

**COMPREHENSION INTERVENTION STRATEGIES AS
CORRELATES OF ENGLISH READING PERFORMANCE AMONG
GRADE FOUR LEARNERS WITH DYSLEXIA IN NAIROBI CITY
AND KIAMBU COUNTIES, KENYA**

**BY
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DECLARATION

I confirm that this research thesis is my original work and has not been presented in any university/institution for consideration of any certification. This thesis has been complemented by referenced sources duly acknowledged.

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DEDICATION

To all the children worldwide, who possess unique learning abilities, it is important to recognize your immeasurable worth and irreplaceable presence in the diverse and harmonious fabric of our world. You inspire my passion for knowledge.

To my parents, Wilfred and Dorothy for your unwavering support throughout my educational journey and for nurturing my passion for learning that has grown stronger with time.

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ABBREVIATIONS AND ACRONYMS

AYP:	Annual Yearly Progress
D:	Decoding
DST-J:	Dyslexia Screen Test Junior
EARCs:	Educational Assessment Research Centers
ELLs:	English Language Learners
IDEA:	Individuals with Disabilities Education Act
KNBS:	Kenya National Bureau of Statistics
LC:	Language Comprehension
NAEP:	National Assessment of Educational Progress
NCLB:	No Child Left Behind
RC:	Reading Comprehension
SPSS:	Statistical Package for the Social Sciences
SEN:	Special educational needs
SVR:	Simple View of Reading
UNESCO:	United Nations Educational, Scientific and Cultural Organization

ABSTRACT

Learners with dyslexia face significant challenges in reading, yet there remains a persistent gap in effective instructional interventions to improve their reading performance at global, regional, and national levels, including in Kenya. This study examined the relationship between selected reading comprehension intervention strategies and English reading performance among learners with dyslexia in Nairobi and Kiambu counties. Specifically, the study sought to: find out the specific reading comprehension difficulties experienced by Grade 4 learners with dyslexia; determine the extent to which reading abilities of Grade 4 learners with dyslexia moderate the relationship between reading comprehension intervention strategies and English reading performance; identify the most commonly used reading comprehension intervention strategies for Grade 4 learners with dyslexia; and establish the relationship between reading comprehension intervention strategies and English reading performance among Grade 4 learners with dyslexia in Nairobi City and Kiambu counties. This study was guided by Gough and Tunmer's Simple View of Reading and Chall's Stages of Reading Development theories. A correlational research design was used to explore the relationships between independent and dependent variables. The target population comprised 1,040 Grade 4 learners with dyslexia in public primary schools. Using purposive sampling, 32 special needs teachers were selected, while 166 learners with dyslexia were chosen through stratified random sampling to ensure diversity in reading comprehension abilities. In total, 198 respondents participated. Data collection methods included the Dyslexia Screening Test Junior (DST-J), document reviews, classroom observations, teacher interviews, and two reading comprehension tests. A pilot study was conducted in two public primary schools, one in Nairobi City County and one in Kiambu County. Data from teachers, learners, and academic documents were analyzed using both quantitative and qualitative approaches. Quantitative data were processed using SPSS version 26.0, with findings presented in tables and charts. Qualitative data from classroom observations, document reviews, and interviews were analyzed through content analysis and summarized in logical narratives. Pearson's correlation coefficient statistical test was used to determine relationships between variables. Findings revealed a considerable prevalence of dyslexia among the learners with dyslexia, with many learners struggling to achieve comprehension beyond the literal level. Correlation analysis indicated a statistically significant moderate relationship between reading comprehension intervention strategies and reading performance ($r = .355$, $p < .001$). Furthermore, comprehension ability levels were found to have a moderating effect on this relationship. Learners with higher comprehension abilities benefited more from intervention strategies, while those with lower comprehension levels showed limited progress, highlighting the need for differentiated instructional approaches. The study concluded that comprehension intervention strategies improve English reading performance for learners with dyslexia. These findings offer valuable insights for policymakers, educators, and other stakeholders in the Ministry of Education in developing effective interventions to address dyslexia and improve reading comprehension levels. The study recommends that teachers adopt evidence-based reading comprehension strategies tailored to the specific needs of learners with dyslexia.

CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter explains the background, problem statement, the main purpose of the study, and the statement of the problem. It further explains the purpose, objective, research questions, significance limitations, delimitations, and the assumptions of the study. Lastly, it gives an illustration of the relationship between the independent and dependent variables through a theoretical and conceptual framework. The operational definitions of terms are also discussed here.

1.2 Background to the Study

The fourth sustainable development goal aims to achieve inclusive and high-quality education for everyone, promoting lifelong learning. A specific target of this goal is to ensure that by the year 2030, individuals of all genders, across various age groups, will have acquired literacy and numeracy skills (Azevedo et al., 2021). However, despite the notable increase in school enrollment observed in many developing nations, millions of children continue to lack fundamental literacy skills such as reading and writing (Rowell, 2020). The ability to read proficiently is foundational for academic success and lifelong learning; however, reading difficulties, particularly among learners with dyslexia, persist as a significant challenge (Hamilton, 2023).

Reading is a dynamic and complex process encompassing making sense of drafted texts, progressing, deducing, and assigning the appropriate meaning to symbols in the form of written texts, purpose, and context (Hoover, 2020). According to the Simple View of

Reading, reading is a multidimensional process that includes comprehension and decoding (Babayigit & Shapiro, 2020). This theoretical framework posits that successful reading performance is contingent upon the successful integration and development of both comprehension skills and decoding abilities.

Reading comprehension refers to the ability to read and understand text, which involves extracting meaning and knowledge (Elleman & Oslund, 2019; Tennet, 2014). It is a multifaceted process that requires several components: Fluent reading, decoding unfamiliar words, and having sufficient background knowledge as well as vocabulary to construct meaning from the text (Nafa, 2022). Decoding, which is a fundamental skill, requires phonological awareness and spelling comprehension (Blaži, 2023).

Globally, low reading performance among learners remain a persistent concern. Recent studies conducted across the globe have highlighted the persisting issue of low reading performance due to low reading comprehension abilities among learners (Castles et al., 2018; Torppa et al., 2020; Yapp et al., 2023). Typically, by the end of grade three, learners are expected to have attained reading proficiency as a foundation for their future academic pursuits (Mbatha, 2018). However, according to the National Assessment of Educational Progress (NAEP) data from 2019, more than 63 percent of grade four students in the United States scored below proficient levels in reading comprehension, with over 39 percent exhibiting reading difficulties (Rahman et al., 2019; Ray, 2020).

These challenges are especially pronounced for children with learning disabilities such as dyslexia, a condition that impedes the development of reading and writing skills despite

normal intelligence and adequate teaching (Lo-Oh et al., 2020; Capin et al., 2021). Acknowledged under the Individuals with Disabilities Education Act (IDEA) as a specific learning disability, dyslexia impacts various reading skills, including decoding, word recognition, and spelling (IDEA, 2004). As literacy is foundational for success in education and future opportunities, addressing the reading difficulties faced by children with dyslexia is crucial for ensuring their academic success and overall development (Kim et al., 2019).

According to Dyslexia International (2019), dyslexia affects approximately 10 percent of the population (over seven million individuals). It is the cause of more than 70 percent of learning disabilities, particularly among young learners (Kendeou et al., 2016). Studies conducted in America, Europe and Africa have shown that low reading comprehension levels among learners with dyslexia beyond fourth grade is a global concern that demands urgent attention (Snowling & Hulme, 2020). Characterized by difficulties in decoding, spelling, and reading comprehension, dyslexia significantly hampers a learner's ability to grasp reading skills at the same pace as their peers (Kroger, 2023). Learners with dyslexia face considerable challenges in reading comprehension due to difficulties in word decoding, fluency, and vocabulary acquisition. Studies have shown that dyslexia hinders efficient written language processing, making reading a slow and demanding task (Kızılaslan & Tunagür, 2021; Adubasim, 2018).

Working memory deficits further compound these difficulties, affecting learners' ability to retain and process textual information (Liu et al., 2024; Gray et al., 2019). Consequently, learners with dyslexia require structured and individualized intervention strategies to

enhance their reading comprehension abilities and overall academic performance (Peng et al., 2018).

In the African countries, research on dyslexia and reading comprehension is still emerging, with growing efforts to identify the specific challenges faced by learners in diverse linguistic and educational environments. A study in South Africa by Fakude (2020) found that primary school learners with dyslexia exhibited severe difficulties in word recognition, decoding, and extracting meaning from text, exacerbated by the lack of early identification and specialized intervention programs.

Similarly, research in Zambia indicated that over 50% of students in Grade 8 score below average in reading comprehension due to ineffective reading instruction strategies and foundational gaps in literacy skills (Nambao, 2024). These findings underscore the pressing need for early intervention and structured remediation programs tailored to the needs of learners with dyslexia.

Studies in Ethiopia and Tanzania reveal that learners with dyslexia struggle with vocabulary acquisition, syntax, and sentence structure comprehension (Elbeheri et al., 2024; Kumburu, 2011). A study by Kame et al. (2024) found that only 38% of Grade 4 learners in Ethiopia could read and comprehend a simple story in their first language, highlighting fundamental literacy deficits. Similarly, an investigation by Wawire, Wawire, and Kiroro (2025) in Tanzania reported that most Grade 3 learners struggled with reading and understanding simple sentences in English and Kiswahili. These studies confirmed that reading challenges among learners with dyslexia extend beyond individual word

recognition to more complex reading comprehension tasks, reinforcing the need for structured intervention strategies.

In Kenya, research indicates that learners with dyslexia face persistent struggles in reading comprehension, particularly as they transition to English as the primary language of instruction from Grade 4 onwards (Philip, 2019). This language shift places additional cognitive demands on learners with dyslexia, who often require more time and structured support to develop proficiency in reading and comprehension. Similarly, a study by Ondiek (2022), found that learners with dyslexia in Nairobi City County schools struggle with decoding and understanding written material, often misinterpreting words or sentences, leading to impaired comprehension.

In Kiambu County, challenges related to dyslexia and reading comprehension are compounded by delayed diagnosis or misdiagnosis, limited resources, inadequate teacher training, and low awareness of dyslexia-specific interventions (Kwayuba, 2019). Furthermore, the stigma associated with learning difficulties often prevents parents and learners from seeking early intervention (Osabinyi, 2023). Without early identification and targeted support, these learners continue to fall behind, widening the literacy gap between them and their peers.

These difficulties significantly impact learners' academic achievement across subjects such as mathematics, science, and social studies, where reading comprehension is critical (Zhu, 2022; Akbasli et al., 2016). Addressing these challenges requires a systematic approach to

identifying effective reading comprehension intervention strategies and their impact on learners' reading performance.

Reading comprehension abilities play a critical role in moderating the effectiveness of intervention strategies in improving reading comprehension among learners with dyslexia. Reading comprehension ability refers to a learner's innate capacity to understand, interpret, and derive meaning from written text (Perfetti, 2018). Among learners with dyslexia, this ability is significantly influenced by the severity of their condition (Capin, et al., 2022). The degree of dyslexia severity determines the extent to which a learner can engage with text at literal, inferential, and critical comprehension levels, ultimately shaping their overall reading performance and response to intervention strategies (Nkomo, 2018).

The effectiveness of reading comprehension intervention strategies is not uniform for all learners. The reading abilities of learners with dyslexia significantly influence the success of these interventions. International research highlights that learners with higher baseline reading abilities benefit more from phonological awareness training and multisensory learning interventions (Snowling & Hulme, 2020). Conversely, those with lower reading abilities require more intensive, individualized interventions that focus on foundational literacy skills before progressing to higher-order comprehension strategies (Moir, 2017; Murphy, 2023). However, inconsistent assessment methods and variability in intervention implementation affect outcomes, particularly for learners with diverse reading needs (Gillis, 2024; Hamilton, 2023).

In South Africa, Nkosi (2024) found that reading abilities are often not adequately assessed, making it challenging to tailor interventions to individual learners. Similarly, a study in

Zimbabwe reported that learners with dyslexia struggle to benefit from generic teaching strategies that fail to address their specific reading needs and abilities (Nkomo, 2018). These findings suggest that targeted interventions based on learners' comprehension ability levels are crucial for improving reading outcomes.

In Uganda, research indicates that learners with dyslexia perform poorly in reading comprehension tasks when interventions do not consider their baseline reading abilities (Ezibon, 2021). This suggests that tailoring interventions to individual comprehension levels can significantly influence English reading performance.

In Kenya, the persistent issue of low reading comprehension ability levels among learners has significantly impacted their English reading performance. A report by the Kenya National Bureau of Statistics (KNBS, 2021) found that only 40% of Grade 3 learners could read and comprehend a story in English or Kiswahili. In Nairobi City County, approximately 43% of Grade 3 learners are at risk of a learning disability, yet intervention programs often fail to address their diverse needs (Mwangasha, 2021). The research underscores that without targeted support, these learners continue to face challenges in English reading performance, reinforcing the need for structured and evidence-based intervention strategies.

A study by Thuo, (2024) further reported that most learners with dyslexia in Kiambu County primary schools struggle with basic reading skills, leading to poor academic performance across all subjects. Large classroom sizes and insufficient teacher training in differentiated instruction contribute to generalized interventions that do not effectively

support learners with dyslexia in Kiambu County (Kasusya, 2023). Understanding how reading abilities moderate the relationship between intervention strategies and reading performance is crucial for developing more targeted and effective instructional approaches.

Reading comprehension intervention strategies are essential in supporting learners with dyslexia, particularly as they transition from "learning to read" to "reading to learn" in Grade 4 (Li & Kaur, 2014). Effective intervention strategies target multiple components of reading, including phonemic awareness, decoding, fluency, and vocabulary development. Given the persistent reading comprehension challenges faced by learners with dyslexia, especially in multilingual contexts like Kenya, implementing structured, evidence-based interventions is crucial.

Intervention strategies can be implemented through various approaches, including direct instruction, metacognitive techniques, and technology-assisted learning. A study by Ray (2020) emphasizes that structured literacy programs, incorporating systematic phonics instruction, strengthen foundational reading skills. Moreover, Alm (2024) highlights the effectiveness of tailoring interventions to individual needs, gradually improving fluency and comprehension.

Metacognitive strategies, such as self-monitoring and summarization, enhance active reading and retention. Technology-assisted tools, like text-to-speech software, support diverse learning paces through multisensory engagement (Araghi, 2024). Collectively, these strategies provide a comprehensive framework that addresses reading challenges, fostering literacy development and academic success for learners with dyslexia.

Additionally, multisensory approaches that integrate visual, auditory, and kinesthetic learning modalities can support comprehension and retention by reinforcing word recognition and language processing (Khan & Khan, 2021). These interventions, when adapted to diverse learning environments, provide targeted support that strengthens foundational reading skills and fosters long-term literacy development.

Despite these advancements, intervention strategies for dyslexia in Kenya remain inconsistent. While some teachers adopt phonics-based and comprehension-focused approaches, there is limited standardization in their application (Anyianda, 2021). Many educators lack specialized training in dyslexia interventions, leading to varied instructional methods that may not be evidence-based. A structured and research-driven approach to implementing reading interventions is necessary to meet the unique needs of learners with dyslexia effectively.

The relationship between reading comprehension interventions and English reading performance among learners with dyslexia is well-documented. International studies indicate that targeted interventions significantly improve reading comprehension and overall literacy skills (Juusola, 2019; Levinstein, 2023).

The National Institute of Child Health and Human Development (NICHD, 2020) found that early identification and intervention for struggling readers lead to substantial improvements in reading comprehension. Similarly, a longitudinal study by Spencer et al. (2020) in the United States demonstrated that interventions targeting both word recognition and comprehension skills enhance reading achievement among learners with dyslexia.

In Kenya, research on the effectiveness of reading comprehension interventions remains limited. A study by Matunga (2019) in Nakuru West Sub-County found that structured interventions focusing on word recognition, phonological decoding, comprehension monitoring, and cooperative thinking skills led to notable improvements in reading comprehension test scores.

While global attention to dyslexia and other reading impairments is growing, the challenge remains substantial in many African contexts, including Kenya (Cheruiyot et al., 2015; Simba, 2019). Consequently, many learners with dyslexia in Kenya struggle to meet academic expectations, particularly in subjects like English, which require strong reading comprehension skills (Philip, 2019).

In the Kenyan education system, the ability to read and understand English is crucial for learners' overall academic achievement, given the language's dominance as the medium of instruction from Grade 4 onwards (Berthet, 2020). Thus, understanding how to best support learners with dyslexia in developing their reading comprehension skills is vital to ensuring they reach their full academic potential (Karanja, 2021).

However, inconsistent implementation of evidence-based strategies limits the effectiveness of reading interventions (Thuo, 2024). While some learners demonstrate significant progress, many continue to struggle due to a lack of sustained and structured support. Further research is needed to identify the most effective intervention strategies and ensure their consistent application in Kenyan educational settings.

Against this background, this study built upon existing research by evaluating targeted interventions aimed at improving reading abilities and, consequently, enhancing reading performance among learners with dyslexia in primary schools in Kiambu and Nairobi City Counties. The significance of this study extended beyond filling a critical research gap; it provided an empirical basis for transformative educational policies and intervention frameworks tailored to the unique needs of learners with dyslexia.

Given the persistent below-average English performance in both counties since 2019, the rising prevalence of dyslexia, and the structural challenges posed by large class sizes in public primary schools (Kiambu County Education Office, 2022; Nairobi County Education Office, 2022), this study offered a timely and evidence-based approach to addressing literacy disparities among learners with dyslexia.

By investigating the correlation between reading comprehension intervention strategies and English reading performance among Grade 4 learners with dyslexia, this study focused on a pivotal stage in literacy development. Grade 4 marked the transition from learning to read to reading to learn, making proficiency in reading comprehension essential for academic progression. Through a rigorous examination of the relationship between the interventions and performance, this research established a scalable and adaptable model for supporting struggling readers in diverse inclusive educational settings. The findings could inform curriculum development, teacher training, and policy formulation, ensuring that learners with dyslexia receive the specialized support necessary for equitable academic achievement.

