentence and

whilst other colleagues may be such learner will be fumbling and if the learner is a shy type, he or she may decide not to read at all because he can't read at all. But when you give him maybe a different task to write, he can write by reading sometimes, yes." - Respondent 1

"Okay. But if a child is not able to identify the alphabets and their numbers."
Respondent 3

"And if you know a forgetful child, sometimes you pronounce the word. When you take some minutes, you come back again, the child will not be able to recognize the word or identify the letter. So through that, you can identify that this child is a possible dyslexia child."- Respondent 4

"Okay, I identified her by her writing and how she reads. She can read fluently, but you see that there are some breakages." -
Respondent 9

" Okay, I'm able to identify a dyslexia child when treating reading comprehension, if the learner finds it very difficult to pronounce a particular word. Sometimes even as a teacher I try to pronounce but the learner isn't able to pronounce that particular word." -Respondent 8

"At times you know that if you write, even simple words on the board, they are unable to read it." -
Respondent 5

Signs and
symptoms of
dyslexia

1. Pronunciation
issues

"Inability to pronounce simple sounds" - Respondent 2

"When a child looks at the word and they cannot tell the beginning sound." -
Respondent 3

			"Like the person will just look at you not trying even to make an attempt to pronounce the first letter." -Respondent 4:
		2. Delay and spelling issues	" Okay, not in my students, but I have seen people in other schools also. So as I was saying, you may find some learners, maybe they may be good in other subjects, even they can draw very well and you see, but when it comes to reading, they mostly find problems in reading, but they can listen and then write it for you."- Respondent 1
			"Some of them, even when you ask them a question, there's a delay in answering you. The way they will respond to the question, you see that. There is a delay, let me say. There's a delay in answering the question."- Respondent 10
			"They spell wrongly, the words" -Respondent 6
Instructional practices	Auditory Learning	1. Use of audio for learners	"Alright, so one of the signs is delay in answering questions."- Respondent 5 "when you play an audio for that learner, that audio can even serve as a guide for the learner to, at least, when they keep listening, maybe they may try to repeat those things. ." – Respondent 1
	Visual Learning	1. Flashcards and visual aids	"You blend the teaching materials... if you are teaching words, how to pronounce them, you can use blackboard illustration and flashcards." – Respondent 3
	One-on-One Support	1. Individualized teaching	"One-on-one teaching." – Respondent 4
	Kinesthetic Learning	1. Blending sounds with movement	"Sometimes I use tapping and also blending of sounds. If you are forming a word, let's say, let's come to the KG level. I give a child a card with "A" and another child with "M". Then they come together as they tap and they pronounce." -Respondent 5
	Phonics Instruction	1. Teaching sounds and blending words	"...we introduce learners to the sounds of the alphabet, how to blend the sounds. In addition, when they know the blending of the sounds and the words, they are able to pronounce the words in bits." Respondent 7

		" ...the phonics that we have also introduced. It also helps a dyslexia child to pick it up."-Respondent 2
Montessori Methods	1. Using Montessori teaching strategies	"The use of Montessori teaching, right, is one of the best strategies you can use." – Respondent 8
Differentiated Instruction	1. Adapting to the learning pace of students	"We are using differentiated learning." – Respondent 6
	2. Visual-Audio Integration	"mostly I play sounds for them to hear. Then after we do a voice, from the sound, we transcribe them on the board through the projector, so as it's playing, they see it, so sometimes we pause, or I pause, and ask them to go and identify that particular part to also try..." – Respondent 1
	3. One-on-One Assistance	"the child who is having difficulty should be one on one to guide the child." – Respondent 2
	4. Peer Grouping	"Those who can read, I put them together and give them a word to read. And those who cannot read, maybe I take them through letter identification, sounds identification." – Respondent 3
Assistive Technology Integration		"you group them into the abilities. And then when you group them, you give them some form of flashcards so that they can at least manipulate and make time. " – Respondent 5
	Use of Phones and Bluetooth	"I mostly do this in groups. So, let's say that a sentence has five or four words, then I call four people to come. So, when they come, I give them maybe a few seconds to deliberate on how to form it. " – Respondent 1 "Sometimes our phone and we have managed to purchase these Bluetooth gadgets. Sometimes we connect the Bluetooth to it. " – Respondent 2 "We use our phones. It's our phones that we use because we don't have any extra gadgets that we use." – Respondent 3

			"yes we do videos, sometimes youtube and we also use our phones."- Respondent 4
	Educational Apps		"I downloaded the phonics app on my phone... I allow them to listen to the original pronunciation." – Respondent 6
			"I downloaded the phonics app on my phone. Sometimes I try to pronounce it to them. Sometimes too I allow them to listen to the original way of pronouncing that particular word or sound. " – Respondent 5
			"At certain times, you see the apps that we are talking about. There are certain songs that go alongside it. These songs, children like songs. And it attracts them. While playing the song, they also sing along with you and the others." - Respondent 7
		Lack of Technology	" We have those phonetic apps there. There's phonetic apps there. So you get these apps and then you play the sounds for them too."-Respondent 11
	Resources and Tools	Use of Flashcards and writing board	"... we don't even have computer" Respondent 8
			"... we don't have the technology to teach them. "-Respondent 9
			"Okay, we have some cards. Learning cards we use in teaching them..." – Respondent 3
			"I use flashcards with words and letters and also charts."- Respondent 2
			" ...allowing the learner to even read a sentence on the board." -Respondent 4
Inclusive classroom Environment	Inclusive classroom setup	1. Encouragement and Positive Reinforcement 2. Use of TLMs (Teaching and Learning Materials)	"When I ask someone to read, and whether he's able to read or he cannot read, we all clap for the person." – Respondent 1
			"Please for the TLM that we made, we made it bold for those who cannot read some of the letters. They are bold, so they see it clearly and can pronounce the words." – Respondent 2

2. Financial Constraints	"And also it involves money. If you want a dyslexia child to learn you have to have a whole lot of materials and sometimes it's not about the posters, it involves a lot of money. Some special gadgets that you have to acquire for them..." – Respondent 4		
Time Constraints	"It's time-consuming. Because after the class, you have to apportion some time for them." – Respondent 1		
	" It is time-wasting. Sometimes you have to do remedial studies for them, which will take much time of your instructional hours." -Respondent 5		
	" It is time. Getting the time to spend on those children is very difficult for us as a teacher. So if they will inculcate that in the timetable. Time for special child or something. "-Respondent 6 "special attention is given to them."- Respondent 2		
Collaboration Between Teachers and Special Education Experts	Frequency of Collaboration	1. Infrequent Collaboration	"I have been here for seven years and I have not seen any teacher or any special needs expert helping those children.." – Respondent 7
			"Truthfully, in our line of service, it is very hard to find them around. Actually, for me, I have not seen them coming around to even check whether we have such children or what we are trying to help. I have not met any." -Respondent 6
			"There was one man who used to come around..." - Respondent 11
			"They used to. But since we reopened they haven't been here" -Respondent 4
			"They only come when a girl is pregnant." -Respondent 3
			" ... it's just formality. But for them coming down, no, no, no." - Respondent 2

Nature of Collaboration Impact on Instructional Practices	1. Limited Interactions 1. Change in Perception	"When he comes, we take the child to him at the office... We don't know actually what goes on there." – Respondent 1
Challenges in Collaboration	1. Time and Cost Barriers 2. Lack of Resources and Training	<p>"It's cost-intensive... Sometimes it will affect your instructional hours." – Respondent 1</p> <p>"We have mere knowledge... We also search on the phone and try to help." – Respondent 8</p> <p>"They should come here to at least have some in-service training for us." – Respondent 2</p> <p>"They should sometimes come around because we have a whole lot of special children in the school." – Respondent 9</p> <p>"The special training, intensive one should be given to teachers. So that we also become abreast." – Respondent 3</p> <p>"...we don't have one-on-one interaction with them." - Respondent 2</p>

Source: Focus Group Interview, (2024)

4.7 Explanation of Themes

4.7.1 Theme 1: Teachers' Knowledge of Dyslexia

Sub-Theme 1: Understanding of Dyslexia

Category 1: Reading and Writing Issues

When teachers were asked to define dyslexia based on their understanding, most teachers commonly described dyslexia as a learning disorder characterized by reading and writing difficulties. For instance, respondent 7 described it as,

"Dyslexia is a learning disorder that occurs in learners who have difficulty in reading. They find it difficult to identify words and even read."

Respondent 3 similarly stated,

"The one who cannot read and write."

Other respondents echoed this perspective, with respondent 4 noting,

"Children, not only children but inability to read,"

and respondent 5 adding,

"What I know is that dyslexic learners are learners who cannot read, write, or spell."

Thus, teachers' understanding primarily focuses on the obvious symptoms of dyslexia. For example, respondent 6 summarized this viewpoint by saying,

"I have to say it's a learning disability. Where learners find it difficult to read."

This indicates that teachers often recognize dyslexia based on its impact on reading and writing, without delving into the cognitive processes underlying these difficulties.

Category 2: Letter Recognition Problems

Some teachers further identified dyslexia with specific issues related to letter recognition and pronunciation. Respondent 2 believed that a dyslexic learner is

"A learner who has difficulty in pronunciation of words, identification of letters, sounds, and so on."

Respondent 7 also added that

"Learners with dyslexia ... find it difficult to identify words, and even read. They can't read, they can't identify words."

These responses illustrate that teachers link dyslexia to challenges in fundamental literacy skills such as letter recognition and phonological processing. This may also suggest that their understanding is grounded in observable language deficits. Thus, they have a narrow view of dyslexia as primarily a reading disorder.

Sub-Theme 2: Sources of Knowledge

Category 1: Professional Development

When asked how they acquired their knowledge of dyslexia, respondent 1 reported acquiring knowledge

"about this in school" during a course in "dealing with special needs learners"

Again, respondent 3 mentioned learning about dyslexia

"During PLC" (Professional Learning Communities sessions) and "through professional development."

while respondent 4 confirmed she

"read it in school and ... also watched a film which depicts a child who has that problem."

Respondent 6 noted that

"When I was doing my first degree, we did it. It's a course that we did,"

while respondent 8 added,

"I think, training college, we learned something about special ability, and one of them was mentioned. I think dyslexia was part."

These examples indicate that formal educational experiences and professional development play a significant role in shaping teachers' understanding of dyslexia. However, the knowledge gained from these sources often appears to be introductory, focusing on identifying the condition rather than offering in-depth insights into its complexities.

Category 2: Personal Research

In addition to the previous responses, respondent 7 expanded his knowledge of dyslexia through

"personal reading... of articles and others."

This self-directed learning demonstrates a proactive approach among some teachers to better understand dyslexia. However, the reliance on personal research could result in varying levels of knowledge depending on the quality and depth of the sources accessed.

