

**TEACHERS' COMPETENCES IN TEACHING LEARNERS WITH LOW VISION IN
INCLUSIVE PRIMARY SCHOOLS IN NYONDO SUB-COUNTY,
MBALE DISTRICT**

BY

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DECLARATION

I, **NADUNGA BEATRICE (SR)**, so certify that this dissertation, "Teachers' Competencies in Teaching Learners with Low Vision in Inclusive Primary Schools in Nyondo Sub-County, Mbale District," is entirely original with no submissions to examinations at any institution.

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APPROVAL

This is to certify that this work, by NADUNGA BEATRICE (SR), titled "*Teachers' Competences in Teaching Learners with Low vision in Inclusive Primary Schools in Nyondo Sub-County, Mbale district*" was conducted under my supervision as a university supervisor.

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DATE:

LIST OF ACRONYMS

AFB:	American Foundation for the Blind
AT:	Teacher from School A
AP:	Pupil from School A
BMAU:	Budget Monitoring & Accounting Unit
BT:	Teacher from School B
BP:	Pupil from School B
CPD:	Continuous Professional Development
ERC:	Education Review Commission
IEPs:	Individualized Education Plans
LwLV:	Learners with Low Vision
LwVI:	Learners with Visual Impairment
MoES:	Ministry of Education and Sports
PDWs:	Persons with Disabilities
PES:	Professional Education Studies
SDG:	Sustainable Development Goal
SHAU:	Spina Bifida Hydrocephalus Association in Uganda
TED:	Teacher Education and Development
UDL:	Universal Design for learning
UNEB:	Uganda National Examinations Board
UNICEF:	United Nations International Child Education Fund
USAID:	United States Agency for International Development
VI:	Visual Impairment
WHO :	World Health Organization

DEDICATION

To my late parents, Mrs. Theresa Yapsiwa Musoga and Mr. Zablon Musoga. If they had lived to see my journey to this point, their passion for education would have been a huge delight.

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ABSTRACT

The Ministry of Education and Sports (MOES) has been working to improve the inclusive teaching skills of its teachers. The competence of instructors in instructing students with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district, is examined in this study. The ability of the teachers to create tailored lesson plans, modify teaching strategies and materials, and evaluate the needs of students with low vision in an inclusive environment was given particular attention. The four objectives of the study were to: investigate the customized lesson plans that teachers create for students with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district; determine the modifications made to instructional materials used when instructing students with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district; investigate how teachers modify their teaching strategies to meet the needs of students with low vision in an inclusive setting while teaching in inclusive primary schools in Nyondo Sub-county, Mbale district; and analyze the modifications implemented by teachers when conducting assessments of learning for students with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district. This study adopted a qualitative research approach and a descriptive design. The study population was teachers and learners with low vision in the inclusive schools and was purposely selected. Twenty (20) participants comprising ten (10) teachers and ten (10) learners with low vision were selected and information was obtained from them through interviews. Findings revealed that teachers were not competent enough to teach learners with low vision. They had gaps in understanding learners' needs, selection, making and using appropriate instructional materials, teaching and assessing methods for learners with low vision. There is need to provide teachers with knowledge and tools needed to develop and implement individualized education plans effectively. Teachers must work together, modify lesson plans, and experiment with different teaching and evaluation strategies to guarantee that students with low vision receive inclusive, high-quality instruction that meets their requirements. It was suggested by the study that in order to meet the needs of students with low vision, head teachers, special education inspectors, and center coordinating tutors should organize and lead workshops and ongoing professional development for adults. School administrators should work with non-governmental organizations and experts to raise money for the purchase of educational materials for students with low vision, sponsorship, health examinations, rehabilitation services, assistive technology, and public education about the various special needs of students. Teachers ought to ensure that they use a multisensory approach of teaching to enable learners with low vision to learn using all their senses.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The atmosphere in inclusive primary schools should offer equal education opportunities to all learners irrespective of their abilities or disabilities. The learning environment should promote recognition, support and active involvement of all learners in learning programs. This vital role can only be fulfilled by teachers as they have a professional responsibility of ensuring that all learners thrive academically and socially. That can only be possible if the teachers have the required competences to teach inclusively. This chapter presents the background to the study, statement of the problem, purpose, objectives, research questions, theoretical framework, scope, significance and definition of terms.

1.1 Background to the Study

This section describes the background of the study. It is divided into the historical, conceptual and contextual background.

1.1.1 Historical background

The purpose of this study was to investigate the abilities of instructors in inclusive primary schools in Nyondo Sub-county, Mbale district, to instruct students with low eyesight. According to Vitello, Greator, and Shaw (2021), competence is the capacity to integrate and use contextually relevant knowledge, skills, and psychosocial elements (such as beliefs, attitudes, values, and motivations) in order to consistently perform successfully within a given area. The knowledge, abilities, attitudes, and values that make a teacher effective in the teaching and learning process are referred to as teacher competencies.

Knowledge refers to pedagogical knowledge and professional knowledge. These types of knowledge enable the teacher to identify learners and their needs and understand their

Professionalism respectively. Skills such as instructional, assessment, organizational, collaboration and teamwork are some of the many skills needed in teaching learners with low vision. The quality of education has deteriorated in many countries in the world due to inefficiencies in teachers' effective facilitation of the learning process (Haizumah, 2019). This is attributed to failure of teachers to expand their knowledge and skills leading to poor learning outcomes (Nawi, 2011). Esmali (2017) adds that lack of continuous professional developments (CPDs) also negatively influences teachers' competences.

To overcome the above obstacles, many governments in consultation with nongovernmental organizations (NGOs) have initiated programs geared towards yielding excellent outcomes by equipping them with necessary skills and knowledge (Yan, 2020). This is achieved through prioritization of developing the human capacity through teacher training, development and management (Ekpoh, Oswald & Victoria, 2013). Other programs like embracing performance based rewards for teachers and advocating for stakeholders' involvement in partnerships are intended to strengthen teachers' competences (Harvey-Beavis, 2003).

In Uganda, teachers' competences are a product of teacher training, development and management under the department of Teacher Education and Development (TED) that coordinates all the activities of teacher education. Teacher competences are a key to learner's success as they influence their behaviors, aims, values, practices and communication (MoES, 2010) and to teach in an inclusive setting.