1.3 Statement of the Problem

In Kenya, English is the primary language of instruction from Grade 4 onwards in public primary schools. By this stage, learners are expected to have developed sufficient reading and comprehension skills. However, studies indicate that nearly half of Kenyan fourth-grade learners struggle with reading at a Grade 2 level, and approximately 10.7 to 18.3% of primary school learners in Nairobi City and Kiambu counties have dyslexia. Dyslexia, a neurodevelopmental disorder, significantly impacts reading fluency, accuracy, and comprehension, posing challenges to academic success.

While it is globally recognized that children with dyslexia experience reading comprehension difficulties, the effectiveness of intervention strategies in the Kenyan context remains unclear. Research has established that intervention strategies play a crucial role in improving reading performance, but there is limited empirical evidence on their impact in Nairobi City and Kiambu counties. For instance, a study in Kiambu County by Thuo (2023) revealed that many teachers lack the necessary skills to identify and support learners with dyslexia, while a study by Ondiek (2022) in Nairobi City County emphasized the need for targeted interventions tailored to these learners' needs.

Despite existing interventions, the correlation between reading comprehension strategies and reading performance among learners with dyslexia has not been systematically assessed in Kenya. This gap necessitated further research to determine which strategies are most effective in enhancing English reading performance for learners with dyslexia. By focusing on Grade 4 learners in Nairobi City and Kiambu counties, this study sought to bridge the knowledge gap and provide evidence-based recommendations for improving

reading outcomes for children with dyslexia, thereby promoting inclusive education and equitable learning opportunities.

1.4 Purpose of the Study

The study assessed the correlation between selected reading comprehension intervention strategies and the reading performance of grade four learners with dyslexia in Nairobi City and Kiambu counties, Kenya.

1.5 Objectives of the Study

The specific objectives of the study were to:

- i. To find out the specific reading comprehension difficulties experienced by Grade 4 learners with dyslexia in Nairobi City and Kiambu Counties, Kenya.
- ii. To determine the extent to which reading abilities of Grade 4 learners with dyslexia moderate the relationship between reading comprehension intervention strategies and English reading performance in Nairobi City and Kiambu counties, Kenya
- iii. To identify the most commonly used reading comprehension intervention strategies for Grade 4 learners with dyslexia in Nairobi City and Kiambu counties, Kenya.
- iv. To establish the relationship between reading comprehension intervention strategies and English reading performance among Grade 4 learners with dyslexia in Nairobi City and Kiambu counties, Kenya.

1.6 Research Questions

- i. What specific reading comprehension difficulties do Grade 4 learners with dyslexia experience in Nairobi City and Kiambu Counties?

- ii. To what extent do reading abilities of Grade 4 learners with dyslexia moderate the relationship between reading comprehension intervention strategies and English reading performance in Nairobi City and Kiambu Counties?
- iii. What are most commonly used reading comprehension intervention strategies for Grade 4 learners with dyslexia in Nairobi City and Kiambu Counties?
- iv. What is the relationship between reading comprehension intervention strategies and English reading performance among Grade 4 learners with dyslexia in Nairobi City and Kiambu Counties?

1.7 Research Hypothesis

H₀: There is no relationship between reading comprehension intervention strategies and reading performance in English language among grade four learners with Dyslexia in Nairobi and Kiambu counties, Kenya.

1.8 Assumption

To ensure the reliability, validity, and fidelity of data collection tools, several assumptions were considered in this study. Firstly, was assumed that grade four learners with dyslexia in Nairobi City and Kiambu counties, Kenya, have lower reading performance compared to their peers without dyslexia. Secondly, grade four learners with dyslexia would benefit from reading comprehension intervention strategies that are tailored to their specific needs. Thirdly, the effectiveness of reading comprehension intervention strategies varied depending on the individual learner's needs and learning abilities. Finally, the implementation of reading comprehension intervention strategies in schools would positively impact the reading performance of learners with dyslexia.

1.9 Limitations and Delimitation of the Study

The limitations of a research study pertain to aspects or circumstances that the researcher has no control over, and which may affect the validity, reliability, or generalizability of the study findings (Creswell and Clark, 2017). Delimitations are aspects in a study which limit its scope hence defining its boundaries (Conix, 2018). The following sub-sections present limitations and delimitations of the study respectively.

1.9.1 Limitations

Firstly, the study primarily focused on Grade Four learners with dyslexia in Nairobi and Kiambu Counties, which limited the generalizability of the findings to other populations, such as learners from different regions or educational settings. To partially mitigate this limitation, the researcher selected representative schools within these counties that exhibited a diverse range of student populations.

Another limitation was the small sample size, which was restricted to learners assessed at the Education Assessment and Research Centers (EARCs). This limitation could have affected the statistical power and generalizability of the results. However, the researchers used proper sampling techniques to ensure that the sample was representative of the broader population of learners with dyslexia in the counties, which helped enhance the reliability of the findings.

Additionally, gender imbalance was noted, with a higher number of boys than girls in the sample. To address this issue, efforts were made to increase female representation by

targeting schools that had a higher proportion of girls with dyslexia, thus improving the balance of gender representation in the study.

The study also faced challenges accessing learners in schools with limited resources or where inclusive education policies were not fully implemented. Some schools initially showed resistance to external evaluations or interventions. However, these challenges were addressed by ensuring participant confidentiality, offering flexible scheduling for data collection, and responding to concerns on a case-by-case basis, which helped foster cooperation.

1.9.2 Delimitation of the Study

This study focused specifically on Grade Four learners with dyslexia attending public primary schools in Nairobi and Kiambu Counties, which have special education units that are government-funded and aligned with the Ministry of Education's inclusive education policies. These special units were selected because they provide targeted support from special education teachers, allowing learners with dyslexia to access tailored interventions. The study did not include private schools or schools that lacked special education provisions, therefore excluding learners without access to such specialized support. The study was carried out in thirty-two public primary schools in Nairobi and Kiambu Counties.

Moreover, the study focused solely on reading comprehension intervention strategies and their correlation with the English reading performance of learners with dyslexia. Other factors that might influence academic performance, such as emotional, behavioral, or social factors, were not examined in this study. Moreover, the study concentrated only on certain

reading comprehension strategies and did not include all possible interventions or variations, thus limiting the range of strategies considered. This deliberate narrowing of focus helped provide a clear and specific analysis within defined parameters.

1.10 Significance of the Study

The findings of this study may have significant implications for various stakeholders in the education sector, such as the government, curriculum developers, teacher training institutions, school administrators, teachers, parents, and learners with dyslexia.

The government may use these findings to refine policies and allocate resources for targeted reading comprehension interventions, including specialized teacher training, assistive learning materials, and intervention programs. Increased investment in diagnostic tools and early screening may be emphasized to identify dyslexia in a timely manner.

Curriculum developers may integrate effective intervention strategies, such as phonics-based learning and multisensory techniques, into the English language curriculum to accommodate learners with dyslexia. Teacher training institutions may incorporate the findings to equip educators with the necessary skills for dyslexia intervention, addressing gaps in teacher preparedness.

School administrators may implement best practices for supporting learners with dyslexia, including professional development workshops, collaborative teaching approaches, and dyslexia-friendly environments. They may also advocate for increased funding for literacy intervention programs. Teachers may adopt tailored strategies to enhance reading comprehension and assess progress to meet the diverse needs of learners with dyslexia.

Parents and guardians may benefit from greater awareness of dyslexia, its signs, and the importance of early intervention. Ultimately, Grade 4 learners with dyslexia may benefit most, as the study's recommendations aim to improve their reading comprehension, boost academic performance, and enhance their learning confidence.

1.11 Theoretical Framework

This study was anchored in Gough and Tunmer's Simple View of Reading (SVR) theory and Chall's Model of Reading Development. These theories provided a comprehensive foundation for understanding reading comprehension challenges among learners with dyslexia and guided the selection and implementation of appropriate intervention strategies.

1.11.1 Simple View of Reading (SVR) Theory by Gough and Tunner (1986)

The present study was guided by Gough and Tunmer's Simple View of Reading (SVR) theory, first introduced in 1986. The SVR theory was developed to identify the key skills that contribute to early reading comprehension. It posits that reading comprehension is the product of two primary components: decoding and language comprehension. This relationship is expressed through a simple formula:

$$\text{Decoding} \times \text{Language Comprehension} = \text{Reading Comprehension}$$

According to this theory, reading difficulties can be categorized into three types: poor language comprehension, poor decoding skills, or a combination of both. This framework was particularly relevant to the study, as learners with dyslexia often experience challenges

in either decoding, language comprehension, or both, leading to poor reading comprehension and overall reading performance.

The SVR theory provided a valuable structure for identifying specific areas of weakness among learners with dyslexia. By employing appropriate reading interventions targeting these areas, teachers can enhance reading comprehension and, consequently, improve reading performance. In this study, the SVR theory served as a foundation for designing and implementing reading comprehension interventions tailored to the individual needs of fourth-grade learners with dyslexia.

1.11.2 Chall's Model of Reading Development (1983/1996)

Chall's model of reading development (1983/1996) was applicable in this research study to provide a theoretical framework for understanding the reading development of learners with dyslexia and inform the selection and implementation of appropriate reading comprehension intervention strategies which leads to improved reading performance. The model outlines the gradual progression of reading development across six stages: Stage 0- Pre-reading, Stage 1- Initial reading and decoding, Stage 2- Confirmation and fluency, Stage 3- Reading for new learning, Stage 4- Develop multiple viewpoints and, Stage 5- Construction and reconstruction.

This study specifically focused on Stage 3, which is relevant to fourth-grade learners as they transition from “learning to read” to “reading to learn.” This stage, occurring between grades four and eight, represents a critical shift in a student’s academic journey, as reading materials become more diverse and complex both linguistically and cognitively. For

learners with dyslexia, the challenges associated with this transition are often heightened, necessitating specialized reading comprehension interventions to support their learning.

Learners with dyslexia frequently struggle with reading fluency, word recognition, and vocabulary expansion, all of which hinder their ability to comprehend and learn from complex texts. As reading becomes a tool for acquiring knowledge and exploring new ideas, students with dyslexia may encounter additional difficulties in understanding unfamiliar words and concepts. This can limit their ability to think critically and engage deeply with academic content, ultimately leading to poor reading performance. Without effective reading comprehension intervention strategies, their academic progress and success may be significantly compromised.

Chall's Model of Reading Development was applied in this research in several key ways. Firstly, it was used to identify the specific stage of reading development in which fourth-grade learners with dyslexia in Nairobi and Kiambu counties, Kenya, were struggling. This helped provide insights into their individual challenges, forming a crucial component of the study's first objective. Teachers could assess whether the learners were still in the decoding stage or had advanced to the confirmation and fluency stage, thus enabling the selection of targeted intervention strategies.

Secondly, Chall's model guided the selection of appropriate assessment measures to evaluate the effectiveness of the reading comprehension interventions. For example, if learners struggled with phonological awareness, teachers could utilize assessments focusing on phonemic awareness skills. Similarly, if reading comprehension was the

primary challenge, assessments measuring text comprehension abilities could be implemented.

Thirdly, the model informed the design of reading comprehension intervention strategies. For learners still in the decoding stage, interventions could emphasize phonological awareness, letter-sound recognition, and decoding skills. In contrast, for those in the confirmation and fluency stage, interventions could focus on vocabulary development, comprehension skills, and reading speed.

1.12 Conceptual Framework

Figure 1.1 The Conceptual Framework showing relationship between comprehension intervention strategies and the English reading performance of grade four learners with Dyslexia

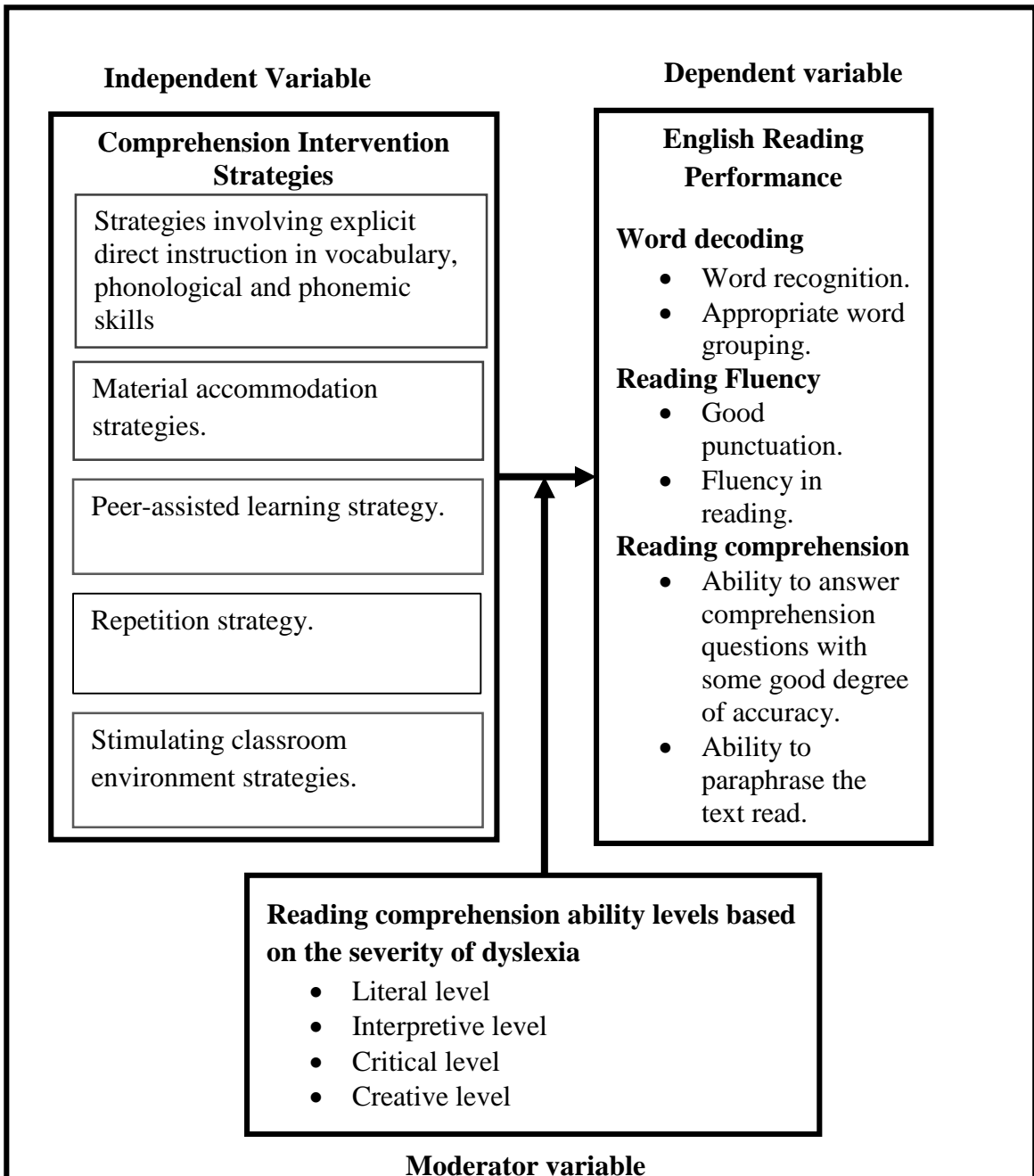


Figure 1.1 is the diagrammatical representation of the relationship between reading comprehension intervention strategies and the reading performance in English of grade four learners with dyslexia.

In this study, the independent variable, reading comprehension strategies, encompassed evidence-based instructional approaches aimed at enhancing students' text comprehension. Five key strategies were examined. Material Accommodation Strategies involved modifying reading materials to suit individual needs. Explicit Direct Instruction emphasized systematic teaching of vocabulary, phonological, and phonemic skills. Peer-Assisted Learning fostered collaborative discussions for mutual support. Repetition Strategy reinforced comprehension through repeated text exposure. Stimulating Classroom Environment Strategies created an engaging atmosphere to promote active participation and sustained interest in reading. These strategies were selected based on their effectiveness in supporting learners with dyslexia in improving reading comprehension.

The dependent variable, Reading Performance, focused on three components. Word Decoding (Word Recognition) measured students' ability to accurately identify and read words in a text. Reading Fluency assessed the smoothness, pace, and accuracy of reading, including punctuation and expression. Reading Comprehension evaluated students' understanding of the text, as demonstrated by their ability to answer comprehension questions and paraphrase the content. Reading comprehension performance was measured by the scores attained from comprehension tests, reflecting students' proficiency in extracting meaning and interpreting text.

The moderating variable in this study was students' reading comprehension ability, determined by the severity of their dyslexia. This variable influenced the relationship between reading comprehension strategies (independent variable) and reading performance. Comprehension levels were categorized into four groups: Literal Level, involving basic understanding of explicit content; Interpretive Level, where students grasped implied meanings; Critical Level, requiring higher-order thinking to analyze and evaluate text; and Creative Level, where learners synthesized information and generated new ideas. These distinctions highlighted the varying degrees of comprehension abilities among students with dyslexia, shaping their response to intervention strategies.

1.13 Operational Definition of Terms

Comprehension Intervention strategies: According to Reyna-Barron (2016), comprehension intervention strategies encompass a variety of instructional approaches designed not solely for the purpose of summarization and question-answering but also to facilitate students' metacognitive engagement, thereby enhancing their capacity to achieve deeper comprehension of textual material. In the current study they referred to a series of practices to deliver instruction targeted at addressing reading deficiencies in learners with reading difficulties.

Learners with dyslexia: According to Roitsch and Watson (2019), dyslexia represents a neurobiological, developmental disorder rooted in language processing, impeding individuals' proficiency in acquiring reading skills, both in terms of accuracy and fluency, as well as hindering the development of spelling competencies. In this study, these were grade 4 learners with difficulty to decode, read comprehension and disseminate the information the written texts, syllables, or words.

Reading comprehension: Reading comprehension pertains to the cognitive process through which individuals construct meaning by synthesizing their existing knowledge with the textual content being engaged with (McLaughlin, 2012). In this study, it referred to how meaning is constructed from a text, or the ability of grade 4 learners in public primary schools to decode vocabulary as well as words that one is not acquainted with and reading fluently.