Category 3: Observation

Still on the question of how teachers acquired their knowledge of dyslexia, respondent 2 cited

"observation"

as a means of understanding dyslexia.

This goes to suggest that direct classroom experience with students displaying learning difficulties contributes to teachers' understanding of dyslexia. However, while observation helps in identifying visible symptoms, it may not provide a comprehensive understanding of the underlying cognitive aspects of dyslexia.

Sub Theme 3: Identification of Dyslexic Learners

Category 1: Delayed Responses and Letter Reversals

When asked how they identify a dyslexic learner in their class, teachers mentioned behaviors such as delayed responses and letter reversals. In one instance, respondent 7 noted

"When I'm teaching a word and I want the child to pronounce it, and the child is not able to pronounce it or identify the beginning sound, I know the child is dyslexic."

Respondent 2 said

"...When they are doing the work, they sit down, they cannot do anything. That means the person has dyslexia."

Further, respondent 6 explained that

"If the child is writing... if it is 'F,' he will turn it upside down."

This indicate that teachers often use visible markers such as letter confusion and a lack of engagement during learning tasks as signs of dyslexia. While these can be indicative, they may only represent a subset of the broader spectrum of dyslexic challenges.

Category 2: Observable Behaviors

Many teachers rely on classroom performance to identify dyslexic learners.

Respondent 1 was of the view that

"You may find a learner in a class who may be having difficulty. For instance, maybe you may write something on the board or maybe in a textbook expecting the learner to be able to pronounce that word or read that sentence and whilst other colleagues may be such learner will be fumbling."

Respondent 3 mentioned that

"if a child is not able to identify the alphabets and their numbers."

he is dyslexic.

Some teachers provided further descriptions of observable behaviors, such as memory issues. For instance, respondent 4 said

"...if you know a forgetful child, sometimes you pronounce the word. When you take some minutes, you come back again, the child will not be able to recognize the word or identify the letter."

While respondent 9 explained that he

"identified" a dyslexic learner "by her writing and how she reads. She can read fluently, but you see that there are some breakages."

Respondent 1 said

"You may find some learners, maybe they may be good in other subjects, even they can draw very well... but when it comes to reading, they mostly find problems in reading."

Similarly, respondent 8 added that he is

"able to identify a dyslexia child when treating reading comprehension, if the learner finds it very difficult to pronounce a particular word."

and

"at times you know that if you write, even simple words on the board, they are unable to read it." (Respondent 5)

These responses show that teachers often use academic performance, particularly in reading and spelling, to identify dyslexic learners. The reliance on observable behaviors as a primary means of identifying dyslexic learners suggests that teachers are attuned to learners' classroom struggles. While these observations can be helpful, they may miss less obvious signs of dyslexia, as some learners with dyslexia may not exhibit obvious difficulties in reading but may still struggle with phonological processing or comprehension and working memory. Thus, without formal screening tools, their identification methods may lead to misidentifications or missed cases.

Sub-Theme 4: Signs and Symptoms of Dyslexia

Category 1: Pronunciation Issues

Teachers noted that students with dyslexia often struggle with pronunciation, particularly with simple sounds and letters. They concluded that a learner is dyslexic if he cannot

"pronounce simple sounds." (Respondent 2) or *"When a child looks at the word and they cannot tell the beginning sound."* (Respondent 3)

Respondent 4 cited an example

"Like the person will just look at you not trying even to make an attempt to pronounce the first letter."

These accounts emphasize phonological processing difficulties as a key indicator of dyslexia in the classroom. Teachers often look for signs like hesitation or inability to identify phonemes, which are commonly associated with dyslexic learners.

Category 2: Delay and Spelling Issues

Some of the teachers interviewed identify dyslexic learners through delays in responses and spelling issues. Respondent 10 related that

"Some of them, even when you ask them a question, there's a delay in answering you. The way they will respond to the question, you see that. There is a delay, let me say. There's a delay in answering the question."

Respondent 6 added that

"they spell wrongly"

while respondent 5 believe that

"one of the signs is delay in answering questions."

These responses suggest that teachers perceive delays in answering questions and frequent spelling mistakes as significant markers of dyslexia. This highlights teachers' intuitive understanding of the challenges these learners face. However, without formal assessment tools, there is a risk of misidentifying learners who may have general language processing difficulties rather than dyslexia. Some learners may exhibit slow responses due to anxiety, lack of confidence, or language barriers rather than a specific phonological deficit.

4.7.2 Theme 3: Instructional Practices Employed by Teachers

Sub - Theme 1: Auditory Learning

Category 1: Use of Audio for Learners

In response to the question of what instructional practices they utilize for dyslexic learners, respondent 1 confirmed that

"When you play an audio for that learner, that audio can even serve as a guide for the learner... when they keep listening, ...they may try to repeat those things."

This approach leverages auditory processing as a means to support learners who may struggle with traditional reading tasks. By repeatedly listening to audio content, students can enhance their language comprehension and pronunciation.

Sub-Theme 2: Visual Learning

Category 1: Flashcards and Visual Aids

Teachers involved in the interview often incorporate flashcards and other visual aids to support dyslexic students. For instance, respondent 3 explained that

"You blend the teaching materials... if you are teaching words, how to pronounce them, you can use blackboard illustration and flashcards."

Teachers use visual tools such as flashcards help reinforce learning by associating words with images, making it easier for dyslexic learners to grasp and retain new information.

Sub-Theme 3: One-on-One Support

Category 1: Individualized Teaching

One-on-one support is a key strategy mentioned by teachers to address the unique needs of dyslexic learners. Respondent 4 noted that they use

"One-on-one teaching"

Respondent 2 mentioned that

"The child who is having difficulty should be one on one to guide the child."

This individualized attention helps address specific learning needs and provides immediate feedback, which is crucial for the progress of dyslexic learners.

Sub-Theme 4: Kinesthetic Learning

Category 1: Blending Sounds with Movement

From the focus group interview, some teachers explained that they use movement and physical activities to enhance learning. This was confirmed by respondent 5 when she mentioned that

"Sometimes I use tapping and also blending of sounds. If you are forming a word, let's say, let's come to the KG level. I give a child a card with 'A' and another child with 'M'. Then they come together as they tap and they pronounce."

This method also involves the learner's body in the learning process, which can help reinforce the association between letters and sounds. By engaging multiple senses simultaneously, these strategies reinforce learning in a way that is more intuitive and memorable for learners with phonological processing difficulties. It also enhances literacy development and fosters greater engagement among dyslexic learners, ultimately improving their reading and spelling abilities.

Sub-Theme 5: Phonics Instruction

Category 1: Teaching Sounds and Blending Words

Phonics instruction is a common strategy used to teach dyslexic learners how to decode words. Respondent 7 stated that they

"... introduce learners to the sounds of the alphabet, how to blend the sounds. In addition, when they know the blending of the sounds and the words, they are able to pronounce the words in bits."

Respondent 2 also emphasized that

"...the phonics that we have also introduced. It also helps a dyslexia child to pick it up."

By focusing on phonics, teachers aim to strengthen learners' understanding of the relationship between letters and sounds, which is essential for reading development. The focus on sound-letter correspondence and blending strategies equips dyslexic learners with essential reading skills. Rather than guessing words based on context, learners develop decoding strategies that allow them to read fluently and independently. This method also enhances spelling abilities, as learners gain a stronger grasp of phonetic structures and word patterns.

Sub-Theme 6: Montessori Methods

Category 1: Using Montessori Teaching Strategies

Respondent 8 believe that

"The use of Montessori teaching, ... is one of the best strategies you can use."

The Montessori approach allows learners to explore and learn at their own pace, using tactile materials that can enhance understanding and retention, especially beneficial for dyslexic learners who thrive in a more interactive learning environment.

Sub-Theme 7: Differentiated Instruction

Category 1: Adapting to the Learning Pace of Students

Teachers also adapt their instructional methods to meet the varying learning paces of students. In a response, Respondent 1 said

"We are using differentiated learning."

Teachers interviewed recognize that learners, including those with dyslexia, learn at different paces and have unique learning needs. To ensure that every student receives appropriate support, teachers employ differentiated learning strategies that modify

teaching methods, materials, and assessments to match individual abilities and learning styles.

Category 2: Audio-Visual Integration

Another instructional practice identified by the teachers was the use of multi-sensory teaching where they integrate visual and auditory elements in their instruction.

Respondent 1 shared that

"Mostly I play sounds for them to hear. Then after we do a voice, from the sound, we transcribe them on the board through the projector, so as it's playing, they see it, so sometimes we pause, or I pause, and ask them to go and identify that particular part to also try."

Integrating audio and visual elements in teaching creates a dynamic and inclusive learning environment for dyslexic learners. By combining sound, text, and imagery, teachers help learners develop stronger language processing skills, improve their reading fluency, and boost their confidence in literacy-related tasks.

Category 3: One-on-One Assistance

Teachers in the interview also mentioned one-on-one assistance as a strategy they use to provide personalized support to learners with dyslexia. This approach involves direct, focused engagement between the teacher and the student, ensuring that the learner receives targeted guidance based on their unique challenges and learning pace.

Respondent 2 agreed that

"the child who is having difficulty should be..." handled

"...one on one to guide the child."

By providing personalized interventions, teachers can bridge learning gaps, build learners' confidence, and create a more inclusive classroom environment where every child has the opportunity to develop literacy skills successfully.

Category 4: Peer Grouping

Peer grouping is another strategy teachers use to support dyslexic learners.

Respondent 3 explained that

"Those who can read, I put them together and give them a word to read. And those who cannot read, ... I take them through letter identification, sounds identification."

Respondent 5 added

"You group them into the abilities. And then when you group them, you give them some form of flashcards so that they can at least manipulate..."

Again, respondent 1 noted that

"I mostly do this in groups. So, let's say that a sentence has five or four words, then I call four people to come. So, when they come, I give them maybe a few seconds to deliberate on how to form it."

These group activities encourage collaborative learning and create an inclusive environment where struggling learners receive peer support, develop confidence, and engage in meaningful literacy activities. This approach enhances reading skills and also strengthens teamwork, communication, and social-emotional growth.

Sub-Theme 8: Assistive Technology Integration

Category 1: Use of Phones and Bluetooth

Despite resource limitations, teachers in this study creatively integrate assistive technology to enhance learning for dyslexic students. The use of phones, bluetooth devices, and educational apps provides auditory and visual support, improving learners' access to content in multiple formats. However, some teachers also face challenges due to the lack of advanced technological resources, limiting their ability to fully implement assistive technology strategies.

For example, respondent 2 stated

"Sometimes our phone, and we have managed to purchase this Bluetooth gadget. Sometimes we connect the Bluetooth to it."