In many formal schooling systems, the idea of inclusive education has gained international attention (Kozleski & Iris, 2021). The Salamanca Statement on Special Needs Education (UNESCO, 1994) and the Education for All (UNESCO, 1990) recommendations, as well as the Convention on the Rights of Persons with Disabilities (CRPD) and the Convention on the

The creation of inclusive education policies has been improved globally by the Rights of the Child (Dan, Amy, & Venetis, 2020).

Future Learn (2022) views inclusive education as a learning model where all learners regardless of their ability learn together in one environment. UNICEF (2017) considers inclusive education as an education system that includes all learners, welcomes and supports them to learn whoever they are and whatever their abilities. Inclusive education is viewed as the cornerstone of education reform asserting that it should not just be about learners with disabilities but also increasing access, participation and outcomes for all learners who are marginalized (Artiles & Kozleski, 2016).

Blindness is defined by the American Academy of Ophthalmology (2021) as a medical condition in which vision is lost or significantly reduced. Following correction, students with blindness had acuity of 20/70 or less in their better eye (Carney, Engrebretson, Sheppard, & Cammell, 2014). Low vision, according to Abdul Aziz & Kulkarni (2020), is defined as a severe visual impairment that cannot be entirely remedied by conventional eyeglasses, contact lenses, medicine, or surgery.

Due to their limited ability to see and engage with objects, learners with low vision have less opportunities for natural teaching (Carney et al., 2014). This suggests that in order to modify the curriculum to accommodate students with impaired vision, teachers must first identify these students.

In an inclusive classroom, students with limited vision are one of the large groups of kids that require special care. According to WHO (2021), at least 2.2 billion people worldwide suffer from blindness and low vision, with 1.3 billion of them being visually impaired. However, 80% of these individuals can receive treatment (Marta et al., 2021). According to Oyebanyi and Idiong (2021), there are around 1.9 million blind children in the world. An estimated one child globally becomes blind every minute, for a total of 500,000 blind children annually. Three times as many children have low vision as blind children (Gissara, n.d.).

In terms of education, 70.2% of learners with visual impairment are enrolled in primary schools, however, only 48% of those who enroll complete school in Sub-Saharan Africa (Oyebanyi et al., 2021; Wodon, Male, Mayihauba & Smith, 2019). About 1,190 children with low vision are enrolled in primary schools (UBOS, 2019). However, about 9.2% of learners with low vision proceed to secondary education (Fanu, 2019).

1.1.2 Conceptual background

As much as primary school teachers know about learning difficulties, it is insufficient for real-world classroom implementation (Basim, Fysal, Akhila & Aswathy, 2019). According to Mfon and Nkanga (2020), low competency is linked to teachers' insufficient exposure to special needs education throughout their initial teacher education program. According to UNICEF (2017), this affects their capacity to recognize students who may have learning difficulties.

In an inclusive classroom, the general curriculum should be modified to accommodate the needs of students with low vision because they are unique individuals with particular needs (Parween & Dheesha, 2021). The process of modifying the general curriculum to bridge the achievement gap between sighted and low-vision students is known as curriculum adaptation.

According to Rajrush (2014), students with limited vision exhibit a notable disparity in their academic performance, behavioral issues, low self-esteem, poor social interactions, subpar grades, and early dropout rate. This implies that educators ought to adjust and adapt their instruction to circumstances that cater to the requirements of students with low eyesight. Teachers who are not educated in special needs education have particular difficulties because of this.

Kyambogo University and MoES (2012) reviewed the Primary Teacher Education curriculum with the inclusion of a special needs component in the Professional Education Studies (PES) curriculum. Accordingly, tutors are recruited to teach special needs education component to student teachers aimed at equipping them with the competences necessary in teaching learners with different learning disabilities.

For quality education to be achieved in inclusive schools, teachers should reflect on their teaching competences and requirements with focus on learners' disabilities (Eron & Okot, 2019). Despite efforts by the MoES and Kyambogo University, challenges such as insufficient funding, inadequate infrastructure and limited access to technology and resources continue to limit the effectiveness of teacher competences in Uganda. This study therefore was intended to find out the competences possessed by teachers in teaching learners with low vision in inclusive primary schools in Nyondo sub-county, Mbale district.

1.1.3 Contextual background

Learners with low vision struggle with their life in accessing education in inclusive settings as they normally have challenges with communication. According to WHO (2021), learners with low vision experience unique challenges in accessing quality education in all levels of education. Globally, out of the 280 million people affected with visual impairments, 246 million have low vision and 39 million blindness including learners with visual impairment. Investigations conducted revealed that 70.2% of the learners with visual impairment are enrolled in primary schools, however, only 48% of those who enroll complete school in Sub-Saharan Africa (Oyebanyi et al., 2021; Wodon, Male, Mayihauba & Smith, 2019). This implies that efforts to spearhead the education of learners with low vision are needed from all stakeholders in African countries so that an enabling environment is provided to nurture them. According to UNICEF, about 90% percent of children having disabilities from developing countries have never received education (UNICEF, 2014). This could be associated with limited resources, inadequate infrastructure and absence of special services.

Results from the field indicated that about 1,190 children with low vision are enrolled in Ugandan primary schools (UBOS, 2019). This implies that teachers should be competent enough to teach

learners with low vision. However, about 9.2% of learners with low vision proceed to secondary education (Fanu, 2019). This finding indicated that the majority of the learners with low vision would not complete their studies probably due to lack of competent teachers. This could probably stem from the existence of gaps and barriers to implementation of inclusive education policies despite the government's commitment in embracing education for all.

In the early 1950's, learners with visual impairment including those with low vision begun receiving special education from the established special school of the blind (Lynch, Mccalls, Douglas, Monesa&Mwaura, 2011). This was later supplemented with residential units of children with visual impairments attached to some main schools across Uganda (Bayo, Lynch, Mccall & Douglas, 2014). This meant that some schools did not have those units and therefore learners with different disabilities were not helped to access education. After the constitution of the Education Review Commission (ERC) in 1988 by government headed by Professor Kajubi, which resulted into the production of "The Government White Paper", it was recommended that government provides inclusive education which accommodates 'normal' children and those with special needs (Government of Uganda, 1992).