Reading performance: Wooley (2011) defines reading performance as the student's achievement as a result of understanding of a text. It can be affected by some factors, such

as their reading strategies. According to this study, it referred to the level of score among grade four learners with respect to word recognition, appropriate word grouping, punctuation, and fluency level in reading.

Special Needs Education Teacher: Ministry of Education (2009) defines special needs education teacher as an educator who has received specialized training to teach and provide assistance to learners with disabilities. In this study, it referred to teachers of English offering instruction to fourth grade learners with dyslexia.

Special Units: Ministry of Education (2009) defines special units as classes are set up in regular primary schools to address the requirements of learners with disabilities. In the current study, it referred to classrooms where learners with dyslexia had been placed by the EARCs to receive interventions from special needs education teachers.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter assesses the findings of studies relevant to the research objectives. It further gives critiques of the findings and identifies gaps not addressed by other research studies. The literature, therefore, has been presented using themes related to the objectives.

2.2 Reading Comprehension Difficulties Experienced by Learners with Dyslexia

Learners with dyslexia often experience persistent reading comprehension challenges that hinder their academic progress (Sanfilippo et al., 2020). Various studies have explored these difficulties, highlighting factors such as decoding struggles, limited comprehension strategies, and the need for tailored interventions (Fakude, 2020; Liu et al., 2024). This section reviews key literature on reading comprehension difficulties among learners with dyslexia, identifying gaps that the present study seeks to address within the Kenyan context.

Spencer and Wagner (2018) conducted a meta-analysis of 86 studies examining reading comprehension difficulties in learners with dyslexia. Their study found that learners with dyslexia face persistent reading comprehension challenges across languages and writing systems. However, their research relied on secondary data, highlighting a gap in primary, context-specific investigations. The present study, inspired by Spencer and Wagner's work, collected primary data from fourth-grade learners with dyslexia in Nairobi and Kiambu counties, Kenya. Unlike the meta-analysis, this study directly assessed learners' reading comprehension abilities, providing localized insights into the specific challenges

they face. This approach offered a more detailed understanding of dyslexia-related difficulties within the Kenyan education system, contributing to the development of targeted interventions.

Georgiou et al. (2022) examined the relationship between decoding difficulties and reading comprehension in learners with dyslexia, finding a weaker association than in typical readers. While their study provided valuable insights, it relied on secondary data and did not explore practical interventions. Their meta-analysis relied on secondary data and had a broad international scope, whereas the present study in Nairobi and Kiambu counties used primary data to address local challenges. Unlike Georgiou et al., who focused on broad international scope and comparisons with typical readers, this study identified specific reading comprehension difficulties to develop targeted interventions for Kenyan learners with dyslexia.

Sari and Prasetyo (2021) investigated reading comprehension difficulties among second-year senior high school students with dyslexia in Indonesia. The study found that only a few students could employ interpretive and critical reading skills. It identified significant challenges in processing written information, which hindered their ability to understand and analyze texts effectively. Their study highlighted the need for improved reading comprehension strategies but focused on older students. The present study examined reading comprehension difficulties among younger, fourth-grade learners with dyslexia in Nairobi and Kiambu counties, Kenya. Unlike Sari and Prasetyo's study, this explored comprehension challenges in older students, this study focused on early identification of difficulties, emphasizing the need for timely interventions to improve literacy outcomes.

The difference in participants, focus, and scope offers new insights into supporting learners with dyslexia at an earlier educational stage.

Ooko and Aloka (2021) investigated behavioral interventions like prompting, shaping, coaching, and modeling to address reading comprehension difficulties in learners with dyslexia in Kenyan primary schools. Their study highlighted lower comprehension levels among these learners, who often relied on compensatory strategies. However, it did not fully examine their specific reading challenges. The present study first identified the reading comprehension difficulties experienced by fourth-grade learners with dyslexia in Nairobi and Kiambu counties. It then focused on determining effective intervention strategies that correlated with improved reading performance. This comprehensive approach aimed to establish targeted methods that directly enhance reading performance.

2.3 Moderating effect of Reading Abilities on Intervention Strategies and Reading Performance.

Dyslexia varies in severity, requiring tailored interventions based on a learner's reading comprehension abilities (Sanfilippo et al., 2020). Since comprehension is cognitively demanding, it influences the choice, intensity, and duration of interventions. Learners with lower baseline comprehension abilities need more structured and intensive support (Middleton et al., 2022). Understanding how reading abilities moderate intervention effectiveness is crucial for improving reading performance outcomes. This section reviews literature on this relationship, identifying gaps addressed by the present study, which examined how comprehension ability levels of Grade 4 learners with dyslexia in Kenya moderate the link between intervention strategies and English reading performance.

Reis et al. (2020) conducted a meta-analysis of 178 studies examining reading comprehension, writing proficiency, and cognitive abilities in adults with dyslexia, revealing significant impairments across these areas. Their study emphasized the long-term academic challenges faced by individuals with dyslexia and highlighted the importance of early diagnosis and intervention. However, their study focused on adults and relied on secondary data, creating a gap in understanding how reading abilities influence intervention strategies and reading performance in younger learners. The present study investigated how reading comprehension abilities of Grade 4 learners with dyslexia moderate the relationship between intervention strategies and English reading performance in Kenya, using primary data collection to provide context-specific insights for early intervention.

Pedersen et al. (2016) examined oral reading quality and its correlation with reading comprehension in Danish university students with dyslexia. Their findings showed that students with dyslexia performed worse in reading fluency, error frequency, and comprehension compared to typical readers, even with interventions. However, their study focused on university students and did not explore how reading abilities moderate the effectiveness of interventions. The present study addressed this gap by investigating how the reading abilities of Grade 4 learners with dyslexia in Kenya moderate the relationship between reading comprehension intervention strategies and English reading performance. By focusing on younger learners, this study provides insights into early intervention effectiveness, ensuring timely support to enhance literacy outcomes.

Fonyuyshey and Nsah (2019) conducted a correlational study in Cameroon on improving reading skills in learners with dyslexia, emphasizing the importance of direct instruction in enhancing reading comprehension. Their findings underscored the individual variability in dyslexia, highlighting the need for structured interventions tailored to learners' comprehension ability levels. This study built on their research by extending the investigation to Kenyan learners with dyslexia, focusing on the moderating effect of comprehension ability levels on the relationship between reading comprehension strategies and English reading performance. While Fonyuyshey and Nsah (2019) primarily examined direct instruction, this study adopted a broader approach, considering other research-based comprehension interventions strategies for learners with dyslexia

In Kenya, Thuo (2024) examined the impact of Early Grade Reading Activities (EGRA) teachers' capacity-building interventions on the reading comprehension abilities of Grade 1 to 3 learners in public primary schools in Kiambu County. The study found that teacher capacity-building interventions significantly improved early-grade reading comprehension abilities. However, this study focused on teacher training rather than directly investigating how learners' reading abilities influence the effectiveness of interventions. Additionally, it targeted younger learners and did not explore dyslexia-specific challenges. The present study examined how the reading abilities of Grade 4 learners with dyslexia moderate the relationship between intervention strategies and English reading performance. Unlike Thuo's study, it focused on a specialized population, using primary data to provide insights into effective dyslexia interventions.

2.4 Reading Comprehension Intervention Strategies commonly used for Learners with Dyslexia

Though several intervention programs have been put in place to help the learners facing reading challenges, no single method or program meets the needs of all struggling readers. The context within which the design and selection of a reading comprehension intervention program is very critical (Willis, 2019). Although there exists a comprehensive comprehension of the attributes evident within this demographic, there has been a scarcity of research focusing on the creation of customized intervention targeted at enhancing reading comprehension skills in individuals with dyslexia ((Middleton, 2022).

A study by Hall et al, (2017) examined instructional strategies to improve reading among English Language Learners in U.S. middle schools, identifying techniques such as linking reading to prior experiences and using visual aids. While their study offers insights into effective teaching strategies improving reading and comprehension among learners with challenges in reading, it focused on a developed country and did not specifically address dyslexia. The present study, conducted in Kenya, investigated the most commonly used reading comprehension intervention strategies for Grade 4 learners with dyslexia, addressing the gap in understanding dyslexia-specific interventions within an emerging economy.

Elshazly (2016) investigated the impact of an iPad-based intervention on the reading, writing, and spelling performance of third-grade students with dyslexia in the UAE. Using a mixed-methods approach, the study found that students who received the iPad intervention showed greater improvement than those taught through traditional methods.

While this study highlights the benefits of technology-based interventions, it focused on learners in a developed setting. The present study, conducted in Kenya, explored commonly used reading comprehension intervention strategies for Grade 4 learners with dyslexia, addressing the gap in understanding effective, context-specific interventions in an emerging economy with different educational and resource constraints.

McCall (2023) investigated the effects of Response to Intervention (RTI) and computer-based programs on literacy acquisition among first and second graders in South Carolina, using a quasi-experimental design. Findings revealed no significant difference in literacy scores between students receiving computer-based supplemental instruction (Raz-Kids) and those in traditional reading programs, highlighting the need for further research on intervention effectiveness. However, this study focused on early-grade learners in a developed country without specifically addressing dyslexia. The present study examined the most commonly used reading comprehension intervention strategies for Grade 4 learners with dyslexia in Nairobi and Kiambu counties, Kenya, exploring context-specific dyslexia interventions in an emerging economy.

Holz (2020) developed and evaluated *Prosodiya*, a digital game-based spelling training for German primary school children, aiming to improve literacy skills by enhancing orthographic knowledge and syllable stress awareness. A randomized controlled trial with 116 second to fourth graders showed significant improvements in spelling and syllable stress awareness, demonstrating the tool's feasibility and effectiveness. However, this study focused on spelling rather than reading comprehension and was conducted in Germany, a high-income country with advanced digital learning infrastructure. The present

study, conducted in Kenya, examined the most commonly used reading comprehension intervention strategies for Grade 4 learners with dyslexia, addressing the gap in dyslexia-specific reading interventions in an emerging economy with different educational resources and challenges.

Al-Bukhari (2020) examined differentiated curriculum implementation and assistive accommodations for students with dyslexia, dysgraphia, and dyscalculia in higher education in Dubai. The study, using a qualitative case study approach, explored faculty, administrators, and parents' perspectives on inclusive practices and challenges in higher education. While it highlighted the importance of differentiated instruction, it focused on older students rather than early intervention. The present study investigated reading comprehension intervention strategies for Grade 4 learners with dyslexia in Kenya, with an emphasis on material accommodations and differentiated instruction. By focusing on younger learners in an emerging economy, this study provides insights into early-stage support strategies tailored to the Kenyan educational context.

Daidsen (2018) examined the impact of differentiated instruction on reading comprehension among third graders in the U.S., using a quasi-experimental design with 128 students. The study found that differentiated instruction significantly improved students' reading scores over three years, highlighting its effectiveness in addressing diverse learning needs. However, it focused on general reading comprehension without specific emphasis on dyslexia or material accommodations. Additionally, the study was conducted in the U.S., where educational resources differ from Kenya. The present study

addressed this gap by investigating the most commonly used reading comprehension intervention strategies, particularly material accommodations and differentiated instructional materials, for Grade 4 learners with dyslexia in Nairobi and Kiambu counties, providing insights into dyslexia-specific interventions in an emerging economy.

Hunt et al. (2025) conducted a systematic review of interventions aimed at improving educational outcomes for learners with disabilities in low- and middle-income countries (LMICs). Their findings highlighted that while interventions such as reading comprehension strategies and accessible learning environments showed some effectiveness, most studies had low methodological rigor, high heterogeneity, and lacked a systemic approach to inclusion. The review primarily focused on broad disability-related interventions rather than specific strategies for dyslexia. The present study, conducted in Nairobi and Kiambu counties, Kenya, first identified commonly used reading comprehension interventions for Grade 4 learners with dyslexia and provided targeted insights into dyslexia intervention strategies within Kenya's educational context.

Matunga (2019) examined the effectiveness of reading interventions on primary school learners' academic achievement in Nakuru County, Kenya. The study assessed the impact of word recognition training, phonological decoding, comprehension monitoring, and cooperative thinking skills on reading outcomes among 174 learners, revealing notable improvements in comprehension test scores for those who received interventions. While Matunga's study confirmed the benefits of targeted interventions, it focused on general reading difficulties rather than dyslexia-specific challenges. Additionally, it did not specify which aspect of academic achievement was measured, whereas the present study directly

assessed reading comprehension through English tests. By specifically targeting Grade 4 learners with dyslexia in Nairobi and Kiambu counties, the current study sought to identifying the most commonly used reading comprehension intervention strategies for this specialized group.

2.5 Reading Comprehension Strategies and Reading Performance among Learners with Dyslexia

Research has shown a positive correlation between the implementation of reading comprehension strategies and improved reading outcomes among learners with dyslexia in several countries, across the globe.

Garavand et al. (2022) conducted an experimental study to examine the impact of a Metacognitive Intervention Program on the reading development of 32 Iranian primary school learners with dyslexia. Results indicated that the program significantly improved reading comprehension, emphasizing the need for metacognitive strategies in instruction. However, this study had a small sample size, focused on Grade 3 learners, and was conducted in Iran, with different linguistic and educational setting. The present study, with a larger sample of 144 Grade 4 learners in Kenya, explored the relationship between reading comprehension intervention strategies and English reading performance, addressing gaps in regional context, sample size, and intervention types to provide more context-specific insights into effective dyslexia interventions in an emerging economy.

Suarez (2022) examined the relationship between instructional reading strategies and standardized test performance among third-grade students in Arizona, focusing on how test-preparation strategies influenced student outcomes under U.S. education policies like

No Child Left Behind Act (NCLB) and every Student Succeeds Act (ESSA). The study found that students who received instructional reading strategies before standardized tests performed better than those who did not. However, Suarez's research was conducted in the U.S. and primarily emphasized test performance rather than reading comprehension intervention strategies for learners with dyslexia. The present study, conducted in Kenya with Grade 4 learners, specifically investigated how reading comprehension intervention strategies influence English reading performance among learners with dyslexia. It focused on dyslexia-specific interventions designed to enhance reading comprehension progress rather than solely improving exam performance.

Smith (2023) assessed the impact of multisensory phonics-based instruction on decoding and oral reading fluency among at-risk first graders in the Western U.S., finding no significant differences in outcomes between intervention and non-intervention groups. This raises concerns about its effectiveness for Tier 3 learners. However, the study focused on early-grade learners rather than older students, such as Grade 4 learners with dyslexia, who have already developed some reading competency and did not address reading comprehension. The present study examined reading comprehension intervention strategies for Grade 4 learners with dyslexia in Kenya, a group with different literacy needs. By exploring effective strategies in a distinct educational context, this research provides valuable insights into interventions suited to a different educational context and learner needs.

Mwathi (2018) examined the role of cognitive and metacognitive reading strategies in predicting reading comprehension among Form Three students in Lari Sub-County, Kenya.

The study found a moderately positive correlation between strategy knowledge and comprehension. The study highlighted the effectiveness of global reading strategies, support strategies, and problem-solving techniques in enhancing comprehension. Mwathi's findings offer valuable insights into strategies that can be effective in the Kenyan context. However, the study focused on high school students in a regular classroom, whereas the present study examines Grade 4 learners with dyslexia in a special unit setting. This research is driven by the need for early intervention to enhance achievement and academic progression among learners with dyslexia, ensuring timely support for improved literacy outcomes.

2.6 Summary of Literature Related Literature and Research Gap

Understanding reading comprehension difficulties among learners with dyslexia was essential for developing effective interventions. While various studies explored dyslexia-related challenges, significant gaps persisted, particularly in Kenya. This review synthesized key findings on reading comprehension, intervention strategies, and their effectiveness while identifying critical research gaps.

Existing research confirmed that dyslexia-related comprehension difficulties persisted across languages and writing systems (Spencer & Wagner, 2018). However, many studies relied on secondary data, underscoring the need for primary, context-specific investigations. Research in Indonesia (Sari & Prasetyo, 2021) focused on older students, leaving a gap in understanding the needs of younger learners. Similarly, studies in Kenya (Ooko & Aloka, 2021) analyzed behavioral interventions but did not specifically address reading comprehension challenges in dyslexic learners. The absence of research targeting

Grade 4 learners created a demographic gap, as this stage was crucial for literacy development.

Regarding the impact of reading abilities on intervention effectiveness, studies indicated that dyslexia severity varied, necessitating tailored interventions. Research by Reis et al. (2020) and Pedersen et al. (2016) primarily focused on adults, leaving younger learners understudied. Thuo (2024) examined teacher capacity-building in Kenya but did not investigate how learners' reading abilities influenced intervention success. Many studies also relied on secondary data or small sample sizes, limiting generalizability and reinforcing the need for robust primary research.

Studies evaluating dyslexia interventions revealed a contextual gap in resource-constrained settings like Kenya. Hall et al. (2017) assessed strategies for English Language Learners, while Elshazly (2016) investigated technology-based interventions. McCall (2023) explored the Response to Intervention (RTI) model, and Holz (2020) developed digital game-based training programs. However, these studies were conducted in developed countries, making their applicability to Kenya uncertain. The intervention-specificity gap remained, as few studies examined tailored interventions for early-grade learners with dyslexia in Kenya.

Empirical research has demonstrated a positive correlation between evidence-based interventions and improved literacy outcomes. Garavand et al. (2022) found that metacognitive interventions significantly enhanced reading comprehension in Iranian students with dyslexia. Suarez (2022) and Smith (2023) examined strategy effectiveness in the U.S., while Mwathi (2018) explored reading strategies among Kenyan high school

students. A combination of strategies was found to enhance comprehension skills, potentially leading to significant improvements in reading performance. However, research targeting Kenyan learners with dyslexia remained scarce, particularly regarding localized interventions within inclusive education settings.

Addressing these gaps would enhance understanding of dyslexia-related reading comprehension difficulties and inform the development of effective, contextually relevant interventions. Future research should focus on conducting primary studies, targeting younger learners, and adapting interventions to Kenya's educational landscape to bridge existing knowledge gaps and improve support for learners with dyslexia.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The procedures and methodology which were followed in the research process are presented in this chapter. The research design, target demographic, sampling processes, sample size, and pilot study are all described. The research instruments, data collection, and analysis techniques, determination of reliability and validity of the research tools, the ethical and logistical considerations are also explained in this chapter.