Respondent 3 also confirmed that

"We use our phones. It's our phones that we use because we don't have any extra gadgets that we use."

While respondent 4 added

"yes we do videos, sometimes Youtube and we also use our phones."

Category 2: Educational Apps

Most of the teachers interviewed leverage educational apps to facilitate phonics and pronunciation practice. Respondent 6 shared that

"I downloaded the phonics app on my phone... I allow them to listen to the original pronunciation."

After playing the sounds on the App, respondent 5 sometimes

"try to pronounce it to them" or "allow them to listen to the original way of pronouncing that particular word or sound."

similarly, respondent 11 mentioned that

" We have those phonetic Apps there... So you get these apps and then you play the sounds for them too."

While some also take advantage of the fact that

" there are certain songs that go alongside" the sounds on the App.
(Respondent 7)

They further explain that because

"children like songs ... it attracts them" and "while playing the song, they also sing along with you and the others." (Respondent 7)

Sub-Theme 9: Lack of Technology

Category 1: Resource Limitations

Some teachers expressed concerns about the lack of technological resources.

Respondent 8 complained that

"... we don't even have computers."

Respondent 9 added that

"... we don't have the technology to teach them."

The integration of mobile phones, bluetooth speakers, and phonics apps has transformed how teachers support dyslexic learners in resource-limited classrooms. By maximizing available technology, teachers ensure that students receive multisensory learning experiences, combining auditory, visual, and interactive elements to improve phonics, reading fluency, and engagement. However, the lack of institutional support and access to advanced assistive tools remains a major barrier.

Sub-Theme 10: Resources and Tools

Category 1: Use of Flashcards and Writing Board

In the absence of advanced technological tools, teachers rely on traditional instructional materials such as flashcards and writing boards to support dyslexic learners. These resources serve as tactile and visual learning aids, helping learners with letter recognition, word decoding, and reading fluency. Respondent 3 confirmed that

"...we have some cards. Learning cards we use in teaching them."

Respondent 2 added that

"I use flashcards with words and letters and also charts."

Furthermore, respondent 4 noted that because there are no technological tools, they allow

" the learner to ... read a sentence on the board."

Despite limited access to technology, teachers explained that they adapt their methods using flashcards and writing boards. This ensures that dyslexic learners receive structured, visual, and interactive literacy instruction that aligns with their learning needs.

4.7.3 Theme 2: Creating an Inclusive Classroom Environment

Sub-Theme 1: inclusive classroom setup

Category 1: Encouragement and Positive Reinforcement

In response to how teachers create inclusive classroom environments, they emphasized the importance of encouragement and positive reinforcement to foster a supportive classroom environment. Respondent 1 said

"When I ask someone to read, and whether he's able to read or he cannot read, we all clap for the person."

Thus, by celebrating every effort, regardless of the outcome, teachers create a positive atmosphere where students feel encouraged to participate without the fear of failure.

Category 2: Use of TLMs (Teaching and Learning Materials)

Most teachers interviewed utilize teaching and learning materials (TLMs) tailored to the needs of dyslexic learners. These TLMs were designed by the teachers themselves as discussed by respondent 2

"Please for the TLM that we made, we made it bold for those who cannot read some of the letters. They are bold, so they see it clearly and can pronounce the words."

Respondent 5 said

"I have charts of words and objects pasted there. So if I want the child to identify, I quickly point to a chart or a word. I point to an object or a word then the child goes there to show me that object."

Respondent 6 further noted that

"We have these sounds with words. And then we paste them for these children to be able to manipulate with them. We also have flashcards that we give to them so that they can also engage themselves with these flashcards. And sentence cards as well."

By using bold letters, charts, flashcards, and sentence cards, teachers make reading materials more accessible, helping dyslexic learners recognize and understand words more easily.

Category 3: Seating Arrangements

When teachers were asked how they ensured a classroom environment that is inclusive, most of them explained that they organized seating arrangements to facilitate learning for dyslexic students. For example, respondent 3 stated that

"... with the sitting arrangements, we mix them up... We mix them up in a group. Those who are good in that aspect, we mix them with those who are not all that okay, so that they can pick from their friends."

Respondent 4 added that

"Most of them sit in front of the class so that they can hear properly maybe some of them have hearing disabilities also."

Teachers strategically placed dyslexic learners near peers who can assist them and in positions where they can hear more clearly. This approach is aimed to promote peer support and ensure that learners with additional needs are not isolated.

Sub-Theme 2: Specific Accommodations

Category 1: Encouraging Participation

In order to make dyslexic learners feel included in the classroom, respondent 1 indicated that they actively

"... involve them in the activities... that are performed at class..."

Respondent 2 suggested that in order to make dyslexic learners feel included in the class, you have to

"Let them imitate... let the child feel free to imitate what the teacher wants the child to do."

Respondent 3 encourages group work because children

"...learn from their friends."

They also believed that encouraging dyslexic learners to participate actively and even take on leadership roles in group activities helps build their confidence and sense of belonging in the classroom. For instance, respondent 4 shared that

"... When it's even group work, I sometimes even ask her to lead."

Sub-Theme 3: Challenges in Creating an Inclusive Environment

Category 1: Resource Limitations

The teachers involved in the focus group interviews complained of unavailability of specialized resources for supporting dyslexic learners. Respondent 3 stated that

"... we don't have special gadgets that aid in supporting them and helping them ..."

Respondent 7 was certain that they would be able to support dyslexic learners better if there were

"able to get concrete materials..."

Respondent 8 lamented that

"The government knows that we are lacking so many things. Our facilities are in bad, deplorable condition."

The teachers agreed that the lack of specialized tools and materials, such as gadgets designed for dyslexia support, hinders the effectiveness of instructional practices.

Category 2: Financial Constraints

Another challenge teachers identified in creating an inclusive classroom was financial constraints. Respondent 4 noted that, creating an inclusive classroom

"... involves money."

Thus, providing adequate support for dyslexic learners requires investment in specialized materials and technology, which can be expensive.

Respondent 4 further explain that

"if you want a dyslexia child to learn, you have to have a whole lot of materials and sometimes it's not about the posters, it involves a lot of money. Some special gadgets that you have to acquire for them..."

Category 3: Time Constraints

Teachers also highlighted time constraints as a major barrier to providing adequate support. Providing individualized support for dyslexic learners requires additional time beyond regular classroom instruction. According to respondent 1,

"It's time-consuming. Because after the class, you have to apportion some time for them."

Respondent 5 added that

"It is time-wasting. Sometimes you have to do remedial studies for them, which will take much time of your instructional hours."

Furthermore, respondent 6 commented that

"It is time. Getting the time to spend on those children is very difficult for us as a teacher. So if they will inculcate that in the timetable. Time for special child or something."

Again, because

"Special attention is given to them" (Respondent 2)

teachers often struggle to find the necessary time to offer remedial support, indicating the need for more structured time allocations in the school timetable to address the needs of these students.

4.7.4 Theme 4: Collaboration Between Teachers and Special Education Experts

Sub-Theme: Frequency of Collaboration

Category 1: Infrequent Collaboration

This theme delves into the collaboration between general education teachers and special education experts in supporting dyslexic English language learners in Sekondi Sub Metro. It highlights the frequency and nature of this collaboration, its impact on instructional practices, and the challenges teachers face in fostering a collaborative approach.

Many teachers interviewed reported infrequent collaboration with special education experts, which affects their ability to support dyslexic learners effectively.

Respondent 7 noted that

"I have been here for seven years and I have not seen any teacher or any special needs expert helping those children."

Respondent 6 added

"Truthfully, in our line of service, it is very hard to find them around. Actually, for me, I have not seen them coming around to even check whether we have such children or what we are trying to help. I have not met any."

According respondent 11,

"There was one man who used to come around..."

Respondent 4 confirmed that

"They used to. But since we reopened, they haven't been here."

While respondent 3 observed that

"They only come when a girl is pregnant."

Respondent 2 remarked that the few visits from special education experts were actually

"... just formality. But for them coming down, no, no, no."

Their responses indicate a general lack of consistent support from special education experts. The current lack of collaboration undermines the efforts of teachers in creating an inclusive and supportive learning environment for dyslexic learners and has led teachers to feel isolated in their efforts to assist dyslexic learners.

Sub Theme 2: Nature of Collaboration

Category 1: Limited Interactions

When asked to describe the nature of collaboration teachers have with special education experts who visited the schools, respondent 1 explained that

"When he comes, we take the child to him at the office... We don't know actually what goes on there."

In the same vein, respondent 2 complained that

"...we don't have one-on-one interaction with them. "

Sub-Theme 3: Impact on Instructional Practices

There was no response from the teachers interviewed when asked if collaborating with special education experts have had any impact on their instructional practices. The lack of responses may be attributed to teachers' minimal or nonexistent collaboration with special education experts. This highlights the need for more meaningful collaboration where general education teachers are actively involved in the process to gain insights into specialized strategies and techniques to better support dyslexic learners in the classroom.

Sub - Theme 4: Challenges in Collaboration

Category 1: Time and Cost Barriers

When answering the question on the challenges they face in collaboration, teachers identified time and financial constraints as significant barriers to collaboration. For example, respondent 1 replied that

"It's cost-intensive" and "... Sometimes it will affect your instructional hours."

This indicates that even when collaboration is desired, the associated costs and the time required can impede its implementation, particularly in resource-constrained environments.

Category 2: Lack of Resources and Training

Many teachers interviewed expressed the need for more training and resources to effectively support dyslexic learners. Respondent 8 believe that they

"... have mere knowledge..." and "... also search on the phone and try to help."

The teachers pointed out that

"...we don't have one-on-one interaction with them."

Respondent 2 suggested that special education experts

"... should come..." to the schools *"...to at least have some in-service training for us."*

Similarly, respondent 9 emphasized that special education experts

"... should sometimes come around because we have a whole lot of special children in the school."

Respondent 3 requested that in connection to

"The special training, intensive one should be given to teachers. So that we also become abreast."

From the above responses, there seem to be a critical gap in the provision of adequate training and resources. The teachers expressed a need for more intensive and continuous training from special education experts to better equip them with the skills and knowledge required to support dyslexic learners.

4.8 Discussion of Qualitative Findings

This section presents the qualitative findings of teachers' understanding of dyslexia, the instructional strategies they use to create an inclusive classroom environment for dyslexic learners, and the extent of collaboration between teachers and special education specialists.

4.8.1 Theme 1: Teachers' Knowledge of Dyslexia

The qualitative findings from the focus group discussions reveal that teachers in Sekondi Sub Metro have a foundational understanding of dyslexia, which they primarily associate with reading and writing difficulties. This focus on observable symptoms such as letter recognition problems, delayed responses, and pronunciation

issues reflects a surface-level understanding of the disorder, rather than an in-depth comprehension of its cognitive and neurological underpinnings. This corroborates with Schabmann et al. (2020) and Worthy et al. (2016) who argue that many teachers possess a basic understanding of dyslexia but often lack in-depth knowledge.