Learners with low vision should access the general education curriculum with increased opportunities of participation in inclusive settings (Smith & Tyler, 2011). This can be achieved through differentiated instruction as an approach to learning where lessons are taught in the entire class with the objective of meeting all learners' individual needs. Instruction gives educators opportunities to change the lives of struggling learners to become successful (Laura, 2018; Robinson & Jerita, 2014). Pre-assessment as a tool to provide a baseline for learners' needs (Ernest, Carter & Rainer, 2011). Teachers should have a self-assessment to reflect on their actions in the classroom as they try to meet the diverse needs of different learners with disabilities (LWDs). For pupils with low vision to learn better, teachers should use other supporting tools in orientation, movement, tactile, kinesthetic and auditory learning and accommodation (Ediyanto & Kalwai, 2019). This investigation tried to explore the competences possessed by teachers as they support their learners through carrying out the required adaptations and modifications to curriculum.

1.2 Statement of the Problem

The Ugandan government promotes inclusive education by enacting laws that encourage education for all, with a particular emphasis on including those with disabilities. This is in line with SDG 4, the fourth Sustainable Development Goal, which aims to guarantee inclusive, equitable, high-quality education for all students, including those with special needs. In order to achieve this goal,

teachers must recognize and meet the various learning requirements of their students, including those who are visually impaired, and use effective teaching strategies (Carney et al., 2003).

Despite the increasing emphasis on inclusive education, many teachers in inclusive schools lack the necessary competences to effectively teach learners with low vision resulting inadequate support, limited academic progress and social exclusion for these learners hindering their access to quality education and opportunity for academic and social development. This lack of support negatively impacts on their academic achievement and cognitive development. Moreover, the Uganda National Examinations Board (UNEB, 2021) raised concerns about teachers' competences in implementing pedagogical skills that specifically support learners with low vision, as evidenced by unsatisfactory academic performance in inclusive classrooms.

This study, therefore, seeks to explore the competences of teachers in teaching learners with low vision in inclusive primary schools in Nyondo Sub-County, Mbale District

1.3 Theoretical Framework for the Study

This study was guided by Medley's theory of 1977 on Teacher Competences in guiding the investigation. Medley's theory guided the study, particularly in understanding teacher competences in supporting learners with low vision in inclusive settings. The sections that follow will describe the origin of Medley's theory, its relevance, and weaknesses and how the researcher applied it in this study.

1.3.1 Origin of Medley's theory

Medley's theory was developed by an educational psychologist called Robert Medley. It was developed in 1977. It is based on his research on teacher effectiveness and classroom observations. It claims that knowledge, abilities, and attitudes are the three components that make up teacher competency (Medley, 1977). The teacher's comprehension of the material and capacity to use it in the classroom are referred to as knowledge. The capacity of a teacher to apply instructional tactics that are suitable for the students and to efficiently manage the classroom environment is referred to as skills. By creating a welcoming, encouraging, and cooperative classroom atmosphere, this can be accomplished (Borich, 2020). The term "attitudes" describes a teacher's devotion to the profession and their views on education.

The theory suggests that all three components must be present in order for a teacher to be considered competent. Medley stresses that a competent teacher should have the following five competences:

pre-instruction, presentation, learning environment, child learning and professionalism. These competences are all engulfed in the skills, knowledge and values. To Medley, pre-instruction encompasses the teachers' desire to prepare for instruction which provides guidance for teaching, learning and achievement of planned tasks (Yan, 2020). He adds that the presentation addresses effective teaching and learning plans and development of learning opportunities for all learners. Additionally, the learning environment should be stimulating, safe and supportive where learners are able to learn and develop. Medley also notes that teachers should interact with learners in order to produce learning outcomes which influence their learning. Finally, he stressed that teachers should have their professional behavior and involvement beyond the classroom. This study examined the different knowledge, skills and values that are exhibited by primary teachers in teaching learners with low vision in inclusive settings (Bha & Yan, 2020). Focus was on the interactions between teachers, parents, administrators, NGOs, governments and learners with low vision as they promote inclusive education.

1.3.2 Aspects of the theory

Medley noted that the teacher's knowledge is determined by his or her understanding of the subject matter and application in the classroom. He added that skills are needed for effective classroom management and instruction. These skills include using appropriate instructional strategies, creation of a positive learning environment and communicating effectively with learners (Medley, 1977). Lastly, the theory acknowledges that attitudes are important for teacher competence. This includes the teacher's beliefs about teaching and learning as well as their commitment to the profession (Medley, 1977).

1.3.3 Assumptions of the theory

It was assumed that teachers' competences are a combination of knowledge, skills and attitudes. For teachers to be competent, they should have knowledge, skills and values. It was also assumed that teacher competence is necessary for effective instruction and classroom management hence can be developed through CPDs and experience and is essential for learners' success.

1.3.4 Criticisms of the theory

Despite its usefulness, the theory has been criticized for not taking into account the importance of other factors such as learner motivation, classroom environment and school culture, lack of a clear definition of what constitutes "competence" and a way to measure it. Finally, it does not address the issue of teacher burnout or the need for teachers to have adequate support and resources in order

to be successful.

1.3.5 Application of the Theory

This theory can be used to inform teacher preparation programs by focusing on the development of knowledge, skills and attitudes, informing professional development programs where teachers are helped to develop and refine their knowledge, skills and attitudes. This theory can also be relevant in evaluating teacher performance and provision of feedback to improve performance. Specifically, this study seeks to establish how stakeholders are supporting teachers through identification of training needs intended to improve their skills, knowledge and values on teaching learners with low vision.

1.3.6 Classroom implications of the theory

In order to guarantee effective classroom management, educators should advance their knowledge, abilities, and moral principles. They should establish a supportive learning atmosphere and use teaching techniques that are suitable for the various learners. Lastly, educators should be dedicated to their work and work to advance their attitudes, abilities, and knowledge on a constant basis. This might be encouraged by upgrading to gain more competencies that will allow them to enhance the learning outcomes of their instruction.

This study intended to examine the extent to which the theory is being used by teachers to improve their instructional and management practices. Focus was on the extent to which teachers are adapting individualized education plans, instructional materials, teaching and assessing methods to suit learners with low vision.