3.2 Research Design

This study employed a descriptive correlational research design to examine the relationship between selected comprehension intervention strategies and English reading performance among Grade Four learners with dyslexia in Nairobi and Kiambu counties, Kenya. This design enabled the identification and description of associations between intervention strategies and reading outcomes without resorting to experimental manipulation. By integrating qualitative and quantitative data through a mixed-methods approach, the research provided a comprehensive analysis of how these interventions influenced reading performance.

The descriptive component facilitated an in-depth examination of the prevalence and patterns of the interventions, while the correlational aspect measured the strength and direction of the relationships. Ethical and practical considerations in natural classroom

settings further supported the selection of this design, allowing for the simultaneous analysis of multiple variables and laying the groundwork for future experimental or longitudinal studies.

3.3 Research Variables

Section 3.2 describes the research variables which were examined.

3.3.1 Independent Variables

In this study, the independent variable comprised the selected reading comprehension intervention strategies specifically formulated to support Grade Four learners with dyslexia. These strategies were categorized into four interrelated components: material accommodation strategies; explicit direct instruction in phonological and phonemic skills; methods engineered to actively enhance student performance; and techniques devised to cultivate a stimulating classroom environment. Each intervention was rigorously operationalized to evaluate its impact on English reading performance, thereby ensuring alignment with prevailing educational practices and robust empirical inquiry.

3.3.2 Dependent Variable

The dependent variable in this study was the English reading performance of Grade Four students with dyslexia. This variable was operationalized by assessing the scores obtained from two comprehension tests administered to the learners. Reading performance was measured across several dimensions, including word recognition, word grouping, punctuation accuracy, reading fluency, the ability to paraphrase the text, and proficiency in answering comprehension questions with a satisfactory level of accuracy.

3.3.3 Moderator Variables

Students' reading comprehension ability, determined by the severity of dyslexia, was identified as a moderating variable in this study. Dyslexia exists on a spectrum, with some learners experiencing mild difficulties in decoding and fluency, while others struggle with severe impairments in word recognition, phonemic awareness, and reading comprehension. This variability can affect how effectively learners respond to different reading comprehension strategies, thereby influencing their overall reading performance.

A moderator variable affects the strength or direction of the relationship between the independent and dependent variables. Understanding this moderating effect allows for the development of differentiated interventions, ensuring that strategies are tailored to the unique needs of learners at various severity levels. This approach enhanced the precision of intervention planning and provided more targeted recommendations for educators and policymakers seeking to improve literacy outcomes for learners with dyslexia.

3.4 Location of the Study

This study was conducted in Nairobi City and Kiambu counties, Kenya, selected for their diverse demographic composition and mix of urban, peri-urban, and rural schools. These counties were purposefully selected due to their diverse demographic composition, which included learners from various ethnic, socioeconomic, and cultural backgrounds.

Nairobi City County, as the capital, hosts numerous educational institutions, including public schools with established special units for learners with dyslexia, while Kiambu

County offers a representative sample for assessing intervention strategies across different settings.

The high population of learners with special educational needs in these two Counties, as reported by the Ministry of Education, further justified the choice. Nairobi houses key education functions, including government departments, research institutions, and policy-making bodies, ensuring comprehensive documentation and resource availability.

The strong presence of education stakeholders positions these counties as models for implementing varied intervention strategies, including digital approaches supported by high internet penetration, reliable electricity, and advanced ICT infrastructure. Additionally, well-developed road networks facilitated school access and timely data collection. The availability of trained teachers, existing intervention programs, and inclusive education policies ensured a reliable and feasible research environment with potential for replication in other counties.

3.5 Target Population

The study targeted 1,040 Grade Four learners with dyslexia in Nairobi City and Kiambu counties who had been formally assessed by Education Assessment Research Centre (EARC) officers and integrated into mainstream primary schools with specialized units designed to provide tailored educational support. Additionally, 148 English teachers from 148 special units in government-sponsored primary schools within the two counties were included, as they possessed specialized training in supporting students with special educational needs and disabilities.

Grade Four learners were selected as the primary population due to their critical stage in literacy development. By this level, learners are expected to have acquired foundational reading skills and transitioned to reading to learn rather than just learning to read (Babbie, 2020). According to Uwezo (2014), students at this stage should demonstrate satisfactory comprehension skills and reading fluency. The target population was identified using official assessment records from Educational Assessment Research Centers to ensure that the sampled learners met the inclusion criteria.

3.6 Sampling Techniques and Sample Size

The sampling techniques and sample size are presented herewith.

3.6.1 Sampling Techniques

The study employed a multi-stage sampling approach to ensure a representative and methodologically sound selection of participants. The process involved purposive, stratified, and simple random sampling techniques, each chosen to maximize the validity and reliability of the findings.

Nairobi City and Kiambu Counties were purposively selected due to their diverse socio-economic characteristics, including urban, peri-urban, and rural settings. This diversity was critical in ensuring that the findings could be generalized to different contexts within Kenya. Additionally, these counties have a high prevalence of special units in government-sponsored primary schools, making them suitable for studying reading interventions among learners with dyslexia.

From each county, three sub-counties were selected using stratified random sampling, ensuring that the sample captured variation across different geographical and socio-economic contexts. The selection criteria included factors such as population density, gender, economic activity, and the availability of special education services. This approach ensured that the study reflected a balanced representation of educational settings supporting learners with dyslexia.

Following the identification of sub-counties, five special units were randomly selected from each, resulting in a total of 32 special units, constituting approximately 22% of the 148 special units in the two counties. Random selection of special units enhanced the representativeness of the sample while maintaining fairness in the selection process.

Teachers of English in the selected special units were sampled using purposive sampling. This approach was appropriate because the study required teachers with direct experience in supporting learners with dyslexia. By targeting teachers specifically trained in special needs education, the study ensured that the data collected reflected insights from those most knowledgeable about the intervention strategies under investigation.

The final stage involved selecting Grade Four learners with dyslexia from the identified special units using stratified random sampling to ensure proportional representation across different severity levels and gender balance. First, the learners were categorized into strata based on the severity of dyslexia (mild, moderate, and severe). Then, an equal number of boys and girls were randomly selected from each stratum to ensure fair representation, except in exceptional cases where gender balance was not practical. This approach was

suitable as it minimized selection bias, enhanced the generalizability of the findings, and ensured that the sample reflected the diversity of reading comprehension abilities among learners with dyslexia.

Lastly, the inclusion criteria required that learners had a prior diagnosis from Education Assessment Research Centers (EARCs). Therefore, Dyslexia Screening Tool-Junior was administered to confirm the presence of dyslexia-related reading difficulties among the sampled learners.

3.6.2 Sample Size

In accordance with the guidance provided by Gay and Airasian (2007), it is recommended that descriptive-correlational research, such as the one conducted in this study, should encompass a sample size ranging from 10% to 30% of the target population. The sample size for this study was determined using Yamane's (1967) formula for finite population sampling:

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

Where:

n = required sample size

N = total target population (1,188)

e = margin of error (0.05 for 95% confidence level)

$$n = \frac{1188}{1 + 1188(0.05^2)}$$

$$n = \frac{1188}{1 + 2.97}$$

$$n = \frac{1188}{3.97} \approx 299$$

In accordance with established best practices, the study selected an average sample size of approximately 198 participants, representing 17% of the total target population. This sampling approach was designed to achieve a balance between ensuring a sufficiently comprehensive representation of the population and addressing practical and logistical constraints. By doing so, the study aimed to generate findings that are both representative and feasible for effective analysis and interpretation. Table 3.1 provides a detailed distribution of the target population and the corresponding sample size.

Table 3.1 Target Population and Sample Size

Categories	Target Population	Sample Size			Percentage %
		Male	Female	Total	
Special needs English teachers	148	10	22	32	22
Learners with Dyslexia	1040	92	74	166	16
Total	1188	102	96	198	17

The study sample comprised of 32 (22%) out of 148 special needs teachers of English and 166 (16%) of 1040 learners with dyslexia. These learners had been placed in regular

primary schools with special units by the Education Assessment Research Centers (EARCs) to receive specialized support and instruction.

3.7 Research Instruments

Quantitative data was collected through document review, Dyslexia Screen Test Junior (DST-J) and comprehension tests while for qualitative data, classroom observation schedules and interviews schedules were used. This methodological triangulation ensured a comprehensive and empirically grounded analysis.

3.7.1 Classroom Observation Schedules

The observation schedule utilized in this study was constructed based on established research-derived pedagogical methodologies for enhancing reading comprehension instruction. Throughout the study, the researcher conducted two observations every special unit for all the 32 schools sampled. Observations captured instructional practices and learner engagement, informing Objective (iii) by identifying commonly used intervention strategies.

The observation checklist contained the following items: manner and speed in which the child read; mastery of words, understanding level of comprehension questions, reactions when reading, planning of ideas from a passage, note taking skills, handwriting, and memory. Live lessons were audiotaped to incorporate comprehensive verbal details of the instructional sessions in the schools where the teachers allowed. This helped in finding out how reading comprehension instruction happened in class with an aim to explore potential

correlations between the instructional strategies adopted by teachers and learners' reading performance.

3.7.2 Document Review

Document review entailed analyzing students' reading comprehension scores in grade three national assessment test, school attendance register, and grade four's opener test scores in reading. Document review provided historical data on learners' reading comprehension performance, attendance, and prior assessments.

3.7.3 Adapted Dyslexia Screen Test Junior (DST-J)

This tool is designed to detect dyslexia in children with the intention of offering early intervention. It was first developed in the United Kingdom in 1966 to assess dyslexia risk, and thereafter it was updated in 2004, (Nicolson & Fawcett, 2011). Its administration lasts for about half an hour and consists of eight sub-tests for children aged 6 years 6 months to 11 years 5 months. The test was modified and adjusted in order to identify the reading failure among grade four learners in the Kenyan context. These subsets included one-minute reading, rapid naming, segmentation, verbal fluency, rhyme, one-minute writing, and vocabulary.

In the current study, this screening tool served a dual purpose. The adapted DST-J was instrumental in confirming dyslexia presence and, supporting Objective (ii) by assessing the moderating role of reading abilities. It also comprehensively assessed the specific symptoms of dyslexia and challenges experienced by grade four learners with dyslexia which the study's Objective (i) sought to find out. This multifaceted use of the screening

tool ensured a thorough and holistic examination of the learners' reading abilities and the presence of dyslexia-related challenges.

3.7.4 Comprehension Tests

The researcher used UWEZO 2014 comprehension tests which were modified and adjusted as per the new curriculum, that is, Competency Based Curriculum (CBC). Comprehension tests measured learners' reading proficiency, contributing to Objective (iv) by addressing the relationship between intervention strategies and reading performance.

The comprehension test 1 test was administered to grade four learners receiving support services in the special units in the schools participating in the study during the first observation. This test assessed the baseline reading performance of Grade four learners with dyslexia. It comprised of three parts: paragraph 1, paragraph 2, and a story. The learners were given the option to choose which of the two paragraphs they wished to read. If the learners read the chosen paragraph and made less than three mistakes, they were allowed to proceed to the story section.

However, if the learners made more than three errors while reading the paragraph, they were marked at WORD LEVEL and were not permitted to continue to the story section. The story section was only provided to learners who had successfully read the chosen paragraph. If the learners made more than four mistakes while reading the story, they were marked at PARAGRAPH LEVEL. The learners who were able to read the story without making more than four mistakes, they were marked at STORY LEVEL. The two last questions were only administered to the learners who had reached the STORY LEVEL.

During the second observation, a different test of the same difficulty level was administered after two weeks of direct teaching of comprehension strategies. The two results were compared.

3.7.5 Interviews Schedules with the Special Needs Teachers of English

Following initial observations of reading comprehension lessons, structured interviews featuring open-ended questions were administered, employing a predetermined list of inquiry prompts. The aim was to gauge teachers' comprehension of reading intervention strategies and evaluate their efficacy in improving reading performance. Interview schedules were used to elucidate the comprehensive themes of the study in a thorough manner via systematic questioning, as highlighted by Mugenda and Mugenda (2008).

Field notes were generated during each interview session to record the verbatim expressions of the participants. In addition, the researcher audiotaped some of the interviews to capture all the details accurately. This was only done with teachers who allowed recording to be done. The interviews provided deeper insights into challenges experienced by the learners, and best practices in providing tailored interventions, further supporting all objectives.

3.8 Piloting of the Study

The piloting was carried out in two special units, one located in Nairobi County and the other in Kiambu County. These schools were selected to reflect the diverse educational settings in the study area, ensuring that the research instruments were tested in varied learning environments. These two schools were intentionally excluded from the final study to prevent any potential bias or prior exposure influencing the main research findings.

Piloting was a crucial step in assessing the feasibility and effectiveness of the research instruments before full-scale data collection. The results of the pilot study led to several key modifications. First, the time allocated for comprehension tests was found to be insufficient for some learners, particularly those with severe dyslexia who required more time to process and respond. As a result, the test administration duration was extended to accommodate their needs. This, in turn, led to an adjustment in the overall sample size, as a more realistic timeframe for data collection had to be established without compromising the quality of the research.

Additionally, the pilot study revealed that some interview questions were either ambiguous or repetitive, leading to revisions to ensure clarity and specificity. Similarly, the classroom observation schedule was refined to focus more explicitly on learner engagement, instructional strategies, and teacher-learner interactions during reading activities.

The findings also indicated that administering all comprehension tests in a single session caused cognitive fatigue among learners with dyslexia. Consequently, the test administration was restructured into two sessions, allowing students to complete the tasks without excessive strain. In essence, the piloting phase was undertaken to verify the practicality of the research tools and the items they generated in terms of the data they were intended to yield and the extent to which they accurately measured the targeted variables. Reliability and validity testing were carried out on both the research instruments and the items generated.

3.8.1 Validity of the Research Instruments

The validity of the research instruments was established through content analysis, where the researcher and supervisors reviewed classroom observation schedules, comprehension tests, and interview schedules to ensure alignment with study objectives. Any irrelevant or inadequate elements were revised or removed. Expert validation further strengthened the process by leveraging specialized knowledge to assess the comprehensiveness of the tools, minimize bias, and enhance reliability. This ensured the instruments produced consistent results across different respondents and contexts.

In addition to content validity, construct validity was considered to ensure the instruments measured the intended theoretical concepts, while face validity ensured clarity and appropriateness for respondents. The expert review aligned the tools with established research standards, improving their credibility. By undergoing this rigorous validation, the instruments were refined for accuracy and effectiveness, ensuring that the data collected would be reliable, meaningful, and methodologically sound. consideration.

3.8.2 Reliability of the Research Instruments

The reliability of the research instruments was assessed using the test-retest technique. A group of participants, consisting of two special education teachers and six girls and boys each, who were not part of the actual study, completed the test items. After a two-week interval, the same pilot participants were asked to repeat the procedure.

The test-retest technique was employed to ensure the reliability of the research instruments by measuring their consistency over time. This method was appropriate because it

evaluates whether the same instrument produces stable and consistent results when administered to the same group under similar conditions after a time lapse. By selecting two special education teachers and an equal number of boys and girls who were not part of the actual study, the researcher ensured that the pilot participants reflected the target population without influencing the main findings. The two-week interval between test administrations minimized the effects of memory recall while allowing for a fair assessment of stability.

The Pearson's product-moment correlation coefficient was then calculated to determine the correlation between the two sets of scores obtained. The following formula was used.

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Where,

- r = Pearson Coefficient
- n = number of the pairs of the stock
- $\sum xy$ = sum of products of the paired stocks
- $\sum x$ = sum of the x scores
- $\sum y$ = sum of the y scores
- $\sum x^2$ = sum of the squared x scores
- $\sum y^2$ = sum of the squared y scores

A reliability coefficient of 0.82 was realized. Schober et al. (2018) explain that the Pearson correlation coefficient ranges from -1 to +1, where a value of $r = 0$ indicates no relationship between the two variables, a negative r signifies a negative correlation, and a positive r represents a positive correlation. According to Mohajan (2018), a research instrument is

considered sufficiently reliable if it falls within the range of 0.80 to 1.00, hence the research tools were considered to be adequately reliable for the collection of data.

For qualitative data, the reliability was ensured by verifying the research process, which involved reviewing raw data, data reduction outputs, and process notes. In this study, the raw data was analyzed and compared with the reduced data and process notes, revealing no notable discrepancies. Additionally, the trustworthiness and credibility of the qualitative data were reinforced through member checks, the use of probing questions, and extended time spent in the field.

3.9 Data Collection Procedures

This section outlined the procedures that were undertaken to gather reliable and valid data for the study, ensuring alignment with the research objectives and methodological rigor. It detailed the logistical arrangements made to facilitate data collection, the ethical considerations that were observed to safeguard participants' rights and well-being, the research protocol and itinerary that were followed, and the actual data collection process. These steps were carefully designed to enhance the credibility, accuracy, and integrity of the research findings.

3.9.1 Logistical Considerations

The researcher got a clearance letter from Kenyatta University's graduate school. Thereafter, permit was sought from the National Commission for Science, Technology, and Innovation (NACOSTI) to allow the research to be undertaken. Approval was also sought from Nairobi and Kiambu County education offices for clearance to visit the

sampled schools. The researcher also contacted Twaweza East Africa through Uwezo Kenya Secretariat to notify them about the intention to use the comprehension tests in this research study. In addition, the researcher got approval from the various head teachers of the schools participating in the research to seek their consent.

3.9.2 Ethical Considerations

Ethical integrity was a fundamental priority in this study. The researcher adhered to established ethical guidelines to ensure the rights, dignity, and welfare of all participants were safeguarded throughout the research process. To obtain informed participation, both assent and consent were sought from the study participants. For learners with dyslexia and teachers, the researcher clearly explained the purpose of the study, emphasizing their right to voluntarily participate or decline without any consequences. Their assent was documented by having each learner mark the assent form and indicate their age, demonstrating their voluntary agreement to engage in the research. A separate consent form was also provided to their parents or guardians to obtain their permission for their children to take part in the study.