Reading and Writing Issues

The majority of teachers interviewed identified dyslexia as a learning disorder marked by difficulties in reading and writing. This perception aligns with previous studies by Ness and Southall (2010), which found that teachers commonly recognize dyslexia through its impact on literacy skills. Teachers in this study similarly focused on the visible aspects of dyslexia, such as challenges with reading fluency and spelling, as seen in other studies like Acheampong et al. (2019) and Makgato et al. (2022). These findings suggest that while teachers are able to identify dyslexic learners based on their reading and writing struggles, there is limited recognition of the cognitive processes, such as phonological awareness and working memory deficits, that underlie these challenges. As a result, teachers may not fully understand the broader implications of dyslexia on learning, which could limit their ability to provide comprehensive support.

Letter Recognition Problems

Several teachers in the focus group discussions linked dyslexia with specific issues related to letter recognition and phonological processing. This understanding is consistent with Worthy et al. (2016), who found that teachers frequently identify dyslexic learners by observing difficulties in letter-sound recognition and pronunciation. However, similar to the findings of Schabmann et al. (2020), the teachers in Sekondi Sub Metro appear to focus primarily on these overt language-related symptoms without fully grasping the deeper neurological and cognitive

aspects of dyslexia, such as deficits in phonological processing, as highlighted by Snowling and Hulme (2011). This indicates a need for more comprehensive professional development programs that address the full range of dyslexic characteristics, beyond the visible literacy challenges.

Sources of Knowledge

The findings also suggest that teachers' knowledge of dyslexia is drawn from different sources, including professional development programs, formal education, personal research, and classroom observation. Many teachers reported gaining their foundational knowledge through professional development sessions, which aligns with the findings of Rose (2009) and Thompson (2013), who emphasize the importance of teacher education programs in equipping educators with the necessary skills to identify and support dyslexic learners. However, the teachers' knowledge appears to be largely introductory, as the focus group discussions revealed gaps in their understanding of more complex aspects of dyslexia, such as cognitive and neurological factors. This finding is consistent with the work of Schabmann et al. (2020), who found that while teachers possessed some basic knowledge of dyslexia, they often lacked a deeper understanding, particularly in relation to diagnostic assessments and effective interventions.

Identification of Dyslexic Learners

The findings from the focus group discussions highlight that teachers in Sekondi Sub Metro primarily rely on observable behaviors, such as delayed responses, letter reversals, and reading difficulties, to identify dyslexic learners. This approach to identification is consistent with the findings of Acheampong et al. (2019), which reported that many Ghanaian teachers often confuse dyslexia with other learning difficulties due to a heavy reliance on observable academic performance indicators.

While visible markers like letter reversals and reading challenges are useful in identifying potential cases of dyslexia, they may not provide a full picture of the disorder. Research by Ness and Southall (2010) suggests that teachers need a more nuanced understanding of dyslexia that encompasses both its cognitive and behavioral manifestations. The current identification methods used by teachers in Sekondi Sub Metro, therefore, may be somewhat limited in capturing the full range of dyslexic challenges. This highlights the importance of enhancing teacher training programs to include deeper insights into the underlying cognitive processes associated with dyslexia, such as deficits in phonological processing and working memory, to improve the accuracy and effectiveness of dyslexia identification and support strategies.

4.8.2 Theme 3: Instructional Practices Employed by Teachers

The qualitative findings reveal that teachers in the Sekondi Sub Metro employ a variety of instructional practices to support dyslexic learners, focusing on multisensory approaches, individualized teaching, and the integration of available technology.

Audio Resources and Visual Learning

The use of audio resources and visual aids, such as flashcards, was frequently highlighted by teachers as a core strategy for supporting dyslexic learners. This aligns with the work of El Arbaoui (2022), who emphasizes the importance of multisensory approaches in teaching dyslexic learners. El Arbaoui advocates for techniques like reading aloud and visualizing vocabulary, which help reinforce concepts through auditory and visual channels. Teachers in the study mentioned using audio recordings and visual tools to provide diverse learning experiences, reinforcing learning through

multiple senses. This strategy effectively caters to the needs of dyslexic learners by strengthening their language comprehension and retention.

One-on-One Support and Kinesthetic Learning

Teachers also emphasized the use of one-on-one teaching and kinesthetic learning, which aligns with Exeley's (2003) findings that kinesthetic learning is often preferred by dyslexic learners. Exeley found that incorporating movement-based activities, such as hands-on tasks and physical engagement, leads to better academic outcomes for dyslexic students. Teachers in Sekondi Sub Metro echoed this, describing the use of techniques like blending sounds with movement and tapping to help learners internalize language concepts. Personalized instruction, delivered in a one-on-one setting, allows teachers to adapt their approach to the specific needs of dyslexic learners, further enhancing the effectiveness of their teaching strategies.

Differentiated Learning and Phonics Instruction

Differentiated learning and phonics instruction were also identified as key strategies employed by teachers. These methods involve adjusting instructional techniques to accommodate different learning paces and focusing on phonological awareness, a vital skill for reading development. Yoro et al. (2020) noted the success of curriculum differentiation and phonics in helping dyslexic learners understand and assimilate lessons. The teachers in Sekondi Sub Metro use similar approaches, teaching sounds and blending words to improve dyslexic learners' ability to decode language. This aids in reading development and also strengthens the learners' overall comprehension skills.

Montessori Methods

The adoption of Montessori methods by some teachers reflects a more inclusive, student-centered approach. Montessori techniques emphasize exploratory and hands-on learning, which are particularly beneficial for dyslexic learners. This approach allows students to interactively engage with the material, catering to their specific learning needs. The use of Montessori methods is consistent with Yoro et al. (2020), who advocate for instructional practices tailored to dyslexic learners' unique challenges. Montessori methods provide teachers with a valuable tool for supporting dyslexic learners effectively as it encourages a flexible learning environment.

Assistive Technology and Resource Limitations

While teachers in this study made efforts to integrate assistive technology, such as smartphones and educational apps, they also reported a lack of access to advanced technological tools. This finding resonates with Acheampong et al. (2019), who identified significant gaps in the availability of resources and practical training for supporting dyslexic learners in Ghana. Teachers mentioned using available tools, like phonics apps, to assist learners, but a more comprehensive approach to professional development could enhance learning outcomes for dyslexic students. The limited access to technology highlights a broader issue of resource constraints that many teachers face.

Group Activities and Collaborative Learning

The use of group activities and peer grouping, as described by the teachers, aligns with strategies discussed by Yoro et al. (2020), who found that cooperative and peer learning can be successful in supporting dyslexic learners. Teachers in this study reported using group-based tasks to promote collaborative learning, allowing dyslexic learners to work alongside their peers in an inclusive environment. This approach

encourages active participation and also provides an additional layer of support, as learners benefit from peer interaction. El Arbaoui (2022) similarly argued that group activities, combined with multisensory reinforcement, can enhance learners' understanding and retention of information. This collaborative learning environment fosters inclusivity, making it easier for dyslexic learners to engage with the content and receive support from both teachers and classmates.

4.8.3 Theme 2: Creating an Inclusive Classroom Environment

The qualitative findings suggest that teachers in Sekondi Sub Metro employ several strategies to create an inclusive classroom environment for dyslexic learners. These strategies include fostering a positive classroom atmosphere, using adapted teaching and learning materials (TLMs), and implementing strategic seating arrangements. Scholars like Shaywitz (2003) and Elliott and Grigorenko (2014) emphasize that teachers with a deeper understanding of dyslexia are more equipped to provide timely interventions, helping dyslexic learners thrive academically. In this study, teachers' use of positive reinforcement, such as clapping for students' efforts regardless of correctness, reflects a supportive approach. This method helps build dyslexic learners' self-esteem and encourages their active participation, which is essential for their success in an inclusive classroom.

Positive Classroom Atmosphere and Use of TLMs

The findings demonstrate that teachers use TLMs like bold letters, flashcards, and charts to make learning materials more accessible to dyslexic learners. This practice aligns with Rose's (2009) argument that inclusive environments not only support learners with disabilities but also promote diversity and collaboration within the classroom. By making reading materials visually accessible, teachers in Sekondi Sub

Metro are addressing the specific needs of dyslexic learners. According to Abraham (2014) and Acheampong et al. (2019), many teachers in Ghana have average knowledge of dyslexia, which can limit the implementation of effective inclusive strategies. However, the use of these TLMs suggests that teachers are making efforts to accommodate the needs of their dyslexic learners, although they may not fully understand the deeper cognitive aspects of the condition.

Specific Accommodations and Engagement

The teachers' efforts to involve dyslexic learners in classroom activities, encouraging them to participate and even take on leadership roles, illustrate an inclusive approach. Agbenyega and Deku (2011) notes that teachers with greater knowledge of learning disabilities are more likely to implement successful inclusive practices. In this study, teachers fostered an environment where dyslexic learners felt valued. This also in line with Avramidis and Norwich's (2002) findings that teacher attitudes and knowledge significantly influence inclusive education. By promoting active participation and leadership among dyslexic learners, teachers support their academic development and foster empathy and collaborative learning among all students. In addition, Rose (2009) argues that inclusive environments benefit not only dyslexic learners but also promote broader social and emotional learning for all students, reinforcing the importance of diversity and peer collaboration.

Challenges in Creating an Inclusive Environment

Despite these efforts, the findings reveal several challenges teachers face in creating an inclusive environment, particularly resource limitations, financial constraints, inadequate training, and time constraints.

These challenges align with the findings of Childers (2020), who reported that insufficient training and persistent misconceptions about dyslexia hinder effective inclusion. Teachers in the Sekondi Sub-Metro also voiced frustrations about the absence of specialized tools and resources needed to support dyslexic learners—a concern similarly highlighted by Acheampong et al. (2019), who noted the limited resources available to Ghanaian teachers. The financial constraints further exacerbate the situation, as teachers are unable to access the materials necessary to provide targeted support.

Another significant challenge that emerged is time constraints, particularly when it comes to providing individualized support for dyslexic learners. Teachers indicated that the time needed to offer extra assistance was often not built into the school timetable, making it difficult to balance their instructional duties. This finding resonates with Van der Leij (2013), who argued that professional development programs could enhance teachers' ability to manage their time and resources more effectively, thereby improving their efficacy in inclusive classrooms.