1.4 Purpose of the Study

The purpose of this study was to explore, examine, and analyse teachers' competences in teaching learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district.

1.5 Objectives of the Study

This study was guided by the following research objectives: -

1. To explore the individualized educational plans prepared by teachers for learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district.
2. To identify the adaptations made to instructional materials that are used when teaching learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district.

3. To examine how teachers adapt methods that they use to cater for the needs of learners with low vision in an inclusive setting during teaching in inclusive primary schools in Nyondo Sub-county, Mbale district.
4. To analyse the adaptations that are put in place by teachers when carrying out assessment of learning for learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district.

1.6 Research Questions

The study was guided by the following research questions: -

1. Which individualized educational plans are prepared by teachers for learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district?
2. What adaptations are made to instructional materials that are used when teaching learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district?
3. To what extent do teachers adapt methods that they use to cater for the needs of learners with low vision in an inclusive setting during teaching in inclusive primary schools in Nyondo Sub-county, Mbale district?
4. What adaptations are put in place by teachers when carrying out assessment of learning for learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district?

1.7 Scope of the Study

In this section, the description of the content, geographical and time scope is given.

1.7.1 Content Scope

The study was restricted to finding out teachers' competences to teach learners with low vision in inclusive settings. Specific focus was on the teachers' ability to develop individualized education plans, adapt instructional materials, teaching and assessing methods to suit the needs of learners with low vision in an inclusive setting.

1.7.2 Geographical Scope

The study was carried out in two (02) inclusive primary schools in Nyondo Sub-County, Mbale district.

1.7.3 Time Scope

The study intended to find out teachers' competences in teaching learners with low vision in inclusive settings in the period between 2018 to 2023.

1.7.4 Significance of the Study

The findings of this study may be useful as they contribute to the following: -

- i. Making a difference by shedding light on the causes of vision loss, offering therapies and treatments to enhance vision, and developing assistive technology to enable people with poor vision to lead more independent lives.
- ii. Educating the public on policy decisions pertaining to low-vision learners' rights to education and accessibility.
- iii. The study might be useful in pinpointing the particular requirements of students with low vision and creating plans to meet those needs in the classroom. Identifying strategies for creating an inclusive classroom environment that is welcoming and supportive of all learners.
- iv. Giving teachers in the classroom knowledge about the special requirements of students with low vision and methods for modifying lessons and resources to suit those needs.
- v. Gaining a deeper comprehension of the issues low vision students encounter and the best ways to assist them in the classroom.
- vi. Educating students with low vision on how to make the most of their residual eyesight. Helping researchers to better understand the challenges faced by learners with low vision and how to design research studies that are more accessible and inclusive.
- vii. It may help researchers to understand the needs of learners with low vision better and create more accessible research materials and methods.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter examines related literature in line with teacher's competences in teaching learners with low vision in an inclusive setting. This study was guided by the following research objectives: to explore the individualized educational plans prepared by teachers for learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district.; to explain the adaptations made to instructional materials that are used when teaching learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district.; to examine how teachers' adapt methods that they use to cater for the needs of learners with low vision in an inclusive setting during teaching in inclusive primary schools in Nyondo Sub-county, Mbale district.; to analyse the adaptation that are put in place when carrying out assessment of learning for learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district.

It is structured as follows; Section one is an overview of the state of learners with low vision, globally, in Africa and in Uganda. Section two examines literature on teachers' ability in developing individualized educational plans to meet the learning needs of learners with low vision in an inclusive setting. Section three examines literature relating to the teachers' ability to adapt instructional materials to meet the needs of learners with low vision in an inclusive setting. Section four analyzes how teachers adapt methods of teaching to suit learners with low vision in an inclusive setting. Section five explores literature relating to the teachers' ability to assess the academic progress of learners with low vision in an inclusive setting. Lastly, section six provides the summary of the related literature reviewed.

2.1 An Overview of the State of Learners with Low Vision

Low vision learners typically suffer with communication, which makes it difficult for them to receive education in inclusive settings. Students with limited eyesight face particular difficulties in obtaining high-quality education at all educational levels, according to WHO (2021). Twenty-six million of the 280 million persons with visual impairments worldwide have low vision, and 39 million are blind, including students with visual impairments. Research showed that although 70.2% of students with visual impairments attend primary schools, only 48% of them finish their education in Sub-Saharan Africa (Oyebanyi et al., 2021; Wodon, Male, Mayihauba & Smith, 2019).

This suggests that all parties involved in African countries must work to lead the education of students with low vision in order to create an atmosphere that will support and develop them.

Roughly 90% of disabled children in underdeveloped nations have never attended school, according to UNICEF (UNICEF, 2014). This can be related to a lack of specialized services, insufficient infrastructure, and scarce resources.

Approximately 1,190 children with limited eyesight are enrolled in Ugandan primary schools, according to field results (UBOS, 2019). This suggests that educators ought to possess the necessary skills to instruct students with limited eyesight. However, according to Fanu (2019), 9.2% of students with low vision continue on to secondary school. This result showed that most students with limited eyesight would finish their education, most likely as a result of a shortage of qualified instructors. Despite the government's commitment to promoting education for all, there may still be gaps and obstacles to the implementation of inclusive education laws.

The special school of the blind was founded in the early 1950s to provide special instruction to students with visual impairments, including those with limited vision (Lynch, Mccalls, Douglas, Monesa & Mwaura, 2011). Residential apartments for visually impaired students were eventually added to this, and these were connected to certain main schools throughout Uganda (Bayo, Lynch, Mccall & Douglas, 2014). This implied that certain schools lacked those units, which prevented students with special needs from receiving an education.

Following the government's establishment of the Education Review Commission (ERC) in 1988 under the leadership of Professor Kajubi, which produced "The Government White Paper," it was suggested that the government offer inclusive education that takes into account both "normal" children and those with special needs (Government of Uganda, 1992).

There should be more possibilities for students with impaired vision to participate in inclusive settings and access the general education curriculum (Smith & Tyler, 2011). This can be accomplished by using differentiated instruction, a method of teaching in which all students receive lessons in the same class with the aim of attending to their particular requirements. Robinson and Jerita (2014) and Laura (2018) explained that this instruction provides teachers with the chance to transform the lives of struggling students so they can succeed. Ernest, Carter, and Rainer support pre-assessment as a means of establishing a baseline for the needs of students (Carter & Rainer, 2011).