The teachers of English also provided informed consent through a formalized process. They were given detailed information about the study objectives, procedures, and ethical considerations, ensuring they understood their role before signing the consent form. Confidentiality and voluntary participation were strictly upheld throughout the research. Participants' identities remained anonymous at all stages of data collection, analysis, and reporting (Camilleri et al., 2014). Any data not utilized in the research was securely discarded to maintain data protection standards. Additionally, all referenced materials, including text, tables, images, and data sourced from previous studies or online platforms,

were properly cited in adherence to academic integrity and anti-plagiarism policies. By implementing these ethical safeguards, the study ensured the credibility of its findings while upholding the rights and well-being of all involved.

3.9.3 Research Protocol and Itinerary

Prior to the commencement of data collection, the researcher held meetings with the heads of all 32 participating schools. During these meetings, the necessary authorization documents permitting the study were provided, and any ambiguities regarding the research process were clarified. A mutual agreement was reached on the best approach to minimize disruptions to both learners and teachers during their regular academic activities. Additionally, the researcher took the opportunity to provide a comprehensive overview of the study to the teachers of English in the special units, including its objectives, methodologies, and ethical considerations, reinforcing transparency and fostering participant confidence in the research process.

The selected reading comprehension intervention strategies were also discussed with English teachers during the itinerary meeting. Given their professional training and experience in teaching English, the teachers were already well-versed in instructional strategies for supporting learners with dyslexia. Those who had been using strategies outside the selected ones were also asked to list them, ensuring a comprehensive understanding of existing practices. It is important to emphasize that this study did not introduce new instructional methods; rather, it focused on evaluating the strategies that teachers had already been implementing, specifically in relation to comprehension skills and their impact on reading performance.

3.9.4 Actual Data Collection

On the first day of data collection at each school, learners diagnosed with dyslexia and placed in special units were screened using the Dyslexia Screening Test-Junior (DST-J). This assessment confirmed dyslexia among the sampled learners and identified their specific reading challenges, addressing the study's first objective. Additionally, the DST-J provided baseline data on their reading comprehension abilities based on the severity of their condition, aligning with the study's second objective.

Following the screening, the first comprehension test was administered to assess the learners' initial reading performance, contributing to the study's second and fourth objectives. This test comprised two paragraphs and a short story, each accompanied by comprehension questions. The researcher then conducted the first classroom observation, documenting the intervention strategies employed by teachers to enhance comprehension skills in learners with different dyslexia severity levels.

Subsequently, face-to-face interviews were conducted with English teachers in special units to gather insights into the challenges faced by learners, the moderating effect of their ability levels, and the comprehension strategies used in instruction. Teachers continued implementing these strategies over the next two weeks, during which learners received approximately 12 to 20 English lessons. This period was considered adequate for measuring significant improvements in comprehension skills. Teachers were encouraged to maintain records of the most effective strategies for each learner based on their Individualized Education Plans (IEPs), generating data relevant to the study's third objective.

To establish the relationship between intervention strategies and reading performance, a second comprehension test, identical to the first, was administered after two weeks to reassess learners' progress. The results from both tests were compared to determine any changes in reading performance. In total, 64 classroom observations were conducted across 32 schools, ensuring a comprehensive evaluation of the intervention strategies' effectiveness.

3.10 Data Analysis

Quantitative data collected from Dyslexia Screen Test Junior (DST-J) and comprehension tests was coded and analyzed using SPSS version 26.0. The central tendency and dispersion measures were then used to summarize descriptive statistics for continuous data. Moreover, the researcher analyzed qualitative data obtained from classroom observation schedules, document review, and interviews through content/narrative analysis. The recorded interviews were transcribed and organized in themes in accordance with the study's objectives.

The presentation of qualitative results was done in a narrative form, while the quantitative results were presented in tables and charts. Pearson's correlation statistics was used in testing significant relationships between variables. The testing was carried out on the hypotheses:

H₀: There was no significant relationship between reading comprehension intervention strategies and reading performance among grade four learners with Dyslexia in Nairobi City and Kiambu counties.

CHAPTER FOUR

FINDINGS, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This chapter organizes the presentation, interpretation, and discussions of the findings as per the study objective and research questions. To ensure coherence and relevance, the study employed triangulation techniques, as advocated by Noble and Heale, (2019). Triangulation involves the utilization of multiple data sources to enhance the credibility and accuracy of research outcomes.

In this particular study, five distinct sources of data were employed: document reviews, classroom observations, dyslexia screening test- Junior and comprehension test results obtained from fourth-grade students, and interviews with teachers. The researcher utilized both descriptive and inferential statistics to analyze the data and draw relevant conclusions. The study findings are organized in a sequential manner, in alignment with the study objectives, following a chronological sequence which aimed to:

- i. To find out the specific reading comprehension difficulties experienced by Grade 4 learners with dyslexia in Nairobi City and Kiambu Counties, Kenya.
- ii. To determine the extent to which reading abilities of Grade 4 learners with dyslexia moderate the relationship between reading comprehension intervention strategies and English reading performance in Nairobi City and Kiambu counties, Kenya
- iii. To identify the most commonly used reading comprehension intervention strategies for Grade 4 learners with dyslexia in Nairobi City and Kiambu counties, Kenya.

- iv. To establish the relationship between reading comprehension intervention strategies and English reading performance among Grade 4 learners with dyslexia in Nairobi City and Kiambu counties, Kenya.

4.2 General and Demographic Information

4.2.1 Instrument Response Rate

The response rate for the Dyslexia Screening Test-Junior (DST-J) was 85%, 141 out of the targeted learners participating in the screening process. This ensured a comprehensive assessment of dyslexia-related difficulties among the sampled population.

The comprehension tests, also recorded a response rate of 141 out of 166 learners participating. This accounted for 85% of the targeted respondents, providing substantial data on reading comprehension challenges. For the interview schedules, 29 out of 32 targeted special needs English teachers participated, resulting in a 91% response rate. These interviews yielded rich qualitative insights into instructional strategies and challenges in teaching learners with dyslexia.

The observation schedules, conducted twice per school, were successfully implemented. The researcher was able to record observations without any resistance from school authorities, aligning with the study objectives. Each research question was systematically addressed through thematic analysis based on observations.

The document review encompassed school attendance registers, learners' progress records, teachers' instructional documents, referral letters from EARCs, and student notebooks. These records provided critical insights into attendance consistency, learning progress, and

instructional planning. While the researcher had access to review the documents, ethical restrictions prohibited photocopying or recording personal data. Consequently, findings were analyzed qualitatively, ensuring confidentiality.

The study achieved a strong response rate of 86% (170 out of 198 participants), demonstrating the effectiveness of the selected research instruments in generating relevant data for analysis. Fincham's (2008) research on response rates indicated that a response rate of 60% is acceptable for most studies, while a response rate of 80% or more is expected for surveys representing all schools and colleges of pharmacy. Therefore, the present research's overall return rate of 86% was excellent and meets the study objectives.

The response rates were presented in the table 4.1.

Table 4.1 Response Rate

Respondents	Sampled Respondents	Those who participated	Response Rate (%)
Learners	166	141	85
Teachers	32	29	90
Total	198	170	86

4.2.2 Demographic Characteristics of the Special Education Teachers of English

A synopsis of teachers' teaching experience is provided in this section, including the duration of their teaching careers and their level of training. By stating the time frame in which the teachers have been teaching, we establish the extent of their practical experience in the field. This experience plays a pivotal role in shaping their perspectives, instructional approaches, and understanding of the subject matter.

The special education teachers of English's demographic characteristics were presented in the table 4.2.

Table 4.2 Demographic Characteristics of Special Education Teachers of English

Biographic Variables	Variable Description	Frequency N=29	Percentage (%)
Teaching Experience	< 2 years	0	0
	3 -5 years	10	36.5
	6–10 years	5	17.2
	11 –20 years	11	37.9
	21-30 years	3	10.3
Level of Training	P1 Certificate	10	34.5
	Diploma	14	48.2
	Degree	5	17.2

Table 4.2 presents compelling evidence on significance of training teachers and teaching experience. The data indicates that a significant number of teachers (37.9%) possessed a teaching background spanning from eleven to twenty years, demonstrating a considerable level of expertise. Notably, all special needs teachers possessed beyond two years of teaching background, which indicated a level of competence gained through practical application in the classroom.

Moreover, the findings showed that 10.3% of educators had accumulated teaching experience spanning from 21 to 30 years, showcasing a group of highly experienced educators. Additionally, a noteworthy 36.5% of teachers had 3 to 5 years of experience, while 17.2% had 6 to 10 years of teaching experience. Collectively, these findings emphasize that the participants possessed a diverse range of teaching backgrounds,

reflecting a wealth of knowledge and understanding in dealing with learners with dyslexia or reading impairments.

The accumulated experience of these teachers implies that they have had ample opportunities to refine their instructional methods, adapt to various learning needs, and gain valuable insights into addressing challenges that students with dyslexia might encounter. The demonstrated level of expertise holds significant potential in cultivating a nurturing and inclusive learning environment, particularly for the study's target population. The data presented here is consistent with the conclusions drawn by Wandera et al. (2019), whose study affirmed that teachers' teaching experience had a great impact on learners' performance in the English during the KCPE examination in Kenya.

The study's findings reveal that a considerable proportion of the teachers, comprising 14 individuals (48.2%), held a diploma as their highest level of training, which accounts for nearly half of the participants. Conversely, only 5 teachers (17%) had achieved a degree, while 10 teachers (34.5%) possessed a P1 certificate. These findings revealed that most teachers had attained a higher level of training.

The demographic data presented in Table 4.2 underscores the critical role of teacher experience and training in supporting learners with dyslexia. A significant portion of teachers (37.9%) had between 11 and 20 years of teaching experience, aligning with Wandera (2019), who found a strong correlation between teaching experience and improved English language performance in Kenyan primary schools. Notably, all special needs education (SNE) teachers in the study had more than two years of experience,

suggesting a foundational familiarity with instructional strategies for learners with reading difficulties. This is a positive indicator, as prior studies emphasize that teachers with sustained classroom exposure are better equipped to implement adaptive teaching strategies for learners with dyslexia, (Kelly & Phillips, 2022; Westwood, 2018).

However, despite the substantial teaching experience among participants, an evident gap in specialized dyslexia training emerged. The study found that 48.2% of teachers possessed a diploma qualification, while only 17.2% held a degree. This contrasts with research from Western contexts, which emphasizes that postgraduate training in special education significantly enhances teachers' ability to implement evidence-based interventions for dyslexia, (Tibbetts, 2020; Fowler, 2024). The limited number of degree-holding educators suggests a potential constraint in the depth of pedagogical knowledge required for targeted intervention.

The observed disparity in teacher qualifications may explain the inconsistencies in reading comprehension intervention strategies, as seen in the lesson plan reviews. In contrast, studies in high-income contexts advocate for systematic, structured literacy instruction, which requires specialized training, Mitchell & Sutherland (2020). This study's findings reinforce the need for further capacity building to bridge the training gap and enhance the effectiveness of dyslexia interventions in Kenyan classrooms.

4.3 Specific Reading Comprehension Difficulties Experienced by Grade 4 Learners with Dyslexia in Nairobi City and Kiambu Counties, Kenya

The first objective of the study sought to find out specific reading comprehension difficulties experienced by Grade 4 learners with dyslexia in Nairobi City and Kiambu Counties, Kenya. The researcher used an adapted dyslexia screening test called the Dyslexia Screening Test- Junior (DST-J) document review, classroom observations and interviews with special needs English teachers to gather data on this subject. The results of this aspect of the study are presented as below.

4.3.1 Difficulties experienced by Grade 4 learner with Dyslexia in Nairobi City and Kiambu Counties Based on Scores from Adapted Dyslexia Screening Test – Junior

The study used the Adapted Dyslexia Screening Test – Junior (DST-J) to objectively measure dyslexia-related challenges across multiple subsets, providing critical insights into specific difficulties. Table 4.3 presents an overview of the students' scores.

Table 4.3 Adapted DST-J scores

Dyslexia Screening Test- Junior (DST-J) Subsets	RISK STATUS				N=141
	No Risk	At Risk	High Risk	Very High Risk	
1. Rapid naming	5(3.7%)	17(12.1%)	45(31.9%)	74(52.5%)	
2. One minute reading	2(1.4%)	10(7.1%)	60(42.6%)	69(48.9%)	
3. Verbal fluency	7(5.0%)	13(9.2%)	53(37.6%)	68(48.2%)	
4. Segmentation	3(2.1%)	20(14.2%)	46(32.6%)	72(51.1%)	
5. Rhyme	5(3.6%)	15(10.6%)	51(36.2%)	70(49.7%)	
6. One-minute writing	3(2.1%)	8(5.7%)	45(32.0%)	85(60.3%)	
7. Vocabulary	4(2.8%)	12(8.5%)	52(36.9%)	73(51.8%)	
Average	3.1%	9.0%	34.2%	53.7%	

The results of the Dyslexia Screening Test – Junior (DST-J) provided critical insights into the specific difficulties encountered by Grade 4 learners formally diagnosed with dyslexia

in Nairobi City and Kiambu Counties. The scores revealed that 53.7% of the 141 learners were classified as being at a very high risk of dyslexia, indicating profound deficits in multiple literacy-related domains. Additionally, 34.2% of the learners were identified as high risk, further confirming significant impairments in reading, spelling, and writing fluency. A smaller proportion, 9.0%, fell into the at-risk category, displaying notable yet less severe dyslexic tendencies. Only 3.1% of the learners demonstrated no risk, reinforcing the notion that all participants exhibited varying degrees of reading difficulty, as consistent with their formal dyslexia diagnoses by the Educational Assessment and Research Centre (EARC).

The findings align closely with the work of Fakude (2020), whose developmental model of dyslexia emphasizes phonological deficits as primary contributors to reading and spelling impairments. The high percentage of learners struggling with spelling (67.4%) and writing (60.3%) is consistent with Capin et al., (2021) and Mulanya (2020) who asserts that dyslexic learners face persistent difficulties in encoding words due to weak phoneme-grapheme associations.

Similarly, Lo-Oh et al. (2020) found that dyslexic children exhibit significant delays in reading fluency and spelling accuracy, reinforcing the current study's findings. The observed deficits in one-minute reading (48.9% very high risk) parallel findings from Hebert et al. (2018) and), who highlighted that dyslexic learners struggle with rapid word recognition due to impaired phonological and orthographic mapping.

The findings of this study partially fill existing research gaps by providing a detailed, skill-specific analysis of the difficulties faced by diagnosed learners with dyslexia in the Kenyan context. While previous studies (Muriungi & Ngigi, 2021; Cheruiyot et al., 2015) primarily focused on prevalence rates, this research moves beyond identification to explore the specific literacy challenges these learners experience.

4.3.2 Difficulties experienced by Grade 4 learner with Dyslexia in Nairobi City and Kiambu Counties Based Document Review, Class Observations, Interview with Teachers.

The challenges faced by learners with dyslexia in Nairobi City and Kiambu Counties were examined through multiple sources, including document reviews, classroom observations, and interviews with teachers. The triangulation of these qualitative data sources strengthened the reliability of the quantitative data findings by the DST-J, revealing a consistent pattern of literacy difficulties among the assessed learners.

To determine the specific reading comprehension difficulties, learners' progress records were examined, including Grade 3 National Assessment results and Grade 4 opener English test scores. The findings revealed that all sampled learners had received a "Below Expectation" (BE) rating, indicating significantly below-average proficiency in English. These results corroborate previous study by Ondiek (2022) who established that learners with dyslexia often exhibit persistent struggles in phonological processing, word recognition, and comprehension skills, thereby affecting their academic performance.

Classroom observations provided additional insights into how dyslexia manifested in real-time learning environments. Many learners exhibited frequent hesitation when reading aloud, mispronouncing words, skipping lines, or substituting incorrect words. This behavior is consistent with van den Bunt's (2018) phonological deficit hypothesis, which suggests that impaired phonological processing hampers word recognition and reading fluency. Additionally, learners struggled to extract meaning from texts, even when they could decode individual words correctly. They often failed to recall key details, infer meaning from context, or construct coherent responses to comprehension questions. These findings align with Philip (2019), who noted that learners with dyslexia in Kenyan schools experience challenges not only with phonemic awareness but also with syntactic and semantic processing.

Writing tasks also posed significant difficulties. Learners required extended time to formulate responses, and when they did write, their spelling was inconsistent, and their sentences often lacked coherence. Many also found reading and writing tiring, reinforcing Gray et al. (2019) assertion that dyslexia affects cognitive stamina and handwriting quality since it has negative impact on working memory and writing fluency. A significant proportion of learners read slowly and repeatedly, struggled with comprehension questions, and had difficulty identifying main points in a text.

Interviews with teachers reinforced these findings, with educators unanimously agreeing that their learners exhibited profound difficulties in reading, spelling, and comprehension. One teacher in Nairobi County described the reading struggles, stating,

"Even when they memorize a word today, they seem to forget it by tomorrow. Their reading is slow and labored, and some will just guess the words instead of decoding them."

Another teacher from Kiambu County emphasized the challenge of comprehension, noting,

"You can see that they are trying, but the moment a passage is long, they lose track of what they are reading. If you ask them to explain, they will often give unrelated answers."

Writing difficulties were also highlighted, with one teacher remarking,

"They avoid writing tasks or copy from their peers because forming sentences is a challenge. Even when they write, their spelling is inconsistent, and their sentences lack proper structure."

These findings are consistent with Capin et al. (2021), who argued that phonemic awareness deficits play a major role in the reading difficulties of learners with dyslexia. However, a key departure from previous studies emerged in the nature of comprehension challenges observed in this research. While much of the existing literature attributes reading struggles primarily to phonological deficits, the current study found that learners also faced significant syntactic and semantic processing difficulties. This aligns with a study by Philip (2019), who identified similar challenges among Kenyan learners with dyslexia, likely due to the multilingual nature of their learning environment.

The triangulated data confirm that learners with dyslexia in Nairobi City and Kiambu Counties experience substantial literacy challenges, particularly in reading comprehension, word recognition, and written expression. The convergence of data from document reviews, classroom observations, and teacher interviews strengthens the validity of these findings, making a compelling case for targeted interventions. Thus, this study fills a contextual gap by providing empirical evidence specific to the Kenyan educational setting.