4.8.4 Theme 4: Frequency and Nature of Collaboration

The qualitative findings from the study reveal that collaboration between general education teachers and special education experts in Sekondi Sub Metro is infrequent and often lacks meaningful engagement. Many teachers reported having limited or superficial interactions with special education experts, which hinders their ability to adequately support dyslexic learners. This finding contrasts with much of the existing literature, which emphasizes the benefits of regular and effective collaboration between educators. For instance, Friend and Cook (2013) stress that collaboration is

very important in fostering an inclusive and effective learning environments that cater to the diverse needs of all learners, including dyslexics.

The lack of collaboration observed in this study also contrasts with the findings of Murawski and Swanson (2001), whose meta-analysis demonstrated that co-teaching models, where instructional responsibilities are shared by general and special educators, enhance positive academic outcomes for learners with disabilities. co-teaching facilitates the differentiation of instruction and ensures that learners receive tailored support, which is crucial for dyslexic students. Scruggs et al. (2007) similarly found that co-teaching improves learner engagement and also enhances academic performance through individualized instruction. However, the findings from the Sekondi Sub Metro suggest that such collaborative practices are not being effectively implemented. Teachers reported feeling isolated in their efforts to support dyslexic learners, with sporadic and insufficient interactions with special education experts. As a result, the potential benefits of collaboration, such as improved instructional practices and targeted support for dyslexic learners, are not being fully realized in this context.

Challenges in Collaboration

The challenges encountered by teachers in the Sekondi Sub-Metro in establishing collaboration such as time constraints, financial limitations, and insufficient resources and training, mirror the barriers outlined by Pugach and Blanton (2009). These scholars highlighted that a lack of adequate planning time, minimal administrative support, and differing instructional philosophies frequently impede effective collaboration between general and special education teachers. Likewise, participants in this study reported that collaboration is demanding in terms of time and resources

and expressed dissatisfaction with the limited availability of formal training. This suggests that the systems and structures required to facilitate meaningful collaboration between general educators and special education experts are insufficient within the Sekondi Sub-Metro.

Furthermore, the study highlights that administrative support, which is crucial for fostering collaboration, is insufficient. Magiera and Zigmond (2005) emphasize the importance of administrative backing, structured planning time, and a coordinated effort to facilitate collaboration between educators. The findings from Sekondi Sub Metro reveal that teachers feel a need for more direct interaction with special education experts, yet such opportunities are scarce. Without adequate time, resources, or support from the administration, teachers are left to rely on self-researched methods to support dyslexic learners, which may not be as effective as structured and collaborative practices involving both general and special educators. There is therefore the need for more structured collaboration, increased administrative support, and professional development opportunities that focus on co-teaching and collaborative practices. By addressing these challenges, teachers in Sekondi Sub Metro may be better equipped to provide the tailored support that dyslexic learners need to succeed academically.

4.9 Observation

4.9.1 Introduction

In order to confirm and verify the claims made by teachers during the survey and focus group discussions, an observational study was conducted with five purposefully selected teachers. These teachers, who had direct encounters with dyslexic learners and over three years of experience teaching English, were observed to determine how

their knowledge and reported practices aligned with their actual classroom behaviors. Four female teachers and a male teacher all between the ages of 35 and 50 were observed. The observation focused on research questions 2: the specific instructional practices adopted to create an inclusive educational environment in order to support dyslexic learners. Each observation lasted for the entire duration of the English class session, allowing a comprehensive evaluation of teaching practices and classroom dynamics.

4.9.2 Analysis of Observation Data

This segment of the study explores the consistency between the teachers' self-reported practices and their actual behavior in the classroom. It also sheds more light on the real-world application of the methods discussed in the survey and focus groups. The results provide deeper insights into the effectiveness of instructional practices, the inclusivity of classroom environments, and the extent to which teachers are able to implement these practices amidst challenges such as resource limitations.

4.9.2.1 Research Question Two: *What instructional practices do English language teachers adopt to create an inclusive educational environment to support dyslexic English language learners?*

This research question aimed to identify the instructional practices teachers adopt to create an inclusive environment and support dyslexic English language learners in Sekondi Sub Metro. The observational data collected during classroom sessions focused on several aspects of an inclusive classroom environment and instructional practices mentioned by teachers in the survey and interviews.

Table 4.6: Instructional Practices for Dyslexic Learners

No.	Instructional Practice	Yes	No
1	Teacher uses audio recordings to support dyslexic learners	2	3
2	Students are encouraged to listen to audio materials for reinforcement	3	2
3	Flashcards, charts, and visual aids are used to reinforce learning	5	0
4	Blackboard illustrations or visual tools integrated into lessons	5	0
5	Individualized instruction is provided to dyslexic learners	0	5
6	Movement and physical activities incorporated into learning tasks	2	3
7	Teacher uses multiple pathways for learning (visual, auditory, kinesthetic)	4	1
8	Teacher uses phonics instruction to teach sounds and blending of words	3	2
9	Teacher uses digital tools or apps to support dyslexic learners	4	1
10	Available technology (e.g., phones, Bluetooth) used to enhance learning	4	1
11	Group activities organized to promote collaborative learning	4	1

Source: Field Observation (2024)

The results from the table above show that the most frequently observed instructional practices were the use of flashcards, charts, and visual aids and blackboard illustrations. The results indicate that visual learning strategies were consistently applied in all classrooms. Teachers also frequently integrated multiple learning pathways, including visual, auditory, and kinesthetic methods, and used technology and digital tools, such as phones and educational apps, to enhance learning for dyslexic learners.

Individualized instruction as mentioned earlier by the teachers was however not observed in any of the classrooms. This shows that there is a significant gap in providing one-on-one support to dyslexic learners. Again, the limited use of audio recordings suggests that auditory learning strategies were underutilized.

Overall, the results indicate that teachers are using effective strategies slightly more than half the time. While the use of visual aids and group activities was prevalent, individualized instruction and auditory learning methods were not widely observed.

Table 4.7: Teachers' Use of Inclusive Classroom Practices

No.	Inclusive Classroom Environment	Yes	No
1.	Teacher uses positive reinforcement to encourage participation of all learners.	2	3
2.	Instances of encouragement and clapping for efforts are observed, regardless of correctness.	2	3
3.	Students appear comfortable and willing to participate in activities.	5	0
4.	Teacher uses learning materials (e.g., bold print, charts, flashcards) to support dyslexic learners	5	0
5.	Visual aids are prominently displayed and utilized during lessons.	3	2
6.	Strategic seating is employed to facilitate learning for dyslexic students.	4	1
7.	Seating arrangements promote peer support and interaction.	4	1

Source: Field Observation (2024)

From the table, the results show variability in the teachers' ability to create an inclusive classroom environment. Positive reinforcement and instances of encouragement were observed inconsistently across the classrooms. This seems to suggest that while some teachers use these techniques, others do not consistently apply them. However, students appeared comfortable and willing to participate in activities in all the observed classrooms, indicating that the general atmosphere in the classrooms was conducive to student participation, even without frequent reinforcement. Also, the use of learning materials, such as charts and flashcards, to support dyslexic learners was observed in every classroom, demonstrating that teachers consistently utilize visual aids to assist these students. Visual aids, such as

bold print and charts, were prominently displayed in most classrooms, though there was some inconsistency in their use.

Furthermore, teachers employed strategic seating arrangements in most classrooms. They placed dyslexic learners (learners suspected to be dyslexic) near supportive peers or at the front of the class to facilitate better learning. Similarly, seating arrangements promoting peer support and interaction were observed in most classrooms.

The general observation reveals that teachers in Sekondi Sub-Metro to some extent employ inclusive practices consistently in their classrooms. Teachers frequently used strategies such as strategic seating and visual aids but were less consistent in applying positive reinforcement techniques.

4.10 Discussion of Findings from Observation

This section discusses the findings from the observation analysis, aimed at verifying the instructional practices teachers use to support dyslexic learners and the inclusive practices they implement in their classrooms. The observations focus on how teachers apply techniques such as the use of visual aids, strategic seating, and multisensory learning methods.

Instructional Practices Adopted to Support Dyslexic Learners

4.10.1 Consistent Use of Visual Learning Strategies

The most frequently observed instructional practices were the use of flashcards, charts, and visual aids. These strategies were consistently applied in all classrooms. This aligns with El Arbaoui's (2022) emphasis on multisensory approaches, including visual tools such as flashcards and charts, which are particularly effective for dyslexic

learners as they provide different ways for learners to engage with the material. Similarly, Yoro et al. (2020) identified the use of visual aids as a crucial method for helping dyslexic learners comprehend and retain information.

The consistency in applying visual learning strategies indicates that teachers in Sekondi Sub-Metro are leveraging these tools to support learners. This reflects their understanding of the importance of differentiated instruction. The observational finding is also consistent with Exeley (2003), who found that tailoring teaching methods to a learner's preferred learning style, including visual learning, can improve academic outcomes for dyslexic learners.

4.10.2 Integration of Multiple Learning Pathways

The observation showed that teachers frequently integrated multiple learning pathways such as visual, auditory, and kinesthetic methods into their lessons. This supports the findings of Exeley (2003), who advocates for the use of kinesthetic learning methods to improve academic performance in dyslexic learners. By incorporating movement and physical activities into the learning process, teachers allow learners to engage with the material in ways that go beyond traditional reading and writing task. This reinforces their understanding through hands-on learning.

Furthermore, the use of varied learning pathways aligns with El Arbaoui (2022) who highlights that activating multiple senses simultaneously can enhance dyslexic learners' ability to grasp and retain information, as it is essential for creating an inclusive classroom environment.

4.10.3 Use of Technology and Digital Tools

Another important finding was the frequent use of technology and digital tools, such as phones and educational apps, to support dyslexic learners. This reflects an awareness of the potential benefits of integrating technology into lessons. This finding supports the findings of Acheampong et al. (2019), which pointed out the need for innovative teaching tools to address the needs of neurodiverse learners. The observed but somewhat limited use of technology indicates a need for additional training to ensure that these tools are fully leveraged, as recommended by Gallardo et al. (2015).

4.10.4 Lack of Individualized Instruction

One of the most notable gaps identified in the classrooms was the absence of individualized instruction, despite teachers' previous claims in interviews about its importance. This absence contrasts with Yoro et al. (2020) who emphasized the importance of tailored teaching strategies and individualized attention to ensure dyslexic learners can fully engage with the material. The lack of individualized instruction suggests a disconnect between teachers' understanding of what is necessary to support dyslexic learners and the practical application of these strategies in the classroom. This also aligns with Acheampong et al. (2019), who noted that while many Ghanaian teachers have a basic understanding of dyslexia, they struggle to implement the specific interventions needed due to resource limitations and insufficient training.

4.10.5 Underutilization of Auditory Learning Strategies

Another notable finding was the limited use of auditory learning strategies, such as audio recordings. Auditory tools, which could greatly benefit learners with dyslexia by reinforcing reading and pronunciation skills, were underutilized across the

observed classrooms. This contrasts with El Arbaoui (2022), who emphasized the importance of using repetition and auditory reinforcement to support dyslexic learners. The limited use of such strategies suggests that teachers may not be fully aware of or equipped with the auditory resources necessary to provide a more comprehensive, multisensory learning experience.