Teachers should evaluate themselves so they may think back on how they are meeting the various requirements of different learners with disabilities (LWDs) in the classroom. According to Ediyanto and Kalwai (2019), educators should employ additional aids in orientation, movement, tactile, kinesthetic, and auditory learning and accommodations to help students with impaired vision learn more effectively. Through the implementation of necessary curriculum changes and revisions, this study attempted to investigate the competencies that teachers possess in order to support their

students.

2.2 Individualized Educational Plans for Learners with Low Vision

Individualized Educational Plans (IEPs) are documents developed for learners with disabilities to outline their specific educational goals and accommodations (Friend & Bursuck, 2020). The development and implementation of Individualized Educational plans (IEPs) demand a comprehensive understanding of the needs and appropriate instructional strategies that suit learners with low vision. This requires joint efforts from teachers, administrators and parents so that mechanisms are instituted to address their needs. The use of a collaborative approach in planning for an inclusive classroom (Tunney & Hanreddy, 2021). They stress that in order to ensure that IEPs address all aspects of learners' educational needs, it demands a multidisciplinary team comprising teachers of learners with low vision, general educators, related service providers and parents. The importance of conducting comprehensive evaluation so as to understand learners' visual functioning, learning preferences and individual strengths and weaknesses (Wormsley, 2014). This is vital as it gives room for designing specific goals and objectives to be documented in IEPs.

Children with learning difficulties struggle to give it their all, lack self-motivation, and have short attention spans (Alahmadi & Keshky, 2019). Teachers, family members, and important others must so provide students with special attention and assistance. Only by correctly identifying children as having learning challenges can this be accomplished (Alahmadi & Keshky, 2019). Little has been done to explore the instructional needs of the greatest population of students with low vision (Kirchner, 2011). This calls for efforts by different stakeholders in identifying strategies geared towards addressing the needs of learners with visual impairment including those with low vision (Lueck, 2004; D'Andrea, & Farrenkopf, 2000).

Some teachers are not competent enough in identifying learners with suspected cases of learning disabilities (Mfon & Nkanga, 2020). This gap makes it difficult to group or monitor such learners and ultimately difficult to identify their learning needs. This could be associated with lack of the basic knowledge and skills that are necessary in teaching learners with low vision probably due to inadequate training. Despite primary school teachers' possession of knowledge on learners' disabilities, it is insufficient to support practical applications in the classroom (Wormsley, 2014). This insufficiency could be linked to the lack of continuous professional development courses which could be prioritized by the school administrators.

The ability of instructors to apply the pedagogical skills they have learned to serve students with visual impairments in an inclusive context was questioned by UNEB (2021). The disappointing

outcomes for students with low vision led to this. In order to assist teachers in recognizing students with low vision and their educational requirements, refresher courses must be designed. Teachers and students with limited vision might be seen as a microsystem of individuals (Duplesis, 2020). This microsystem offers chances of interaction through proximal processes. These processes provide avenues where learners with low vision are supported at physical, emotional, social, cognitive and vocational levels (Maximus & Ronel, 2000).

In accordance with UNICEF (2017) teachers should develop a profile of the learners' visual skills using functional vision assessment. This is important as it helps in developing learners' programs and augmenting. Examples of methods of assessment include; file review, learner observation, parents and teacher interview and play based assessment. It is encouraged that functional vision checks are conducted whenever learners move from one class to another (UNICEF, 2017).

Many people think that students with impairments are incapable of learning, and they reinforce this belief by passing discriminatory laws that prevent students with impaired eyesight from attending school (UNICEF, 2013). Thus, it is imperative that educators and school officials establish conducive learning environments for students with impaired vision. They would be able to determine their special education needs as a result. The American Foundation for the Blind (2020) notes that learners' unique needs like adaptive technology, visual access, and specialized instruction in IEP should be addressed. This can be achieved through continued assessment, data collection and monitoring their progress so as to make appropriate and timely decisions.

2.3 Adapting Instructional Materials for Learners with Low Vision

The process of modifying educational materials to accommodate students with low vision is complex and requires taking into account readability, visual accessibility, and other sensory modalities. To improve accessibility and meet the unique needs of each student with a visual impairment or low vision, efforts should be made to modify the content, format, and presentation of instructional materials to better suit these learners (Council for Exceptional Children, 2022). This is aimed at creating an inclusive learning environment where learners with low vision access quality education like other children in an inclusive setting.

Teachers of learners with low vision to ensure that there is proper organization and structure of the content that is presented in class for teaching and learning (Pogrud & Herzberg, 2016). Teachers should be equipped with techniques which help learners to easily locate and navigate data. Examples of these techniques include having clear headings and subheadings which guide learners, use of bullet points to give direct communications and other styles like bolding or italicizing so that learners will

focus on them for immediate attention. In order to promote good comprehension among learners, there is a need for teachers to give instructions and directives to learners with low vision in addition to breaking down complex concepts into smaller components which are manageable. This study examined the abilities possessed by different teachers of learners with low vision in inclusive settings by checking the nature of work given to learners on the chalkboard and their notebooks.

Perkins School for the Blind (2023) provided additional insight on the importance of teachers taking into account the format and size of the text they provide to students with impaired vision. It is important to make sure that the written materials are expanded to meet the needs of students who have impaired eyesight. An attempt should be made to enhance the font size and line spacing in order to make the work more readable for students who have visual impairments. For example, the teachers can select clear san-serif font which can be read with clarity. This can be supplemented with materials in electronic form which can allow learners to adjust the text size to their preference.

Teachers should collaborate to offer poor vision students the help they need to participate authentically and with value (Grigorenko et al., 2020). Multi-model materials are recommended for use in teaching low-vision students because they offer information in several formats that are appropriate for the various types of visual impairments. Electronic formats, braille, large print, and audio encourage students to actively participate in the class according to their abilities and choices. This calls for teachers' ability in learning to create and share these resources. It is therefore necessary that teachers are supported in an inclusive setting. Positive attitudes towards inclusion are among the most important factors for creating an inclusive setting (Krischler et al., 2019), since most teachers have either positive or negative attitudes towards inclusive education (Jury, Perrin, Rohmer & Desombre, 2021). This can be promoted through exposure of teachers to more experiences and training as it has proved to yield positive attitudes towards inclusive education. This study tried to examine the different ways in which teachers of learners with low vision are making and using the different formats of instructional materials for teaching through conducting classroom observations to ascertain their effectiveness.