4.4 Extent to which reading comprehension abilities levels of Grade 4 learners with dyslexia moderate the relationship between reading comprehension intervention strategies and English reading performance in Nairobi City and Kiambu counties, Kenya.

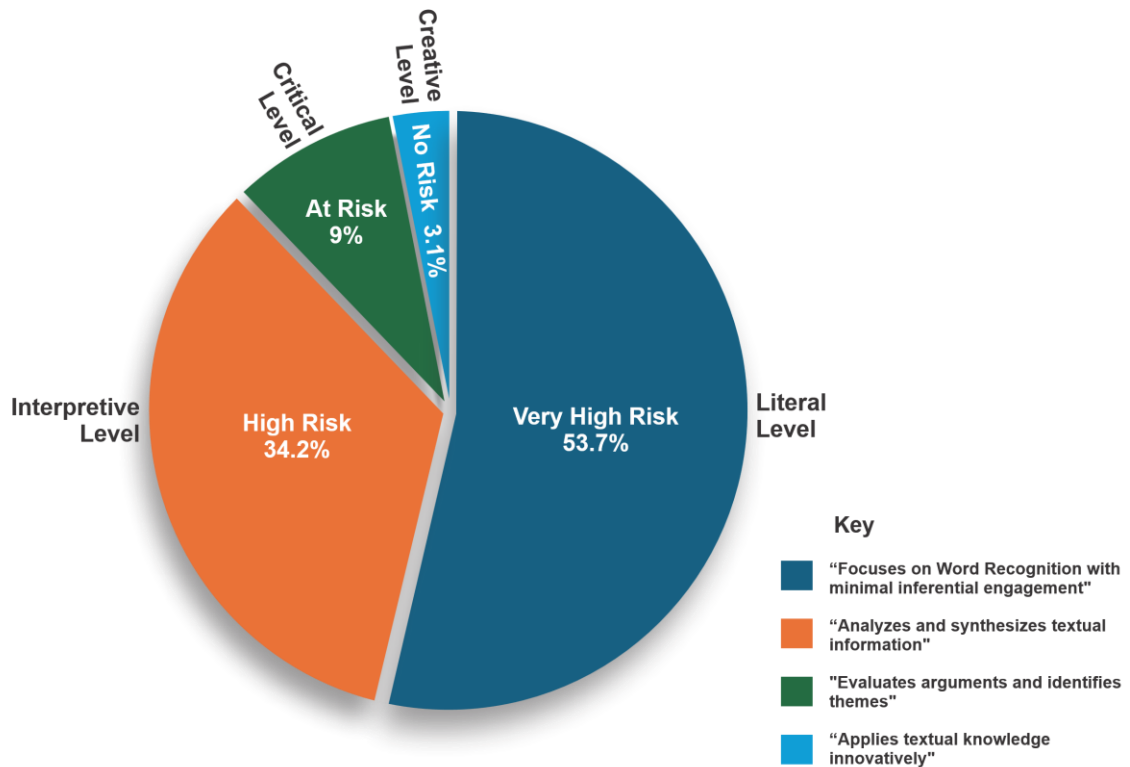
The second objective of this study sought to examine the extent to which the comprehension abilities of Grade 4 learners with dyslexia moderate the relationship between reading comprehension intervention strategies and English reading performance in Nairobi City and Kiambu Counties, Kenya. To address this objective, the researcher employed a multi-method approach, incorporating classroom observations, document analysis, and interviews with special needs English teachers. The findings from this component of the study are presented in the subsequent sections.

4.4.1 Reading Comprehension Ability Levels of Grade Four Learners with Dyslexia in Nairobi and Kiambu Counties, Based on DST—J Scores

This section presents findings on the reading comprehension ability levels of Grade Four learners with dyslexia in Nairobi and Kiambu Counties based on Dyslexia Screening Test-Junior (DST-J) scores. The analysis highlighted the correlation between dyslexia risk status

and comprehension ability levels, illustrating how learners at higher risk levels exhibit lower comprehension proficiency. Figure 4.1 illustrates the distribution of reading comprehension ability levels in relation to dyslexia risk status.

Figure 4.1 Reading Comprehension Ability Levels in Relation to Dyslexia Risk Status.



The findings in figure 4.1 revealed a strong inverse relationship between dyslexia risk status and reading comprehension ability among Grade Four learners in Nairobi City and Kiambu Counties. A majority of the learners (53.7%) were classified as Very High Risk, with comprehension restricted to the Literal Level. These learners struggled with basic word recognition and exhibited minimal inferential engagement with textual content, reflecting significant challenges in decoding and linguistic processing. This aligns with prior research Borleffs et al., (2019), which underscores that children with severe dyslexia

primarily experience phonological deficits that hinder their ability to extract deeper meaning from text.

Similarly, 34.2% of learners were categorized as High Risk, demonstrating comprehension at the Interpretive Level. While they exhibited some ability to analyze and synthesize information, their difficulty in fully integrating and interpreting content underscored persistent literacy deficits. These findings parallel those of Stienert-Parker (2024), who found that learners with moderate dyslexia often struggle with complex textual comprehension, despite some analytical reading skills. A smaller proportion, 9.0%, were classified as At Risk, exhibiting Critical Level comprehension. These learners demonstrated the ability to evaluate arguments and identify key themes, indicating a more developed engagement with textual content.

Lastly, 3.1% of learners had No Risk, excelling at the Creative Level and displaying advanced inferential and interpretative abilities. This pattern mirrors findings by Zhang (2021), who observed that students with stronger phonological awareness and vocabulary skills exhibit higher-order comprehension abilities. The results reaffirm the need for early intervention and specialized literacy instruction, particularly for learners in the higher-risk categories, to bridge comprehension gaps and enhance overall reading performance.

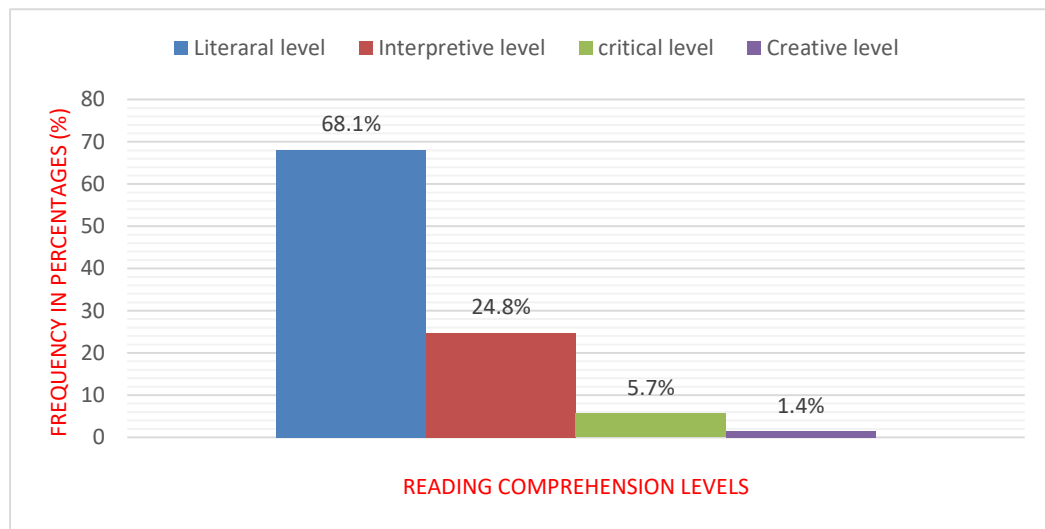
4.4.2 Reading Comprehension Ability Levels of Grade Four Learners with Dyslexia in Nairobi and Kiambu Counties, Based on the classroom observation checklist

This section provides a comprehensive analysis of the reading comprehension ability levels of Grade 4 learners with dyslexia in Nairobi and Kiambu Counties, based on classroom

observations. Data was collected using a structured classroom observation checklist to evaluate learners' engagement with texts, application of comprehension strategies, and reading challenges.

Figure 4.2 presents the distribution of reading comprehension ability levels among the learners, offering a visual representation of the observed trends.

Figure 4.2 Reading Comprehension ability levels of Grade 4 Learners with Dyslexia



From figure 4.2, classroom observations revealed considerable variation in comprehension ability levels among learners, which significantly moderated the effectiveness of reading interventions. The majority of learners (68.1%) exhibited only a literal level of comprehension, characterized by a primary focus on word recognition with minimal inferential engagement. Their decoding difficulties and limited pattern recognition hindered their ability to grasp deeper textual meanings.

During the lesson observation, the researcher noted that standard phonics-based interventions proved inadequate in enhancing comprehension, suggesting the necessity of

explicit inferencing and meaning-making strategies. These findings indicate that literal-level learners benefit the least from existing interventions, necessitating the implementation of foundational comprehension strategies.

A smaller subset of learners (24.8%) demonstrated interpretive comprehension ability level, where they could analyze and synthesize textual information but struggled with organization and logical reasoning. These difficulties impeded their ability to establish connections between ideas, thus their reading performance still remained low. Although some progress was observed, interventions lacked specificity in addressing cognitive processing barriers, underscoring the need for structured scaffolding strategies. Interpretive-level learners showed moderate gains, in terms of improved reading performance but also required targeted cognitive support to enhance comprehension outcomes.

A minority of learners (5.7%) exhibited critical comprehension ability levels, enabling them to evaluate arguments and identify themes, while only 1.4% reached the creative comprehension ability level, applying textual knowledge innovatively. These learners responded most effectively to interventions, reinforcing the role of comprehension ability as a crucial moderator of reading success. The strong response of critical and creative-ability level learners to interventions as evidenced by observed correct responses to classroom comprehension tasks highlights the necessity for differentiated instructional approaches tailored to varying comprehension levels.

The study extends the work of Tunmer, W and Hoover (2017 who emphasized the role of cognitive processing in reading development. The findings suggest that structured

scaffolding strategies tailored to different comprehension levels are critical for intervention success. Furthermore, while prior studies have documented the importance of fluency and phonemic awareness (Layes et al., 2021; Pape-Neumann et al., 2015). However, this study highlights that these factors alone do not suffice in improving reading comprehension outcomes for learners with dyslexia.

4.4.3 Reading Comprehension Ability Levels of Grade Four Learners with Dyslexia in Nairobi and Kiambu Counties, Based on the Document Analysis and Interviews with Special Needs English Teachers.

Document analysis, including referral forms, class registers, and academic reports, further confirmed the persistence of lower comprehension ability levels over time. Academic records consistently indicated low performance in English indicating low comprehension abilities across multiple assessment periods, suggesting that despite sustained exposure to interventions, learners struggled to achieve significant improvements in reading comprehension. These findings highlight the limitations of interventions that primarily target word recognition and fluency without addressing deeper comprehension deficits.

A review of school attendance records confirmed that all participating learners maintained consistent school attendance. This finding eliminates absenteeism as a contributing factor to poor reading performance, reinforcing the argument that dyslexia-related reading difficulties persist despite regular instructional exposure.

These results align with previous finding that dyslexia impedes literacy development even when learners receive structured reading instruction (Kelly & Phillips, 2022). However, the findings contrast with Tengberg and Olin-Scheller (2016), who argued that strategic

interventions can significantly enhance reading comprehension. The observed variance in intervention outcomes suggests that while strategies were in place, they lacked the specificity required to address the unique comprehension challenges faced by learners with dyslexia.

Teacher interviews provided more qualitative insights into the moderating effect of comprehension abilities on reading performance. Teachers consistently emphasized that learners' comprehension ability levels were a critical determinant of reading success, regardless of the intervention strategies employed.

One teacher observed,

“Many learners read aloud fluently but fail to grasp the meaning of the passage, making it difficult to engage in deeper discussion.”

Another teacher noted,

“Interventions help with phonics and decoding, but without comprehension skills/abilities, learners still struggle with inferential and critical reading tasks.”

These statements reinforced the notion that while phonological interventions may enhance decoding abilities, they remain insufficient in addressing higher-order comprehension difficulties.

These study findings align with prior research by Akinade (2022), which highlights the persistent nature of dyslexia-related reading difficulties despite structured instructional exposure. Similarities were also observed with Suggate, 2016), who emphasized that

phonics-based interventions improve decoding but are insufficient for comprehension development. This study's findings reinforce these arguments, demonstrating that comprehension ability levels moderate reading success significantly.

Furthermore, the study's second objective findings contribute to existing literature by providing empirical evidence on the moderating role of comprehension abilities in reading intervention effectiveness. These findings fill a critical gap by illustrating that standard phonics-based interventions do not adequately address comprehension challenges among learners with dyslexia. The results underscore the need for intervention programs that integrate explicit inferential and meaning-making strategies, alongside cognitive scaffolding techniques, to support learners at varying levels of comprehension.

4.5 Reading Comprehension Intervention Strategies commonly used for Grade 4 Learners with Dyslexia in Nairobi City and Kiambu Counties, Kenya.

The third objective of this study explored the reading comprehension intervention strategies commonly used by teachers for Grade 4 learners with dyslexia in Nairobi City and Kiambu counties. Data was collected through classroom observations, document reviews (particularly lesson plan analysis), and teacher interviews. This multifaceted approach provided valuable insights into instructional methods, offering a comprehensive understanding of the prevalence and effectiveness of various intervention strategies for supporting learners with dyslexia.

4.5.1 Most commonly used reading comprehension intervention strategies for Grade 4 learners with dyslexia based on Classroom Observations.

Classroom observations provided critical insights into the reading comprehension intervention strategies most frequently employed by teachers for Grade 4 learners with dyslexia. These observations captured real-time instructional practices, highlighting the effectiveness and consistency of various strategies in supporting learners' reading development. The results are presented in Table 4.4.

Table 4.4 Reading Comprehension Intervention Strategies Used by Teachers

Reading comprehension Intervention Strategies	Frequency N=29	Percentage %
Material accommodation strategies (Tusome Text-to-speech software, Use of dyslexia-friendly fonts, Extended time for assignments and exams, Use of Visual Aids, Highlighting Key Information and Breaking Information into Smaller Chunks among others)	18	62.1
Strategies involving explicit direct instruction (Vocabulary instruction, Phonological skills instruction, Phonemic skills instruction,	20	70.0
Peer-assisted learning strategies (Paired Reading, Jigsaw Reading, Peer Tutoring, Collaborative Reading, Partner Reading)	12	41.4
Repetition Strategy (Choral Reading, Echo Reading, Reciprocal Teaching, Paired Reading, Repeated Readings, Audio Recordings)	24	82.8
Stimulating classroom environment strategies (Reading Corners, Multi-Sensory Learning Stations, Interactive Technology, Classroom Library, Visual Displays, Flexible Seating, Positive Reinforcement)	17	58.6
Others Pre-reading activities to activate prior knowledge by discussing relevant topics, previewing vocabulary; Graphic Organizers; Differentiated Instruction.	11	37.9

The results, as presented in Table 4.4, reveal that teachers utilized a variety of strategies to support learners' reading comprehension. The most commonly implemented approach was the repetition strategy, adopted by 82.8% of teachers. This was followed by explicit direct instruction, which was employed by 70.0% of teachers. Material accommodation strategies ranked third at 62.1%, while stimulating classroom environment strategies were used by 58.6% of teachers. Peer-assisted learning strategies were applied by 41.4% of teachers, whereas other strategies, including differentiated instruction and pre-reading activities, were used by 37.9% of teachers.

The findings of this study align with established research on dyslexia intervention strategies, particularly in the effectiveness of repetition, direct instruction, and multi-sensory approaches. The prominence of repetition strategies and direct instruction confirms existing literature by Snowling (2013) and Graves (2016), which emphasize structured and explicit teaching techniques for dyslexic learners. Additionally, the use of material accommodation strategies corresponds with the recommendations by Nkomo, (2018), who advocated for dyslexia-friendly learning environments.

4.5.2 Most Commonly Used Reading Comprehension Intervention Strategies for Grade 4 Learners with Dyslexia Based on Document Review and Teacher Interviews

The document review, particularly the analysis of lesson plans, revealed that teachers integrated a variety of structured reading interventions tailored to the needs of learners with dyslexia. Many lesson plans incorporated explicit direct instruction strategies, including systematic vocabulary instruction and phonemic awareness exercises, aligning with best practices for dyslexia intervention. Additionally, a significant number of lesson plans

featured repeated reading activities, reinforcing comprehension through structured repetition.

Furthermore, the review affirmed that teachers employed diverse and structured reading comprehension intervention strategies, complementing the findings from classroom observations and interviews. These insights highlight the extent to which teachers systematically planned and executed interventions to support learners with dyslexia, addressing their specific reading challenges through evidence-based practices. The prominence of the repetition strategy aligns with established research highlighting the effectiveness of repeated exposure in reinforcing word recognition and comprehension for learners with dyslexia (Spear-Swerling, 2019).

During interviews, teachers emphasized the importance of repeated practice in enhancing comprehension. One teacher stated,

“I mostly use the repetition strategy and direct instruction on vocabulary, as well as reading comprehension strategies such as predicting. Before we read any text, I first write the words that I think they may struggle with, have them read aloud, explain the meaning, and then proceed. This helps them understand the text better.”

This finding is consistent with the work of O’connor, et al., (2017) who demonstrated that repetitive and structured literacy interventions significantly improve the reading performance of children with dyslexia. Similarly, explicit direct instruction was widely utilized by teachers, reinforcing the assertion by Conner (2023), that systematic vocabulary instruction enhances reading comprehension in children with dyslexia. A teacher described their approach:

“Tusome App has really helped me to teach reading to learners with reading impairments. In addition, I highlight important keywords, phrases, or headings using bold or different colored text to help learners focus on essential elements, aiding in comprehension and organization.”

Material accommodation strategies were also frequently employed, with teachers leveraging dyslexia-friendly fonts, visual aids, and extended time for assignments and exams. The effectiveness of these strategies aligns with previous research by Łodej, (2020), who found that adapting learning materials to accommodate cognitive processing differences significantly improves dyslexic students’ engagement and performance. One teacher explained,

“Look at my classroom! All these word charts and posters serve as references that reinforce reading comprehension skills. We do choral reading every morning; learners read words on the walls and short stories aloud, using expression and intonation to reinforce comprehension.”