Teachers' Use of Inclusive Classroom Practices

4.10.7 Positive Reinforcement and Classroom Atmosphere

The observation revealed that teachers inconsistently applied positive reinforcement, such as clapping and verbal encouragement, to motivate learners, particularly those with dyslexia. This practice is consistent with Shaywitz (2003) and Elliott and Grigorenko (2014) who argue that positive reinforcement is crucial in boosting self-esteem and encouraging dyslexic learners to participate fully in classroom activities. However, while some classrooms implemented these techniques effectively, others did not. This variability indicates that while some teachers understand the value of these methods, others may lack the confidence or training to apply them consistently in their teaching. This corroborates with both Acheampong et al. (2019) and Childers (2020) who note that many teachers do not have the necessary resources or training to effectively support learners with dyslexia. Teachers may be aware of the need for specific strategies but struggle to implement them consistently due to time constraints, insufficient training, or inadequate resources.

Despite this inconsistency, it is worth noting that the general classroom atmosphere was positive, and learners were generally willing to participate. This aligns with Rose's (2009) assertion that inclusive environments promote a sense of inclusion and teamwork among learners. Although the use of positive reinforcement was

inconsistent, other inclusive practices, such as peer support and strategic seating, likely contributed to the positive classroom environment observed.

4.10.8 Use of Learning Materials and Visual Aids

The observation revealed that teachers consistently used visual aids, such as flashcards and charts, to support dyslexic learners. This finding aligns with El Arbaoui's (2022) research, which highlights the effectiveness of multisensory strategies, such as auditory and visual tools, in supporting learners with dyslexia. These strategies provide dyslexic learners diverse learning experiences that can accommodate their unique learning needs. Moreover, Yoro et al. (2020) also emphasize the importance of using visual aids to help learners with dyslexia retain and understand information more effectively.

In spite of this positive observation, the use of these visual aids varied, with some teachers using them more frequently than others. This inconsistency mirrors Acheampong et al.'s (2019) findings that many teachers do not fully integrate inclusive teaching methods into their everyday practice due to gaps in training. While teachers in Sekondi Sub-Metro demonstrate awareness of the importance of visual aids.

4.10.9 Strategic Seating and Peer Support

The use of strategic seating arrangements, thus, placing dyslexic learners near supportive peers or at the front of the class, was observed in most classrooms. This practice aligns Shaywitz's (2003) findings, which highlight the importance of creating a learning environment that accommodates the specific needs of dyslexic learners. By positioning learners in places where they receive additional support, teachers help ensure that dyslexic learners can better engage with classroom activities. This finding

also aligns with Yoro et al.'s (2020) emphasis on cooperative learning, where peer support plays a significant role in helping dyslexic learners succeed.

Similarly, El Arbaoui (2022), argues that group-based and multisensory strategies can enhance dyslexic learners' ability to understand and retain information. The consistent use of peer support in Sekondi Sub-Metro classrooms demonstrates that teachers are aware of the value of collaboration in creating an inclusive environment, even if other practices, like positive reinforcement, are less consistently applied. These findings also support Van der Leij's (2013) assertion that professional development programmes are essential for providing teachers with the knowledge and skills needed to manage inclusive classrooms effectively. The inconsistencies observed suggest that while some teachers have incorporated aspects of inclusive teaching, there is a need for more comprehensive training and resource support to ensure these practices are applied consistently across all classrooms.

4.11 Integration of Results

4.11.1 Overview

Triangulation in mixed methods research involves integrating data from multiple sources to enhance the validity of the research findings (Creswell, 2013). Triangulation was employed in this study to compare and contrast the results from the quantitative survey, qualitative focus group discussions, and classroom observations. The aim of this triangulation is to gain a comprehensive understanding of teachers' knowledge of dyslexia, the instructional practices they use to support dyslexic English language learners, their capacity to foster inclusive classroom environments, and the extent of collaboration between the teachers and special education experts in the Sekondi Sub-Metro.

4.11.2 Research Question 1: *What knowledge do teachers have about dyslexia among English language learners in Sekondi Sub- Metro inclusive schools?*

Table 4.8: Teachers' Knowledge of Dyslexia

Teachers' Knowledge of Dyslexia	Survey Findings	Focus Group Insights	Observational Data
Basic Understanding of Dyslexia	Teachers had moderate understanding of dyslexia with focus on reading/writing difficulties	Teachers described dyslexia in terms of observable reading issues	There was limited application of dyslexia-specific strategies
In-depth Knowledge of Dyslexia	Teachers had misconceptions around the neurological aspects of dyslexia	Teachers lacked understanding of the cognitive aspects of dyslexia (e.g., phonological processing)	There was an absence of strategies addressing cognitive aspects of dyslexia
Sources of Knowledge	Teachers gained their knowledge mainly from personal experience or minimal training	Teachers report learning from professional development and self-research	There was limited evidence of professional development impact
Application of Dyslexia Knowledge	Teachers felt prepared but lacked implementation consistency	Teachers acknowledge challenges in practical application	There were inconsistent application of dyslexia-informed practices

Across all data sources, teachers demonstrated a general understanding of dyslexia, primarily associating it with difficulties in reading and writing. The survey data showed that many teachers acknowledged dyslexia as a language-based learning disability, though misconceptions about its neurological underpinnings persisted. This basic level of knowledge was further echoed in the focus group interviews, where teachers expanded on their understanding of dyslexia as it affects literacy skills, such as letter recognition and pronunciation problems. Again, the interviews revealed that teachers primarily associate dyslexia with reading and writing problems. They

emphasized that their knowledge was largely gained through professional development or self-research, though these sources appeared to provide only introductory insights.

However, while both the survey and focus groups suggest that teachers possess foundational knowledge of dyslexia, classroom observations painted a different picture of how this knowledge is applied in practice. Despite their reported understanding of dyslexia, individualized support for dyslexic learners which is a key aspect of accommodating their unique needs, was notably absent in the observed classrooms. This suggests that while teachers might understand the theoretical aspects of dyslexia, practical tools or sufficient confidence to implement strategies effectively may be lacking.

4.11.3 Research Question 2: *What instructional practices do English language teachers adopt to create an inclusive educational environment to support dyslexic English language learners?*

Table 4.9: Instructional Practices for Dyslexic Learners

Instructional Practice	Survey Findings	Focus Group Insights	Observational Data
Visual Aids and Multisensory Tools	Teachers reported frequent use of multisensory strategies and highly agreed on adapting materials	Teachers emphasized visual aids and multisensory learning strategies	Visual aids and multisensory strategies were consistently used across all classrooms
Kinesthetic Learning	Kinesthetic learning was moderately reported and less frequently used than visual aids	Teachers value hands-on activities, like blending sounds, and tapping.	Observed but less frequently than visual aids
Individualized	Teachers reported its	Teachers recognized it as crucial but noted	Rarely observed

Instruction	importance	implementation challenges due to class sizes and time constraint	
Assistive Technology	Teachers reported they use assistive technology but not as consistent as other methods	Teachers used available technology such as their mobile phones but lack access to advanced tools	Limited use observed. Teachers were observed playing sounds from their phones, highlighting resource constraints
Auditory Learning (Audio Recordings)	Moderate mention in survey responses	Teachers valued auditory methods but cite resource limitations	Underutilized, suggesting need for further resource support
Group Activities and Peer Support	Teachers reported this as a common method for collaboration and inclusion	Teachers reported it aids inclusivity	Group activities were frequently observed,

From the data collected, all the data sources revealed consistency in some areas of instructional practice, particularly the use of visual aids, flashcards, and group activities, which were reported in both the survey and focus groups and were observed frequently in classrooms. Teachers acknowledged in the survey that they rely on visual learning techniques and group work to support dyslexic learners, and these claims were substantiated by classroom observations where visual aids were prominently used to reinforce learning. This consistency demonstrates that teachers understand the value of multisensory learning and incorporate it into their lessons.

However, while visual and group-based strategies were widely employed, other instructional methods, such as individualized instruction, use of assistive technology and auditory learning strategies, were underutilized. While teachers expressed a moderate level of agreement in the survey with statements about incorporating assistive technology, they admitted in the interviews that they struggle with the

practical application of more tailored teaching methods due to resource limitations, time constraints, and lack of access to advanced assistive technology. Similarly, the classroom observations confirmed this challenge, as teachers adapted available technology, such as phones and educational apps, to support dyslexic learners. Also, individualized instruction was not observed in any classroom, despite teachers' acknowledgment of its importance in both the survey and interviews. The limited use of auditory tools, such as audio recordings, further supports the idea that while teachers are aware of various strategies, practical barriers hinder their implementation. These findings underscore the critical need for professional development and resource allocation to ensure that teachers can comprehensively support dyslexic learners in inclusive classroom environments.

Table 4.10: Use of Inclusive Classroom Practices

Inclusive Classroom Practices	Survey Findings	Focus Group Insights	Observational Data
Confidence in Inclusion	Teachers reported confidence in their ability to create inclusive environments	Teachers acknowledged importance of inclusion but reported barriers	There was inconsistent application of inclusive practices
Use of Differentiated Instruction	Teachers reported frequent adjustments to support dyslexic learners	Teachers highlighted challenges due to large class sizes and lack of training	Visual aids, group work, seating arrangement and other strategies were observed with limited individualized instruction
Use of Positive Reinforcement	Teachers moderately agreed on using positive reinforcement	Teachers were aware of reinforcement benefits but inconsistently applied it	Inconsistency in positive reinforcement application was observed
Challenges in Implementation	Lack of resources and time constraints noted	Teachers highlighted resource, training, and time limitations	Observed gaps in practice reflect structural limitations

The creation of inclusive classrooms for dyslexic learners was a key focus of the research, and triangulating the findings across the data sources highlighted both successes and challenges. In the survey, teachers expressed confidence in their capacity to create an inclusive environment. This confidence was supported to some extent by the focus group discussions, where teachers described efforts to use differentiated instruction, positive reinforcement, and seating arrangements to promote inclusion. The focus group discussions, however, revealed inconsistencies in how this knowledge was applied. While teachers expressed a desire to create inclusive classrooms, they reported challenges related to limited resources, time constraints, and insufficient professional development. Teachers also noted that, despite recognizing the importance of inclusion, the lack of training on specific dyslexia-related strategies made it difficult to consistently implement inclusive practices. In addition, classroom observations confirmed that some inclusive practices, such as the strategic use of seating arrangements and visual aids, were commonly implemented. Teachers placed dyslexic learners in supportive seating positions, such as near the front of the class or among peers, to help them engage more effectively. However, the inconsistent use of positive reinforcement and individualized instruction indicates that teachers struggled to fully integrate inclusive strategies into their teaching. Despite their reported confidence in the survey, the observational data showed gaps in the practical application of inclusive teaching methods for dyslexic learners.