Teachers need to know that two learners with low vision do not have the same functional vision whether they have the same condition or similar acuity (Mufarriq & Muhammed, 2011). This is brought about with fluctuations in their vision due to fatigue, light glare, lighting conditions and time of the day. It is therefore important that the teacher understands the behavior of different learners (vision) under specific conditions so as to offer appropriate support. For example, the use of tactile graphics like embossed images, diagrams, raised textures help learners in exploring and

understanding visual information using the sense of touch (CAST, 2023). Teachers can create lesson plans that are adapted to accommodate students with low vision in inclusive primary schools. By employing environmental resources, such as banana fibers, scientists can allow students to feel the texture of species, such as the scales on fish. Additionally, teachers can use software that converts text to speech and audio descriptions. This will make information accessible to students with low eyesight. This study looked into the types of tactile and auditory adjustments used by instructors of students with impaired vision in a few Mbale district inclusive primary schools. The requirements of students with low vision can be met through inclusive education, which makes use of resources found in the regular classroom (Eron et al., 2019). Equality, access, and opportunity for students' education are the main goals of inclusive education. A tailored curriculum, accessible schools, supporting parents and schools, accommodating teachers, appropriate teaching resources, and suitable assistive technology are all necessary to accomplish inclusive education and lower the dropout rate (Eron et al., 2019). This is done to embrace the 4th Sustainable Development Goal (SDG) which aims at ensuring inclusive and equitable quality education and promotion of lifelong learning opportunities for all (Eron et al., 2019). The use of assistive technology can greatly promote the accessibility of learning opportunities to learners with low vision (Hu,Wu & Wen, 2010). The use of technological advancements as in the use of screen readers, Optical Character Recognition (OCR) tools, and magnification software is important as it helps learners to access instructional materials for learning purposes. The study investigated the nature and type of assistive technology employed by teachers teaching learners with low vision in an inclusive setting. It also ascertained the teachers' ability and knowledge on using assistive technologies used in teaching learners with low vision.

UNICEF (2017) emphasizes that teachers should work as a team with school personnel, learners, parents and community. Collaboration with specialists like Special Needs Education (SNE) teachers or eye and technology experts can help in providing useful guidance on adapting instructional materials to suit learners with low vision. Specifically, they offer guidance on creating accessible materials with specific modifications to match with learners' disabilities (Huang, Chiu & Hwang, 2015). Collaboration is vital in establishing good communication with learners, parents and the community which fosters learners' social and emotional communication as well as education development. Nonetheless, this can only be instituted in an environment where teachers have a positive attitude towards learners with low vision. This is so because the planning for the teaching and learning process revolves around the teachers. This suggests that decisions and actions regarding material production and changes to fulfill the needs of students with low vision are significantly influenced by the attitude of the teacher implementing inclusive education programs

in inclusive primary schools. In order for these resources to be used in the teaching and learning process, this study investigated the degree to which educators can work together with parents, school administrators, and other special needs educators. Perkins School for the Blind (2023) stresses to teachers the value of prioritizing contrast considerations while preparing instructional materials for teaching learners with low vision. In their publication, they advocate for maximization of contrast between texts and background. In order for learners with low vision to see properly, teachers should use dark ink on light backgrounds. For example, black texts on white paper gives clear visibility. Teachers should avoid mixing colors as they may cause difficulties for example low contrast or conflicting color schemes. This can be related to the choice of manila cards or news prints and the color of markers used for writing on them. This study explored the nature of charts drawn by teachers to teach learners with low vision with focus to color contrast.

2.4 Adaptation of Methods of Teaching Learners with Low Vision

The process of changing instructional tactics, resources, and activities to accommodate students' various learning requirements and styles is known as adaptation of a teaching approach (Moore, 2012). The study aimed to gather feedback from educators on how to modify instructional strategies to provide all students in inclusive elementary schools with equal learning and success possibilities, with a particular emphasis on students with impaired vision. In order to meet the requirements of their students, effective teachers modify their teaching strategies (Lee & Picanco, 2013). They recognize that pupils learn in different ways meaning that their instructional strategies should accommodate those differences. In this research context, focus was on the competences of teachers in modifying their methods of teaching to suit the needs of learners with low vision in inclusive primary schools. Even if teacher training institutions have implemented inclusive education to give aspiring teachers the pedagogical skills they need to instruct students with impairments, special educators' services must be accommodated (Maxwell & Opaku, 2021). In the context of the Ugandan education system, special educators can be the Special Needs Education (SNE) tutors who are trained to teach teacher trainees to handle learners with disabilities by teaching and counseling them. In the Primary Teacher Education curriculum, Special Needs component was introduced to teach and handle other issues related to Special Needs Education. This would then enable teachers to address their challenges while in and out of the classroom (MOES, 2010). Through the Universal Primary schooling (UPE) initiative, all students now have the opportunity to receive free, mandatory schooling. Accordingly, educators ought to be given the authority to instruct students with a variety of disabilities. This can be accomplished through Continuous Professional Development (CPD), where they receive assistance in modifying teaching strategies to accommodate students with low vision.

Since curriculum developers and reviewers base on the demands of the community to institute the curriculum for different learners with focus on current developments in science and technology, it is relevant that enough research is conducted to find out the underlying issues affecting the education of learners with disabilities. This will act as a base for selecting the curriculum that is relevant. Teachers in the class need to modify the curriculum that is designed by National Curriculum Development Centre (NCDC) so that it can meet the needs of all learners including learners with low vision. Curriculum adaptation requires teachers to make the curriculum work for learners, shape the environment to support learning and use a diversity of strategies to match with the different needs and interests of learners (Tomlin, 2014). This is because learners have different backgrounds which require the teacher to adapt the instructional strategies that embrace all learners in the classroom (Ellen & Langer, 2000).