While peer-assisted learning strategies were the least frequently used among the primary strategies, they still demonstrated relevance in promoting collaborative learning. Research by Topping (2020), supports the effectiveness of peer-mediated reading interventions in enhancing dyslexic learners’ fluency and comprehension. A teacher noted,

“I mostly use cooperative learning. I divide learners into small groups and assign specific roles related to reading comprehension, such as summarizing a text. The

groups include learners with mixed abilities, with at least one learner with dyslexia. They support each other and provide feedback as they work together.”

The study also found that stimulating classroom environment strategies played a significant role in fostering an inclusive learning atmosphere. Teachers created multi-sensory learning stations, reading corners, and interactive displays to engage learners. This finding is consistent with research by Mbatha (2018), who highlighted that a well-structured and visually stimulating learning environment can enhance comprehension for children with dyslexia. One teacher described their approach:

“I provide a supportive and inclusive learning environment where learners with dyslexia feel understood and empowered. We celebrate effort and achievement to create a positive classroom culture.”

However, notable gaps and divergences emerged in the study. First, while peer-assisted learning strategies have been extensively promoted in Western studies Fathi and Shabani (2020), they were among the least frequently used interventions in this study. This discrepancy suggests potential cultural and contextual differences in the application of collaborative reading methods. Further research is needed to explore why peer-assisted learning is less favored in Kenyan classrooms and how it can be effectively integrated.

Second, the integration of digital tools such as the Tusome App was a distinctive feature of this study. While digital literacy tools have been widely studied in developed contexts Grove, (2018), their implementation in low-resource settings such as Kenya remains underexplored. The findings indicate that digital tools significantly enhance dyslexic

learners' engagement, highlighting an area for further investigation into how technology can be optimized in literacy interventions.

The study also filled a crucial research gap by providing empirical evidence on the specific reading comprehension strategies used in Kenya, a region where studies on dyslexia interventions remain limited. Unlike previous research that primarily focuses on Western educational systems, this study contextualizes intervention strategies within an African setting, offering practical insights for policymakers, educators, and curriculum developers.

4.6 Relationship Between Reading Comprehension Intervention Strategies and English Reading Performance Among Grade 4 Learners with Dyslexia in Nairobi City and Kiambu Counties, Kenya.

The study's fourth objective examined the relationship between reading comprehension intervention strategies and English reading performance among Grade 4 learners with dyslexia in Nairobi City and Kiambu counties. It is important to note that the researcher observed natural variations in intervention use and analyzed their relationship with reading performance. Since teachers applied existing strategies at varying intensities, experimental procedures were not involved.

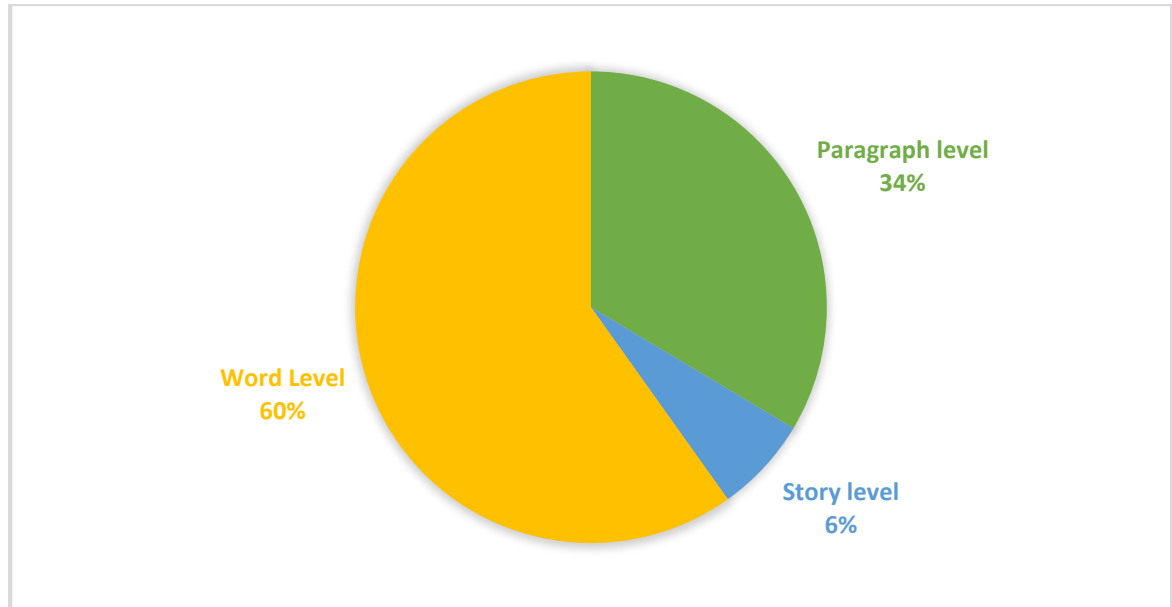
Teachers were encouraged to intensify research-proven interventions based on students' literacy needs. Reading performance was measured using two comprehension tests: Test 1 provided baseline data with or without interventions, while Test 2 captured performance after two weeks of intensified intervention use. Comparing these scores allowed an assessment of the impact of intervention strategies.

4.6.1 Analysis of Reading Comprehension Test 1 Scores

The first reading comprehension test results, illustrated in Figure 4.3, provide insight into learners' initial comprehension levels before the implementation of intervention strategies.

The results were as presented in figure 4.3.

Figure 4.3 Reading Comprehension Test 1 Scores of grade 4 learners with dyslexia

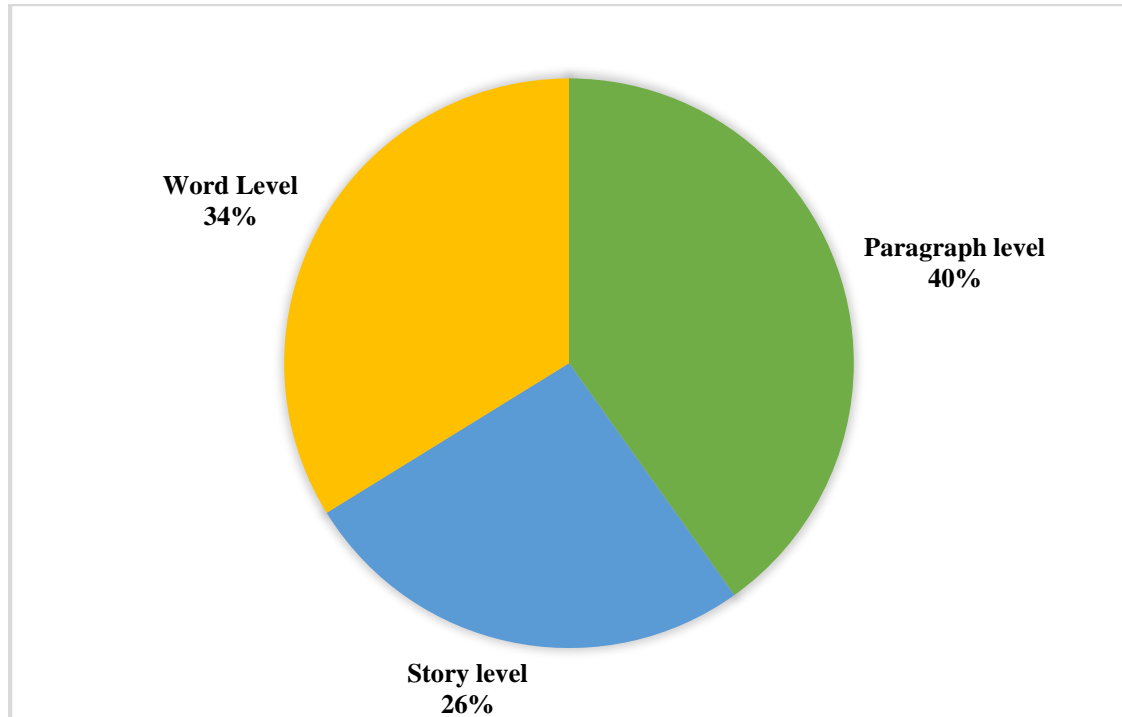


The data from Figure 4.3 revealed that the majority of learners (60%) were at the word level, meaning they struggled primarily with decoding individual words and understanding the meaning of texts holistically. This indicates significant difficulties in word recognition and comprehension. 34% of the learners were at the paragraph level, demonstrating better word recognition but continued difficulties in synthesizing information across sentences. Only 6% of the learners were at the story level, signifying an advanced comprehension ability, including grasping themes and making inter-textual connections.

4.7.2 Reading Comprehension Test 2 Scores

Two weeks after the first comprehension test, a second test was administered to assess whether the intensified use of reading intervention strategies had an impact on learners' comprehension levels. Figure 4.4 shows the results.

Figure 4.4 Reading Comprehension Test 2 Scores of grade 4 learners with dyslexia



As illustrated in Figure 4.4, a significant shift in reading comprehension levels was observed. The percentage of learners at the word level decreased from 60% to 34%, while those at the paragraph level increased from 34% to 40%. Notably, the proportion of learners at the story level rose from 6% to 26%, suggesting a substantial improvement in reading comprehension abilities and consequently in reading performance.

These results imply that the interventions were effective in facilitating learners' transition from basic word recognition to higher levels of reading comprehension. The findings

corroborate the study of Matuga (2019), which highlights that evidence-based interventions can enhance dyslexic learners' ability to process and understand written text.

The observed improvements in reading comprehension align with previous research emphasizing the role of structured interventions in supporting learners with dyslexia. Studies by Araghi (2024) and Ray (2020) have demonstrated that phonological awareness training, guided oral reading, and comprehension strategy instruction significantly improve reading outcomes for learners with dyslexia. The findings of this study support these conclusions, as learners who were exposed to targeted interventions exhibited measurable progress in their reading comprehension skills.

Despite the observed improvements, some learners remained at the word level even after the interventions. This aligns with existing research, which suggests that while certain learners with dyslexia respond positively to targeted interventions, others require more intensive, individualized, and sustained instruction to achieve substantial progress (Fonyuyshey & Nsah, 2019). These findings reinforce the conclusions drawn from the second objective, which established that a learner's underlying reading comprehension ability, specifically their capacity to understand, interpret, and derive meaning from text, moderates the effectiveness of reading interventions on overall reading performance.

4.7.3 Correlation Analysis of Reading Comprehension Intervention Strategies and Reading Performance in English

The findings on the correlation between reading comprehension intervention strategies and reading performance in English among Grade Four learners with dyslexia in Nairobi and

Kiambu counties, Kenya were preened in this section. The study employed Pearson’s correlation statistical test to evaluate the following null hypothesis:

H₁₀: There is no significant relationship between reading comprehension intervention strategies and reading performance in English among Grade Four learners with dyslexia in Nairobi and Kiambu counties, Kenya. Pearson’s correlation analysis was conducted to assess this relationship, and the results are presented in Table 4.5.

Table 4.5 Correlation Analysis of Reading Comprehension Intervention Strategies and Reading Performance in English

		Reading comprehension intervention strategies	Performance in English comprehension tests
Reading comprehension intervention strategies	Pearson Correlation	1	.355**
	Sig. (2-tailed)		.000
	N	141	141
Performance	Pearson Correlation	.355**	1
	Sig. (2-tailed)	.000	
	N	141	141

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation coefficient ($r = .355$, $p < .001$) indicates a moderate positive relationship between the implementation of reading comprehension intervention strategies and English reading performance among learners with dyslexia. The statistical significance ($p = .000$) confirms that this relationship was unlikely to have occurred by chance, thus providing empirical evidence that increased application of targeted reading comprehension strategies corresponded to improved reading performance. Given that the correlation analysis yielded

a statistically significant result ($r = .355$, $p = .000$), the null hypothesis (H_0) was rejected. This finding supports the alternative hypothesis that there is a significant relationship between reading comprehension intervention strategies and reading performance among learners with dyslexia.

Consistent with studies by Al Otaiba et al. (2023) and Hall et al. (2023), the results reaffirm that explicit reading interventions improve comprehension outcomes for learners with dyslexia. However, these findings suggest that while reading comprehension interventions had a meaningful impact on learners' reading performance, the moderate strength of the correlation implies that other factors also influence reading performance.

This study diverges from more robust correlations reported in studies conducted in Western contexts, where intensive intervention programs have demonstrated stronger effects, (Vaughn, et al., 2019; Austin, 2017). This discrepancy may be attributed to contextual differences such as teacher training, resource availability, and implementation fidelity. Furthermore, the findings extend the discourse by highlighting that some learners, despite intervention efforts, remain at the word-level stage, underscoring the need for more individualized and sustained instructional strategies.

While prior studies have extensively examined reading interventions in high-resource settings, this study filled a critical gap by demonstrating their applicability and relative effectiveness in under-resourced educational environments such as Nairobi city and Kiambu counties in Kenya. Moreover, it refined the understanding of intervention responsiveness, illustrating that while structured reading strategies yield measurable improvements, their impact is moderated by learners' underlying comprehension abilities.

The findings affirmed that reading comprehension intervention strategies significantly enhance reading performance among Grade Four learners with dyslexia, though the degree of impact varies among individuals. This study underscored the necessity for sustained, individualized interventions to optimize literacy outcomes. Future research should explore additional moderating variables, such as cognitive processing speed and instructional duration, to further refine intervention frameworks for learners with dyslexia in diverse educational contexts.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

In this chapter, a summary is provided encompassing the primary research findings, conclusions drawn from those findings, recommendations derived from the study, and suggestions proposed for future research. These components are presented in relation to the research objectives outlined earlier in the study.

5.2 Summary of Research Findings

This section entails summary of the study based on the objectives. The study aimed at determining reading comprehension ability levels of fourth grade learners with dyslexia, assessing the reading comprehension intervention strategies used for fourth grade learners with dyslexia, establishing the relationship between reading comprehension ability level and English performance among grade four learners with dyslexia, and determining the relationship between reading comprehension strategies and reading performance in English language among fourth-grade learners with dyslexia in Nairobi and Kiambu counties, Kenya.

5.2.1 Specific Reading Comprehension Difficulties Experienced by Grade 4 Learners with Dyslexia

On reading comprehension difficulties experienced by learners with dyslexia, findings were derived from an adapted Dyslexia Screening Test – Junior (DST-J), document review, classroom observations, and interviews with special needs English teachers.

The DST-J results indicated that 53.7% of learners were at a very high risk of dyslexia, experiencing significant deficits in rapid naming, reading fluency, segmentation, rhyming, and writing. Additionally, 34.2% were classified as high risk, exhibiting notable impairments in spelling and vocabulary. These findings align with previous research emphasizing phonological processing deficits as a key challenge in dyslexic learners.

Classroom observations showed that these learners frequently hesitated while reading aloud, mispronounced words, skipped lines, or substituted incorrect words. They struggled with text comprehension, recalling key details, making inferences, and responding coherently to comprehension questions. Writing challenges included inconsistent spelling, lack of coherence, and extended time needed to formulate responses. Teachers corroborated these findings, reporting that learners had difficulty retaining newly learned words, exhibited slow and effortful reading, and avoided writing tasks due to spelling difficulties and sentence structuring challenges.

Additionally, the study identified common reading behaviors among at-risk learners. Many read slowly, often pausing and rereading sentences to grasp meaning. Repetitive reading was a frequent strategy to aid comprehension, yet it did not always result in accurate text interpretation. The prevalence of mispronunciations and incorrect substitutions of words further contributed to reduced reading fluency. Inferential thinking was also weak, affecting learners' ability to deduce implicit meanings from texts. Teachers noted that these difficulties extended to written expression, where learners struggled to construct logical, grammatically sound sentences.

Document reviews showed that all sampled learners had performed below expectations in national assessments, reinforcing the findings of phonological, syntactic, and semantic processing difficulties. Interviews with teachers highlighted challenges in reading retention, inferencing, and constructing coherent written responses. These findings underscore the challenges faced by learners with dyslexia in achieving proficient reading comprehension levels and highlight the importance of tailored interventions to support their learning needs.

5.2.2 Extent to which reading comprehension abilities levels of Grade 4 learners with dyslexia moderate the relationship between reading comprehension intervention strategies and English reading performance

This study examined the extent to which the reading comprehension abilities of Grade 4 learners with dyslexia moderate the relationship between reading comprehension intervention strategies and English reading performance in Nairobi City and Kiambu Counties, Kenya. A multi-method approach was employed, incorporating the Dyslexia Screening Test-Junior (DST-J), classroom observations, document analysis, and interviews with special needs English teachers.

Findings from the DST-J revealed a strong inverse relationship between dyslexia risk status and reading comprehension ability. Over 50% of learners at Very High Risk demonstrated only literal comprehension, struggling with basic word recognition and inferential reasoning. While 34.2% exhibited interpretive-level comprehension. Only 9.0% and 3.1% of learners demonstrated critical and creative comprehension levels, respectively.

Classroom observations confirmed these trends, with 68.1% of learners exhibiting limited engagement beyond word decoding. Interventions, primarily phonics-based, proved inadequate for enhancing deeper comprehension skills, necessitating a shift towards explicit meaning-making strategies. Document analysis further revealed that despite continuous exposure to interventions, learners' comprehension levels remained stagnant, indicating limitations in existing approaches. Teacher interviews underscored that comprehension ability significantly influenced intervention effectiveness, with phonological interventions proving insufficient without complementary inferential and cognitive scaffolding strategies.

5.2.3 Reading Comprehension Intervention Strategies Most Commonly Used for Grade 4 Learners with Dyslexia

On reading comprehension strategies used for grade 4 learners with dyslexia, the study used a mixed-method approach, incorporating classroom observations, document reviews (lesson plans), and teacher interviews to identify most commonly used reading comprehension intervention strategies used for fourth grade learners with dyslexia.

Classroom observations revealed that teachers employed various intervention strategies, with repetition strategies (82.8%) and explicit direct instruction (70.0%) being the most frequently used. Material accommodation strategies (62.1%) and stimulating classroom environment strategies (58.6%) also played a significant role in supporting learners. Peer-assisted learning strategies (41.4%) and differentiated instruction (37.9%) were used to a lesser extent.

Lesson plan analysis confirmed these findings, showing structured use of explicit direct instruction and repeated reading strategies. Teachers frequently included systematic vocabulary instruction and phonemic awareness exercises in their lesson plans. Repetition activities, such as choral reading and echo reading, were integrated to reinforce comprehension. The use of visual aids and text modifications further supported learners with dyslexia.