4.11.4 **Research Question 3: *What is the level of collaboration between general education teachers and special education experts in relation to dyslexia?***

Table 4.11: Collaboration between Teachers and Special Education Experts

Collaboration between teachers and special education experts.	Survey Findings	Focus Group Insights	Observational Data
Frequency of Collaboration	Teachers reported understanding its importance but noted infrequent interactions	Teachers expressed a need for more consistent collaboration	No observed instances of collaboration
Perceived Benefits of Collaboration	Teachers recognized collaboration as beneficial for dyslexic learner support	Teachers believed collaboration would improve instructional effectiveness	Alignment with recognition, but limited evidence in practice
Challenges to Collaboration	Teachers cited insufficient structured opportunities	Teachers mentioned lack of time, support, and frameworks	Absence of collaborative efforts reflects practical challenges
Impact of Lack of Collaboration	Teachers had a moderate understanding of dyslexia due to limited or no collaborative reinforcement	Teachers felt isolated and struggled to fully support dyslexic learners	Teachers worked independently and lacked specialist input

The survey results indicated that teachers recognize the value of collaboration with special education experts, though actual opportunities for such collaboration were limited. In the focus group discussions, teachers elaborated on these challenges, explaining that while they believe collaboration could enhance their ability to support dyslexic learners, structural barriers, including limited time, insufficient resources, and inadequate administrative support, frequently hinder these collaborative efforts. Teachers expressed frustration with the sporadic and superficial nature of their

interactions with special education experts, further emphasizing that these collaborations are often more formal than practical. This finding was corroborated by classroom observations, where no direct collaboration between general teachers and special education experts was observed. Teachers appeared to work independently, relying on their own knowledge and strategies to support dyslexic learners. The absence of collaborative efforts in practice points to a significant gap between teachers' understanding of the importance of collaboration and the reality of its implementation in schools. This highlights a critical area where more structured support and professional development are needed to foster meaningful partnerships between general and special education staff.

4.12 Conclusion

The triangulated findings from this study reveal that teachers in the Sekondi Sub-Metro generally possess a foundational knowledge of dyslexia, primarily understanding it as a language-based learning disorder impacting reading and writing. Teachers recognized the need for targeted support for dyslexic learners but had misconceptions particularly around the cognitive and neurological aspects of dyslexia. While teachers reported that their knowledge is drawn from professional development and personal research, these findings were tempered by observations indicating that dyslexia-specific instructional practices were not consistently applied in practice. This suggests that, while teachers are broadly aware of dyslexia, many lack the in-depth training and practical skills necessary to translate this knowledge into fully effective strategies for dyslexic learners.

The findings also indicate that teachers felt generally capable of creating inclusive classroom environments for dyslexic learners. They demonstrated confidence in their ability to adjust instructional approaches to meet diverse needs and expressed a clear commitment to inclusion. However, practical challenges like large class sizes, limited resources, and time constraints hindered their ability to implement these strategies consistently. Observations confirmed that, while inclusive practices such as using visual aids and arranging strategic seating were commonly employed, there was an inconsistent use of positive reinforcement and a general lack of individualized instruction. These gaps suggest that, although teachers value inclusive education and express confidence in its principles, implementing these practices systematically remains challenging.

Additionally, instructional practices for dyslexic learners primarily centered around the use of visual aids, phonics instruction, and group work. Teachers widely applied these multisensory techniques. They utilized visual tools and kinesthetic activities to engage dyslexic learners. However, individualized instruction and auditory learning strategies were less common, and assistive technology was used inconsistently. This discrepancy points to resource and training limitations that hinder teachers' ability to provide more comprehensive support. While teachers showed awareness of diverse instructional practices, the findings suggest that limitations in classroom resources, large class sizes, and gaps in professional training affect their ability to consistently implement individualized and technology-based approaches, which are particularly beneficial for dyslexic learners.

Furthermore, collaboration with special education experts emerged as a recognized yet largely unrealized area of support for teachers. The findings reveal that teachers acknowledged the value of collaboration for improving dyslexic learners' outcomes; however, structured collaboration remained infrequent. Teachers cited barriers such as resource constraints, lack of time, and minimal administrative support as significant hindrances to engaging with special education experts. Classroom observations revealed a lack of structured collaboration, highlighting a gap between teachers' awareness of the advantages of collaborative support and the practical constraints that hinder its implementation in their classrooms. This gap highlights the need for administrative and systemic changes to facilitate more consistent access to collaborative resources and expertise.



CHAPTER FIVE

SUMMARY, CONCLUSION, IMPLICATIONS, AND RECOMMENDATIONS

5.0 Introduction

This study aimed to explore teachers' knowledge of dyslexia, the instructional practices they adopt to create inclusive classrooms to support dyslexic English language learners, and their collaborative efforts with special education experts within Sekondi Sub-Metro. A total of 158 English language teachers were sampled for the quantitative survey, while 20 teachers participated in the qualitative study, providing a comprehensive overview of the current state of teacher knowledge and practices throughout the sub-metro area. Also, 5 teachers were observed to confirm the claims made by teachers in both the surveys and interviews. Using a mixed-methods approach, the study employed surveys, focus group interviews, and classroom observations to obtain a comprehensive understanding of teachers' practices and perceptions. A multi-stage sampling procedure was implemented to select the final participants, with surveys collecting quantitative data and focus groups and observations providing qualitative insights. Descriptive statistics were used to analyze the quantitative data, while qualitative data were analyzed following Creswell and Creswell's (2023) thematic analysis framework.

5.1 Summary of Key Findings

The findings suggest that teachers generally have a fundamental understanding of dyslexia, frequently linking it to challenges in reading and writing. They primarily gained their knowledge through limited professional development and personal research. Despite their moderate understanding of dyslexia, teachers still had

misconceptions about the neurological basis and cognitive aspects of the condition. This suggests that teachers' knowledge is primarily rooted in surface-level observations rather than a deeper understanding of the disorder.

Again, teachers frequently used visual aids, group activities, and phonics instruction as strategies to support dyslexic learners. Although teachers reported a commitment to differentiated instruction, individualized teaching approaches were inconsistently observed due to large class sizes and time constraints. The use of assistive technology, while recognized as beneficial, was underutilized, indicating limited access to resources and insufficient training in integrating digital tools effectively.

Moreover, teachers expressed confidence in creating inclusive classrooms; however, the actual implementation of inclusive practices was inconsistent. Positive reinforcement techniques and differentiated instructional approaches, though valued, were applied irregularly, largely due to time and resource limitations. Observations revealed that, despite a generally supportive atmosphere, more structured support was needed to address dyslexic learners' specific needs.

Although teachers acknowledged the importance of collaborating with special education experts, this was not frequently practiced. Barriers to collaboration included limited time, lack of administrative support, and insufficient structured opportunities for joint planning and interaction. The absence of active collaboration was evident in classroom observations, underscoring the need for better support systems to facilitate meaningful partnerships.

5.2 Conclusions

The study's findings indicate that teachers' understanding of dyslexia is still relatively superficial, as they focus largely on observable language difficulties while lacking insight into its neurological and cognitive dimensions. This knowledge gap limits teachers' ability to fully support dyslexic learners.

Similarly, while teachers show an awareness of differentiated teaching methods, practical constraints impede consistent application. The inconsistent use of positive reinforcement, individualized instruction and assistive technology underscores the gap between teachers' theoretical knowledge of inclusivity and its practical implementation in the classroom.

It can also be concluded that teachers recognize the potential of assistive technology for supporting dyslexic learners but limited access and inadequate training hinder its effective use.

Furthermore, administrative and structural barriers prevent consistent and meaningful collaboration. Thus, limited opportunities for collaboration with special education experts reduce the quality of support that general education teachers can provide to dyslexic learners.

5.3 Contribution to Knowledge

This study reaffirms existing research suggesting that teachers' understanding of dyslexia is often limited to basic symptoms, supporting findings by Shaywitz (2003) and Acheampong et al. (2019). By highlighting specific knowledge gaps, this study emphasizes the need for a more in-depth understanding of dyslexia that incorporates

cognitive and neurological insights, essential for creating more inclusive classroom environments.

In addition, the research highlights a disconnect between teachers' awareness of inclusive practices and their actual classroom implementation. This aligns with practical challenges highlighted by Yoro et al. (2020) and El Arbaoui (2022) and provides new evidence of the need for localized training programs tailored to specific resource constraints in Ghanaian classrooms. Addressing this gap requires focused professional development, resource allocation, and structural changes within the school system to support sustainable, inclusive practices. The study also brings to light the critical role of collaborative support systems in education policy to aid general education teachers in fostering inclusive environments for dyslexic learners.

5.4 Recommendations for Practice

Drawing from the findings of this study, the following recommendations are proposed to improve teacher practices and more effectively support dyslexic learners:

1. Given the importance of teachers' knowledge in supporting dyslexic learners, teacher training programs should prioritize the inclusion of dyslexia-focused modules. Such programs should cover key topics like phonological awareness, cognitive differences associated with dyslexia, and the application of differentiated instructional methods. Training teachers to administer screening assessments and recognize early signs of dyslexia will help with timely intervention and support
2. Ghana Education Service and school authorities should implement comprehensive ongoing professional development programs focused on dyslexia, covering both foundational knowledge and advanced instructional practices. Training should not

only include foundational knowledge of dyslexia but practical strategies for individualized instruction and multisensory teaching techniques. This will provide teachers with the skills needed to effectively meet the unique needs of dyslexic learners

3. The Ministry of Education and school administrations should prioritize the provision of assistive technologies, such as educational apps, computers, projectors, and auditory learning tools. Additional training on the effective use of these resources should be provided to ensure teachers can fully integrate digital tools into their lessons and enhance learning outcomes for dyslexic learners.
4. To enhance support for dyslexic learners, policy-makers, schools, and educators should institutionalize regular, structured interactions between general education teachers and special education experts. Collaborative practices, including peer observations, team-teaching, and consistent feedback, are essential in building teachers' capacity to support dyslexic learners effectively. Schools should also create partnerships with specialized organizations to access resources, training, and expertise that can improve instructional practices.

5.5 Suggestions for Further Research

Further research is recommended to build on the findings of this study:

1. This study should be replicated in various regions across the country to provide a broader perspective on the instructional practices and challenges faced by teachers in different contexts, potentially making the findings more generalizable.
2. Future researchers should consider incorporating a greater number of classroom observations to provide a more comprehensive view of teachers' instructional

practices. Expanding observational data collection would thus improve the generalizability of findings and provide richer insights into effective strategies for supporting dyslexic learners across varied school contexts.