Teachers should use multisensory approaches in teaching like providing learning activities that help learners with low vision to actively participate in the lesson. An example is the combination of auditory materials with tactile materials and sometimes the use of hands on activities. This is good as it gives learners opportunities to interact with learning activities based on their abilities and interests.

In connection with the aforementioned, curriculum customization is viewed by the American Foundation for the Blind (2020) as a means of reducing the disparity between sighted and visually impaired students (Parween & Dheeshe, 2021). It entails modifying the general curriculum to overcome the disparity in learning experiences between sighted and low-vision students. The report goes on to say that inclusive education necessitates a customized strategy that puts each student's needs first. In order to make sure that the best practices are applied to help students with poor vision, teachers must work in tandem with students who have low vision, their parents or guardians, and other pertinent professionals, such as eye specialists. Through the creation of Individualized Educational Plans for students with low vision, this study examined how educators work with other stakeholders to provide pertinent curricular changes. Learners with low vision require increased contrast, color activation and art/craft by using principles of adaptation like duplication, modification, substitution and omission (Arya, 2014). Specifically, efforts should be made by teachers to ensure that they utilize large font size, clear and high contrast visual aids, graphs, charts and diagrams while teaching aimed at enhancing learners' visibility. It is also important for teachers to position visual aids in positions where all learners can view. Finally, teachers need to know that the use of tactile materials like raised lines, diagrams or objects give multi-sensory learning experiences which brings learners with low vision at the same level with others (Marsha, Lovett,

Michele, Marie & Ambrose, 2023). It is through these principles that learners with low vision are able to access the regular educational curriculum. This study explored the extent to which teachers were using instructional strategies to suit all learners including those with low vision.

Given the state of science and technology today, educators must be knowledgeable about information and communication technologies that might help students with low vision find the learning experience engaging and meaningful. According to Ambrose et al. (2023), educators must utilize technology to help students with impaired vision benefit from the teaching and learning process. These technologies include the use of screen magnifiers where the content on the screen can be enlarged so that learners with low vision can ably see and participate accordingly in the lesson. Other software like screen readers and text to speech applications are relevant in helping learners with low vision to access digital content.

Teachers in Ugandan elementary schools can use laptops with wide screens and overhead projectors to adapt digital content to the needs of students with limited vision. This study sought to understand how educators use technology to help students with impaired vision during the teaching and learning process. In the same reference, it is still put that learners with low vision who are proficient in braille can be supported with electronic braille devices or refreshable braille displays which help them to read and write. When all learners in inclusive classes are empowered with the skills needed through the teachers' modeling of desired attributes, this knowledge and skills are transferred from one generation to the other through the lateral transfer of learning.

In addition to the above, Moore (2012) encourages teachers to always plan for auditory instruction which enables learners with low vision to learn using other sense organs other than the eye. More emphasis is put on teachers' need to complement visual content with oral descriptions and explanations. There are no computers in most primary schools in Uganda, but some teachers have smart phones which can be used to make audio recordings which can be presented to learners in the classroom. This helps them to compare the different types of resources given with the sounds provided. Additionally, other forms of audio instruction could take the form of reading aloud from textbooks and other written materials and provision of clear verbal instructions which help learners to follow the lessons under the teachers' instructions.

Under the Ugandan educational system, primary school teachers can use computers with huge screens and overhead projectors to adapt digital content to the needs of students with limited vision. The goal of the study was to determine how educators can use technology to help students with impaired vision during the teaching and learning process. Over time, this helps individuals build a

positive self-concept that allows them to control their own learning both inside and outside of the classroom. The purpose of this study was to determine the degree to which educators in inclusive primary schools are adapting the physical and environmental surroundings to accommodate the needs of students with low vision.

2.5 Adaptation of assessment for Learners with low vision

Modifying and adjusting assessment materials, practices and formats aims at ensuring that learners are able to display their knowledge and skills effectively. Carol (2017) defines adaptation of assessment as the modifications and adjustments made to assessment practices, materials and format aimed at accommodating the specific needs of learners with low vision. Adaptations consist of both accommodations and modifications (McGlynn & Kelly 2019). This in the long run gives avenues where all learners with low vision receive inclusive and coherence experiences that contribute to their holistic development. It is therefore important that teachers plan for assessment adaptations with accommodations and modifications to enable learners with low vision respond to given tasks like their friends without disabilities. To them accommodation is a convenient arrangement for imparting knowledge to learners. Furthermore, modification to them is the change or alteration in ways of imparting knowledge to support and ease the accessibility of information to all learners. Teachers should prioritize for their learners to have equal opportunities to access assessment materials and succeed in given courses (Swallow, 1976).

Teachers should enlarge printed materials like tests, worksheets and reading texts for learners with low vision (Carol, 2017). This enables them to see the text item clearly so that they can respond to them appropriately. It is further stressed in the same reference that materials for assessment can be modified using high contrast colors, use of larger print and clear formatting. This is aimed at ensuring that all learners access assessment items without challenges. This study tried to explore teachers' abilities in providing enlarged and modified assessment materials used in assessing learners in inclusive settings.

Teachers can use tactile and multisensory resources while assessing learners with low vision (Dheesha & Parween, 2021). Tactile materials help learners to understand and interpret visual information. In the context of inclusive primary schools in Uganda, teachers should use materials which allow learners with low vision to use different senses in demonstrating their understanding. Another example is the use of recorded questions or verbal instructions other than depending on written instructions which deter learners with low vision from participating. According to USAID (2018), in order for students with disabilities to be able to fully participate in the learning process, they need assistance like accommodations. For instance, learner-centered assessments can excite students and encourage successful learning (Andrade & Brookhart, 2016). In keeping with the

aforementioned, Kerri (2017) emphasizes the necessity of suitable teaching, evaluation, and modifications to promote visual efficiency for students with low vision. The purpose of this study was to determine how much teachers are modifying assessments to accommodate students with limited vision.

Teachers can use assessment strategies and tools for ordinary learners in assessing those with special education needs (Eron et al., 2019). Nonetheless, they stress that modifications and adjustments should be made to suit learners' needs. Individual learners' needs can be met within the entire class through the use of differentiated instruction and assessment criteria (Westbroek et al., 2020). Differentiated instruction and modes of assessment give educators an opportunity to improve the lives of struggling learners (Laura, 2010).