Teacher interviews provided qualitative insights, emphasizing the effectiveness of structured repetition, phonemic awareness instruction, and material accommodations. Teachers highlighted the use of digital tools like the Tusome app to enhance engagement. Some expressed challenges in implementing peer-assisted strategies, citing cultural and contextual factors. The findings align with existing literature on dyslexia interventions, emphasizing structured, explicit teaching techniques and multi-sensory approaches.

5.2.4 Relationship between Reading Comprehension Strategies and Reading Performance in English Language among Grade 4 Learners with Dyslexia

The study investigated the relationship between reading comprehension intervention strategies and English reading performance among Grade 4 learners with dyslexia in Nairobi City and Kiambu counties. Findings revealed that targeted interventions significantly improved reading comprehension abilities, though the extent of progress varied among learners.

Initial assessments (Test 1) indicated that 60% of learners were at the word level, struggling with basic decoding, while 34% were at the paragraph level, and only 6% achieved story-

level comprehension. However, after intervention (Test 2), the proportion of learners at the word level reduced to 34%, those at the paragraph level increased to 40%, and 26% reached the story level, demonstrating substantial improvement.

Correlation analysis ($r = .355$, $p < .001$) confirmed a moderate positive relationship between reading comprehension interventions and English reading performance. This suggests that structured intervention strategies, such as phonological awareness training, guided reading, and comprehension strategy instruction, were effective in enhancing reading skills. However, some learners remained at the word level despite interventions, indicating that while interventions were beneficial, additional factors such as cognitive processing speed and instructional intensity influence outcomes. This highlights the need for more individualized, sustained instructional approaches.

5.3 Conclusions

The primary objective of this study was to examine the correlation between reading comprehension intervention strategies and the reading performance of Grade 4 learners with dyslexia in Nairobi City and Kiambu counties, Kenya. Based on the study's findings, the following conclusions were drawn.

With regard to identifying reading comprehension difficulties among learners with dyslexia, the study established that Grade 4 learners with dyslexia in Nairobi City and Kiambu Counties experience significant challenges in reading comprehension, spelling, and written expression. The convergence of data from multiple sources reinforced the validity of these findings, underscoring the urgent need for targeted literacy interventions.

In relation to the objective of determining the extent to which reading abilities moderate the relationship between reading comprehension intervention strategies and English reading performance, the study concluded that reading comprehension abilities significantly influence this relationship. Learners with lower comprehension levels derived minimal benefits from the interventions, emphasizing the necessity for structured scaffolding and inferential reasoning strategies. The findings highlight the importance of multi-tiered instructional approaches tailored to diverse comprehension needs.

Furthermore, the study established that repetition strategies and explicit direct instruction are the most commonly employed methods for enhancing reading comprehension among Grade 4 learners with dyslexia in Nairobi City and Kiambu Counties. Material accommodations and enriched classroom environments further contributed to improved learning outcomes. Although peer-assisted strategies remained underutilized, they demonstrated potential benefits when adapted to local classroom dynamics. Additionally, the emerging use of digital tools presented a promising avenue for supporting reading comprehension interventions.

Regarding the relationship between reading comprehension intervention strategies and reading performance, the study identified a significant positive correlation between these variables. The findings confirmed that reading comprehension intervention strategies enhance English reading performance among learners with dyslexia. However, the moderate strength of the correlation suggests that while interventions are effective, other factors, including cognitive processing speed and instructional quality, also contribute to reading performance outcomes.

5.4 Recommendations

Based on the research findings, the following recommendations were formulated for both practice and policy.

5.4.1 Practice Recommendations

- i. Quality assurance curriculum support officers should enhance assessment processes in schools to ensure early identification of dyslexia and appropriate intervention strategies.
- ii. Teachers should implement evidence-based reading comprehension strategies tailored to the needs of learners with dyslexia.
- iii. Individualized Education Plans (IEPs) should be developed and regularly reviewed to track progress and adjust interventions accordingly.
- iv. Schools should promote awareness campaigns to reduce stigma and educate the community on dyslexia and its impact on learning.
- v. Active parental involvement should be encouraged through resources, workshops, and guidance to support reading development at home.

5.4.2 Policy Recommendations

- i. The Ministry of Education (MoE) should establish structured teacher training programs focusing on dyslexia, incorporating structured literacy approaches and multisensory teaching methods.
- ii. The government, through the MoE, should ensure that learners with dyslexia have access to free assistive technology to enhance their reading comprehension skills.

- iii. Schools should integrate inclusive education policies that mandate accommodations and specialized interventions for learners with dyslexia.
- iv. The MoE should implement monitoring and evaluation frameworks to assess the effectiveness of interventions for learners with dyslexia in schools.

5.4.3 Recommendations for Further Research

- i. Further studies should explore the impact of teachers' characteristics on the reading performance of Grade Four learners with dyslexia.
- ii. Research should investigate the role of parental involvement in fostering reading development among learners with dyslexia.
- iii. Comparative studies should be conducted in different regions or educational settings to allow for the generalization of findings.

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APPENDICES

APPENDIX I A: COMPREHENSION TESTS FOR STUDENTS



Reading Test (1)

2015

Paragraph 1

Mary has a very big garden. Her friend gave it to her. She has grown flowers on it. The flowers look good.

Paragraph 2

John is not feeling well. He will miss school today. His father gave him medicine. He will get well soon.

- Let the child choose any of the two paragraphs and read
- If the child reads the paragraph, take him/her to the STORY
- If the child cannot read the paragraph, (makes more than 2 mistakes), mark him/her at WORD LEVEL

Story

Martin had seven white chicks. An eagle ate five of the chicks. Martin was very angry. He wanted to trap the eagle. He did not know how to trap it. His friend Tom suggested they could use a rat.

The boys went to look for a rat. They saw one entering a hole. They dug deep into the hole. A big snake came out of the hole. The boys ran away screaming loudly. They did not trap the eagle.

1. Why was Martin angry?
2. Why were the boys digging into the hole?

- Only give the story to children who have correctly read the paragraph
- If the child cannot read the story (makes more than 4 mistakes), mark him/her at PARAGRAPH LEVEL
- If the child reads the story, mark him/her at STORY LEVEL
- The two questions should only be given to a child who is at story level



READING TEST (3)

2015

Paragraph 1

Look at that orange tree. There is a nest on it. A bird lives in the nest. It sings very well every morning.

Paragraph 2

Sam has one white cow. The cow stays in a cowshed. It gives him milk daily. I buy the milk every evening.

- Let the child choose any of the two paragraphs and read
- If the child reads the paragraph, take him/her to the STORY
- If the child cannot read the paragraph, (makes more than 2 mistakes), mark him/her at WORD LEVEL

Story

Mary and Jane are good friends. They go to the same school. There are many children in the school. The children are going on a trip today. They will visit the game park. Their teacher will go with them.

Osman is waiting for them at the park. He works there as a guide. He will take the children round the park. They will see many wild animals. The children will write about the visit. The teacher will mark their books.

1. Where will Mary and Jane go for the trip?
2. Why is Osman waiting for the children?

- Only give the story to children who have correctly read the paragraph
- If the child cannot read the story (makes more than 4 mistakes), mark him/her at PARAGRAPH LEVEL
- If the child reads the story, mark him/her at STORY LEVEL
- The two questions should only be given to a child who is at story level

APPENDIX I B: SPECIAL NEEDS TEACHER’S INTERVIEW SCHEDULE

Miriam Kinyua is a PhD candidate at Kenyatta University and is carrying out a research study on “Reading comprehension intervention strategies as correlates to reading performance in English language among grade four dyslexic learners in Nairobi City and Kiambu counties, Kenya.” Dyslexia is a learning disability related to difficulty in reading. Dyslexia in a child is manifested in difficulties in reading, spelling, and recognition of words and writing of words. As a special needs teacher, your contribution to this research is very significant. The information you will provide will specifically be used only for this study only.

1. a. For how long have you been teaching?
< 2 years 3 -5 years 5-10 years 10-20 years 20-30years

1. b. What is your level of training as a teacher?
.....
.....

2. Do you have learners with Dyslexia or reading impairment in your class?
Yes No

3. What are the reading comprehension levels of leaners in your class?
 - a) Literal level
 - b) Interpretive level
 - c) Critical level
 - d) Creative level

4. What reading comprehension intervention strategies do you use for learners with Dyslexia in your class?
 - a) Material accommodation strategies.
 - b) Strategies involving explicit direct instruction in vocabulary, phonological and phonemic skills.
 - c) Peer-assisted learning strategy
 - d) Repetition strategy
 - e) Stimulating classroom environment strategiesAny other?
.....

5. What is the relationship between use of intervention strategies and English performance among learners with Dyslexia in your class?

.....
.....

6. Is there any relationship between comprehension ability levels and English Performance among grade four learners with Dyslexia in your class?

Yes No

If yes, kindly explain briefly the nature of the relationship.

.....
.....

7. Is there relationship between reading comprehension ability levels and English performance among grade four learners with Dyslexia in your class?

Yes No

If yes, kindly explain briefly the nature of the relationship.

.....
.....

8. Is there is any significant difference in English performance among grade four boys and girls with Dyslexia?

Yes No

If yes, kindly explain briefly.

.....
.....

9. Do you have any recommendations to help improve reading comprehension ability levels of learners with dyslexia in public schools?

.....

Thank you for participating

APPENDIX I C: CLASSROOM OBSERVATION SCHEDULE

Name of Learner _____

Item	Yes	No	Sometimes
Reads slowly and repeatedly.			
Poorly organized, have difficulty remembering times and appointments			
Has difficulty understanding exam or comprehension questions.			
Finds reading and writing more tiring than others			
Difficult planning passage and ideas in the right order			
Has difficulty taking notes, because it is hard to identify the main points			
Untidy handwriting. Especially when under pressure, e.g. a timed test.			
Has to repeat reading before text several times before it makes sense.			
Almost a total lack of recall; poor memory.			

APPENDIX I D: DYSLEXIA SCREENING TEST JUNIOR (DST-J) BRIEF


Below are the subsets of the adapted Dyslexia Screening Test- Junior (DST-J). The researcher will use it to rate the grade four learners in the special units to detect impairments in English reading comprehension

Name of the learner.....

	RISK STATUS			
1. Rapid naming				
2. One minute reading				
3. Verbal fluency				
4. Segmentation				
5. Two-minute spelling				
6. One-minute writing				
7. Vocabulary				

Key: 1 = No Risk, 2 = At Risk, 3 = High Risk, 4 = Very High Risk

APPENDIX II: RESEARCH APPROVAL LETTER


KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kutps@yaho.com P.O. Box 43644, 00100
dean-graduate@ku.ac.ke NAIROBI, KENYA
Website: www.ku.ac.ke Tel. 810901 Ext. 57330

Internal Memo

FROM: Dean, Graduate School DATE: 25th October, 2022

TO: Ms. Kinyua Miriam REF: E83/27366/19
C/o Department of Early Childhood & Special Needs Educ.
KENYATTA UNIVERSITY

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that the Graduate School Board at its meeting 19th October, 2022 approved your Ph.D. Research Proposal entitled "Reading Comprehension Intervention Strategies as Correlates to English Performance among Grade Four Dyslexic Learners in Nairobi City and Kiambu Counties, Kenya".

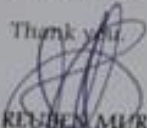
You may now proceed with your Data collection, subject to clearance with the Director General, National Commission for Science, Technology & Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking and Progress Report Forms. The Forms are available at the University's Website under Graduate School webpage downloads.

Also, please ensure that you publish article(s) from your thesis before submitting it to Graduate School for examination as per the Commission for University Education and Kenyatta University guidelines.

By copy of this letter, the Registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D. studies.

Thank you.


KEN BEN MIRIUKI
FOR DEAN, GRADUATE SCHOOL

c.c. Chairman, Department of Early Childhood & Special Needs Education
Registrar (Academic) Att; Mr. Richard Chweya

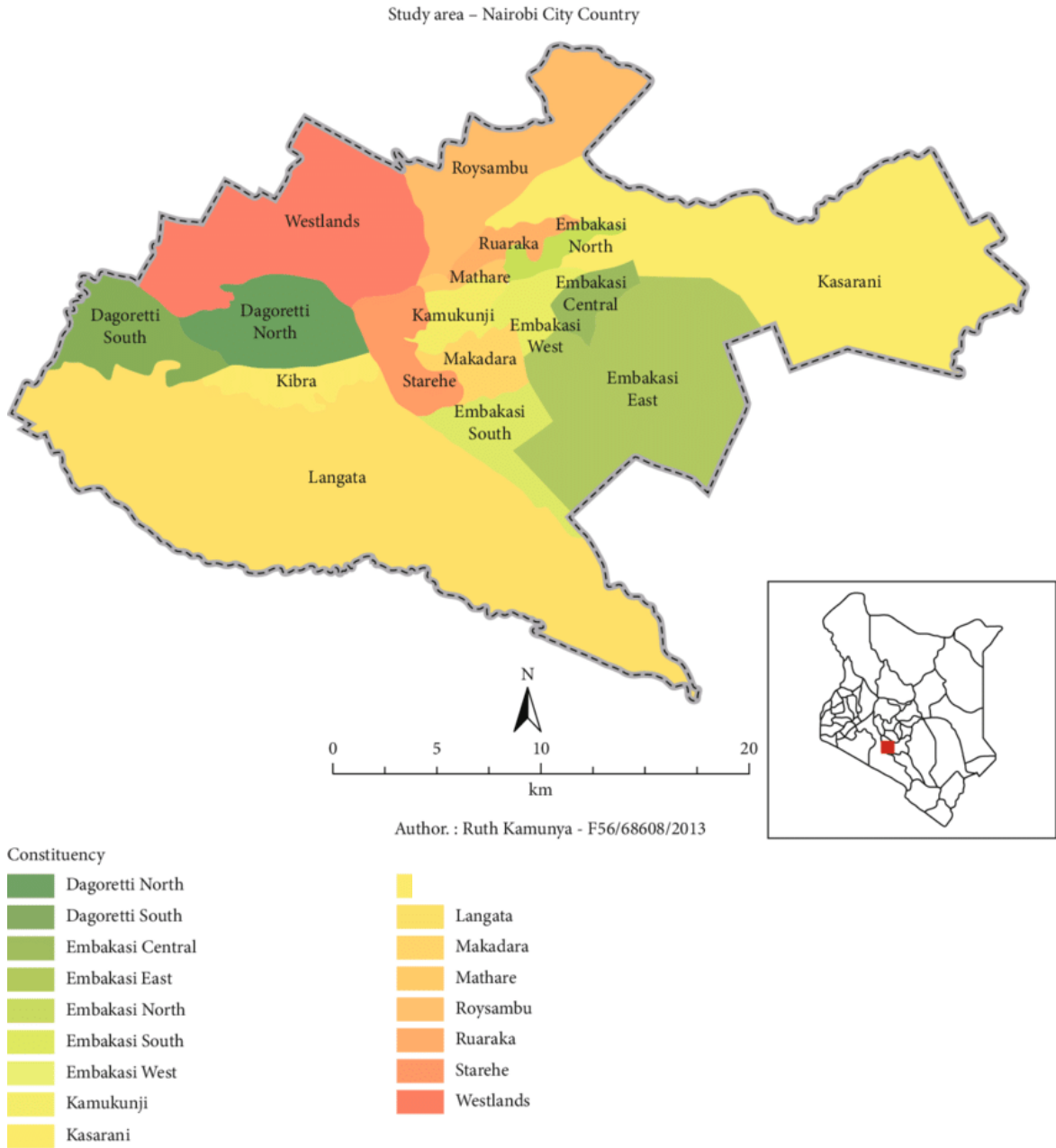
Supervisors:

1. Dr. Jessinah Muthoe
C/o Department of Early Childhood & Spe. Needs Educ.
KENYATTA UNIVERSITY
2. Dr. Mathew Karua
C/o Department of Early Childhood & Spe. Needs Educ.
KENYATTA UNIVERSITY

APPENDIX III-A: MAP OF KIAMBU COUNTY



APPENDIX IV-B: MAP OF NAIROBI CITY COUNTY



APPENDIX V: PARTICIPANTS' CONSENT FORM FOR TEACHERS

Miriam Kinyua is a PhD candidate at Kenyatta University and is carrying out a research study on: "Reading comprehension intervention strategies as correlates to reading performance among grade four learners with dyslexia in Nairobi City and Kiambu counties, Kenya." Please keep in mind that your involvement is entirely voluntary. I will treat your responses with utmost discretion and anonymity. I request you to be as honest as you can. By appending your signature below, that you have given your agreement to take part in this investigation. Thank you.

Sign.....**Date**.....






APPENDIX VI: PARTICIPANTS' CONSENT FORM FOR STUDENTS

Dear Parent,

Miriam Kinyua, a PhD candidate at Kenyatta University and is carrying out a research study on: "Reading comprehension intervention strategies as correlates to reading performance among grade four learners with dyslexia in Nairobi City and Kiambu counties, Kenya." Your child has been selected to participate in this study. Please keep in mind that the involvement is entirely voluntary and the findings of this study are purely for academic purposes. I will treat the responses with utmost discretion and anonymity. By appending your signature below, that you have given your agreement for your child to take part in this investigation. Thank you.

Sign.....**Date**.....

APPENDIX VII: RESEARCH PERMIT FROM NACOSTI

 <p>REPUBLIC OF KENYA</p>	 <p>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION</p>
<p>Ref No: 301455</p>	<p>Date of Issue: 08/November/2022</p>
<p>RESEARCH LICENSE</p>	
	
<p>This is to Certify that Ms. Miriam Gakli Kinyua of Kenyatta University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kiambu, Nairobi on the topic: READING COMPREHENSION INTERVENTION STRATEGIES AS CORRELATES TO ENGLISH PERFORMANCE AMONG GRADE FOUR DYSLEXIC LEARNERS IN NAIROBI CITY AND KIAMBU COUNTIES, KENYA for the period ending : 08/November/2023.</p>	
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<p>Verification QR Code</p>	
	
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