3. Future studies should investigate the impact of specific assistive technologies on dyslexic learners' literacy skills and overall academic performance in Ghanaian classrooms in order to identify tools that yield the greatest educational benefits.



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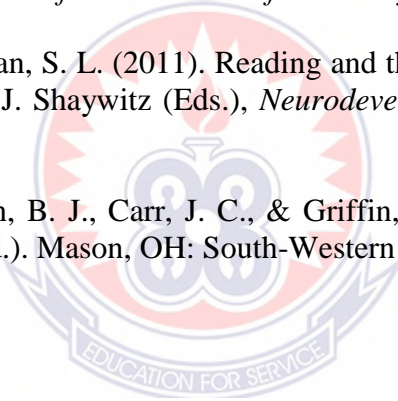
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APPENDICES

APPENDIX A

LETTER OF INTRODUCTION

 UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF FOREIGN LANGUAGES EDUCATION
DEPARTMENT OF ENGLISH EDUCATION
P. O. Box 25, Winneba, Ghana
+921 0201 2041092
winneba@uow.edu.gh

May 24, 2024

TO WHOM IT MAY CONCERN:

Dear Sir/Madam,

**LETTER OF INTRODUCTION:
ELSIE AKU CON-NUTSUGAH(8230060013)**

Please, we write to introduce the above person who is an M.Phil. 2nd year student of the Department of English Education, University of Education to you.

She has requested this letter to enable her to collect data at your establishment. Her research topic is *"TEACHERS' KNOWLEDGE AND PRACTICES OF DYSLEXIA AMONG ENGLISH LANGUAGE LEARNERS IN SEKONDI-TAKORADI METROPOLITAN ASSEMBLY"*. We would therefore be grateful if she is given the necessary assistance she seeks.

Thank you.

Yours faithfully,


DEPARTMENT OF ENGLISH EDUCATION
UNIVERSITY OF EDUCATION
P. O. BOX 25, WINNEBA
Mrs. Rebecca Arthur, PA
Ag. Head of Department

 www.uow.edu.gh

APPENDIX B

QUESTIONNAIRE

UNIVERSITY OF EDUCATION WINNEBA

DEPARTMENT OF ENGLISH EDUCATION

QUESTIONNAIRE FOR TEACHERS ON

KNOWLEDGE AND PRACTICES EMPLOYED TO SUPPORT DYSLEXIC

ENGLISH LANGUAGE LEARNERS IN SEKONDI SUB METRO

My name is Elsie Aku Con-Nutsugah. I am a graduate student of the Department of English Language Education at the University of Education, Winneba. I am conducting a study on teachers' knowledge and practices employed to support dyslexic English language learners in Sekondi Sub-Metro. You are requested to kindly help by responding to few questions as honest as possible. Your responses will be treated confidential. Please, no attempt will be made to disclose any information related to you in my final report. Be as accurate as possible to enable me get valid information. Thank you for your cooperation.

Section A: Teachers' knowledge about dyslexia

For each of the statements, indicate by ticking (√) the extent to which you agree to them, use the following scale: strongly agree (4), agree (3), disagree (2), strongly disagree (1).

No	Statement	Strongly agree (4)	Agree (3)	Disagree (2)	Strongly disagree (1)
1	Dyslexia is a language-based learning disability.				
2	Teaching pupils with dyslexia requires extra classroom instructional time.				
3	Dyslexia is a neurological condition.				
4	Learners with dyslexia often perform poorly in all other aspects of academic work.				

5	People who are very intelligent can be dyslexic.				
6	Dyslexics learners see words and letters backwards				
7	I am able to identify a learner who is in need of a diagnostic assessment with regards to dyslexia.				
8	Dyslexia does not actually exist; it's just an excuse for laziness.				
9	Dyslexia can be outgrown even if learners do not receive any intervention				
10	Certain medications have been found to be effective in treating dyslexia				
11	Dyslexic learners should be in a special needs school and not in an inclusive school.				
12	Learners with dyslexia also have problems with spelling and/ or writing				
13	Multi-sensory teaching methods are considered to be particularly helpful to dyslexic pupils.				
14	Formal testing of reading, language, and writing skills is the only way to confirm a diagnosis of suspected dyslexia				
15	I am able to identify the characteristics of a dyslexic learner as opposed to that of a slow learner.				

Section B: Instructional Practices employed to assist learners with dyslexia

For each of the statements, indicate by ticking (√) the extent to which you agree to them, use the following scale: strongly agree (4), agree (3), disagree (2), strongly disagree (1).

No	Statement	Strongly agree (4)	Agree (3)	Disagree (2)	Strongly disagree (1)
1	I frequently use differentiated instruction to support learners with dyslexia				
2	I consistently integrate assistive technology in my lessons for learners with dyslexia				

3	I extensively modify my teaching materials to accommodate dyslexic learners.				
4	I frequently adjust my instructional methods to meet the needs of dyslexic learners.				

Section C: Collaboration between teachers and special education

For each of the statements, indicate by ticking (✓) the extent to which you agree to them, use the following scale: strongly agree (4), agree (3), disagree (2), strongly disagree (1).

No	Statement	Strongly agree (4)	Agree (3)	Disagree (2)	Strongly disagree (1)
1	I regularly collaborate with special education experts to develop instructional practices for dyslexic learners				
2	I find collaboration with special education experts in supporting learners with dyslexia very effective				
3	I have received professional development on collaborating with special education experts				
4	I believe collaborating with special education experts has a positive impact on learner outcomes				

Section D: Bio Data

Please tick (✓) or provide the appropriate response.

1. Gender

Male Female

2. Age group

20 – 25 26 -30 31 – 35 36 - 40 41-50 51-60

3. How long have you been teaching English language?

1-3 years 4-6 years 7-10 years Above 10 years

4. Highest professional qualification

Diploma Degree Masters PhD

5. Have you received any special education training, whether pre-service or in-service?

Yes No

If yes, please proceed to Questions 5a

If no, please proceed to Question 6

5a. Did you receive any input on dyslexia as part of your special education

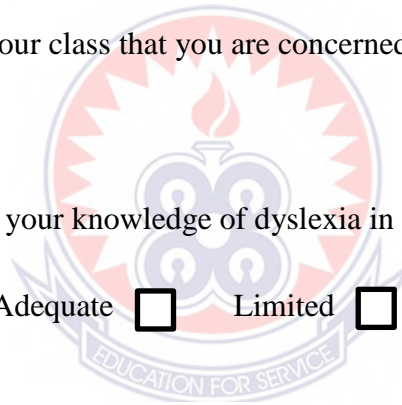
training? Yes No

6. Are there pupils in your class that you are concerned might be dyslexic?

Yes No

7. How would you rate your knowledge of dyslexia in learners?

Considerable Adequate Limited Very Limited



APPENDIX C

INTERVIEW GUIDE

Introduction

Thank you for granting this interview. The purpose of this interview is to investigate the knowledge and practices employed by teachers to support dyslexic English language learners in the Sekondi Sub-Metro. Please be assured that we hold in high regard your privacy and thus, any information provided would be used solely for the intended research purpose.

TEACHER KNOWLEDGE

1. Please tell me what you know about learners with dyslexia and your understanding of dyslexia?
2. Please tell me how you acquired your knowledge about dyslexia? (e.g., formal training, professional development, personal research)
3. Please tell me how you identify a dyslexic learner in your class?
4. What are some common signs and symptoms of dyslexia that you observe in your students?

INSTRUCTIONAL PRACTICES

1. What instructional practices do you find most effective for supporting dyslexic English language learners?
2. How do you differentiate your instruction to meet the needs of dyslexic students?
3. How do you incorporate assistive technology into your lessons for dyslexic ELLs?
4. What resources or tools do you use to support your instructional practices?

CREATING AN INCLUSIVE EDUCATIONAL ENVIRONMENT

1. How does your understanding of dyslexia influence the way you design your classroom environment?

2. Can you provide examples of specific accommodations or modifications you make to support dyslexic English language learners?
3. How do you ensure that dyslexic learners feel included and supported in your classroom?
4. What challenges do you face in creating an inclusive environment for dyslexic ELLs, and how do you address them?

COLLABORATION WITH SPECIAL EDUCATION EXPERTS

1. How often do you collaborate with special education experts regarding your dyslexic learners?
2. Can you describe a typical collaboration session with a special education expert?
3. How has collaboration with special education experts influenced your instructional practices and support for dyslexic learners?
4. What challenges do you encounter when collaborating with special education experts, and how do you overcome them?

DEMOGRAPHICAL INFORMATION

1. Age group

18-30 30-40 40-50 50-60

2. Gender

Male Female

3. Highest professional qualification

Diploma Degree Masters PhD

4. How long have you been teaching English language?

1-3 years 4-6 years 7-10 years Above 10 years

APPENDIX D**CLASSROOM OBSERVATION****UNIVERSITY OF EDUCATION, WINNEBA****DEPARTMENT OF ENGLISH EDUCATION**

Classroom Observation Checklist on Instructional Practices English Language Teachers Adopt to Create an Inclusive Educational Environment for Dyslexic English Language learners.

School:

Date:

No.	Instructional Practices for Dyslexic Learners	Yes	No
1	Teacher uses audio recordings of words to support dyslexic learners.		
2	Students are encouraged to listen to audio materials for repetition and reinforcement.		
3	Flashcards, charts, and other visual aids are used to reinforce learning.		
4	Blackboard illustrations or other visual tools are integrated into lessons.		
5	Individualized instruction is provided to dyslexic learners.		
6	Movement and physical activities (e.g., tapping, card games) are incorporated into learning tasks.		
7	Teacher uses multiple pathways for learning (e.g., visual, auditory, kinesthetic) to accommodate different learning styles.		
8	Teacher uses phonics instruction to teach sounds and blending of words.		
9	Teacher uses digital tools or apps to support dyslexic learners (e.g., phonics apps, audio tools).		
10	Available technology (e.g., phones, Bluetooth devices) is used to enhance learning.		
11	Group activities are organized to promote collaborative learning.		

Inclusive Classroom Environment		Yes	No
12	Teacher uses positive reinforcement to encourage participation of all learners.		
13	Instances of encouragement and clapping for efforts are observed, regardless of correctness.		
14	Students appear comfortable and willing to participate in activities.		
15	Teacher uses learning materials (e.g., bold print, charts, flashcards) to support dyslexic learners.		
16	Visual aids are prominently displayed and utilized during lessons.		
17	Strategic seating is employed to facilitate learning for dyslexic students (e.g., dyslexic learners are seated near the front or with supportive peers).		
18	Seating arrangements promote peer support and interaction.		