Teachers should offer alternate formats of assessment such as oral examinations, presentations or projects (Edyburn, 2020). These formats will allow learners to display their knowledge and skills understood or mastered. In the context of primary schools, learners in lower primary classes are normally given oral questions and those in middle and upper primary are exposed to written questions. The use of alternative forms of assessment will give learners an opportunity to select on the type of assessment to take on. This investigation explored the different forms of assessment formats which are used by teachers as they support learners with low vision.

Teachers must be aware of the developmental patterns of visually impaired students, assess and demonstrate their proficiency with media, use assistive technology to support students' education, and use instructional materials appropriately (Were, 2021). When it comes to responding to assessments, technology can help students with impaired vision (Diane, Worley & Andrea, 2016). Screen magnifiers, screen readers, and optical character recognition are among the dependable technologies recommended to assist students with impaired vision in accessing and reading digital assessment items. (OCR) software. It is therefore inevitable that refresher courses are organized to empower teachers with the required knowledge and skills in using technology to assess learners with low vision (Kerri, 2017).

The following should be considered while welcoming learners to the class; introduction of learners with low vision as others, encouragement to answer questions, verbalize praise and disapproval, be specific with language, talk directly to the learner with direct eye contact and encourage them to look directly at people (Mufarrq, 2011). These considerations are good in that they help learners to develop a positive attitude towards learning. This is based on the teachers' concerns in addressing issues related to their challenges where they feel valued and recognized.

2.6 Chapter Summary

According to the referenced literature, teachers play a crucial role in helping students with limited vision. Nevertheless, it is also shown that they are unable to assist students when working alone. This implies that in order to support students with limited vision, networking and engagement with other stakeholders are necessary. The development of individualized educational plans to meet the learning needs of students with low vision, as well as instructional materials, methods, and assessment strategies targeted at raising the achievement of students with low vision in an inclusive setting, can all help achieve this. There is, however, scant evidence that educators in inclusive primary schools in Nyondo Sub-County, Mbale district, are qualified to instruct students with impaired vision.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This study looked at how well teachers in inclusive primary schools in Nyondo Sub-county, Mbale district, could instruct students with limited vision. The following research goals served as the study's guidelines: to investigate the customized lesson plans that teachers create for students with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district; to determine the modifications made to the teaching resources utilized when instructing students with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district; to examine how teachers adapt methods that they use to cater for the needs of learners with low vision in an inclusive setting during teaching in inclusive primary schools in Nyondo Sub-county, Mbale district; and to analyse the adaptation that are put in place when carrying out assessment of learning for learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district. This chapter presents the methodology employed in the study, including the rationale for selecting the various methods. It addresses the study population, research design, sample techniques, data gathering techniques, data processing techniques, ethical issues, constraints, and delimitations. A plan for disseminating the study's findings, purposive sample criteria, and tool pretesting are also included in this chapter.

By triangulating data from interviews, observations, and document analysis, the methodology provides a comprehensive picture of teacher competence, highlighting specific areas where teachers are equipped or need additional training. This approach informs targeted professional development programs, policy adjustments, and resource allocation to better support teachers in modifying their teaching practices ultimately enhancing academic achievement and social outcomes for learners with low vision.

3.1 Research Approach

The qualitative research approach served as the foundation for this investigation, which sought to identify and comprehend issues related to the education of students with low vision in inclusive environments. When investigating human behavior, experiences, and impressions that are impossible to measure, qualitative research is especially well-suited (Tenny & Brannan, 2022). The goal was to comprehend the perspectives of educators and students in their authentic learning environments (Almeida & Rosero, 2021).

3.2 Research Design

The study was guided by a descriptive research design, which allows an in-depth exploration of the characteristics, behaviors, and experiences of the participants (McCombes, 2022). This design was selected

because it provides detailed descriptions of the phenomena under investigation, enabling a deeper understanding of how teachers support learners with low vision in inclusive classrooms.

3.3 Area of Study and Study Population

The study was carried out at two inclusive government elementary schools, School A and School B, in Nyondo Sub-County, Mbale District. In School A, there were 34 teachers and 934 students, 15 of whom had low vision, whereas in School B, there were 20 teachers and 845 students, 4 of whom had low vision. Teachers and students with low vision made up the study population because the goal of the study was to determine how teachers modified their lesson plans and instructional resources to meet the needs of these students.

3.4 Sample Size and Sampling Methods

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3.3.1 Sample distribution

The study involved a total of 22 participants:

3.3.1.1 School A: Six teachers and six learners with low vision.

3.3.1.2 School B: Six teachers and four learners with low vision.

The sample size was determined by the availability of participants who met the study's inclusion criteria, aligning with guidelines for qualitative research, which prioritize depth and relevance of data over quantity (Patton, 2015).

Table 3.1: Sample Composition

Participant	Sample Size	Sampling Technique	Rationale
Teachers	School A: 6, School B: 6	Purposive sampling	Teachers involved in teaching learners with low vision.
Pupils	School A: 6, School B: 4	Purposive sampling	Learners with low vision able to interact with the researcher and provide responses.

The principle of saturation was used in this study to justify the sample sizes of 12 teachers and 10 pupils. Saturation refers to the point at which no new information or themes emerge from further data collection, meaning the sample size is sufficient for addressing the research questions.

For the teachers, a sample size of 12 was deemed adequate because saturation in qualitative research

is typically reached with small to moderate sample sizes, especially when the study focuses on detailed and, context-specific insights. As Fusch and Ness (2018) note, data saturation is often achieved with 10-15 participants, particularly when the participants are highly knowledgeable about the topic, as in the case of experienced teachers. By the time the 12 teachers were interviewed, no new themes were emerging, indicating sufficient data had been collected.

Similarly, for the pupils, the inclusion of 10 participants was sufficient to reach saturation. in qualitative research with homogeneous groups (like pupils from similar educational contexts), a sample size of around 10 is often enough to capture all relevant themes (Saunders et al., 2018). The data from the first 10 pupils did not reveal any new insights after the interviews were completed, further confirming that saturation had been achieved.

3.3.2 Sampling techniques

A non-probability sampling method called purposive sampling was used in the study to choose participants based on particular traits pertinent to the goals of the investigation (Etikan et al., 2016). Since they could offer in-depth knowledge of teaching and learning strategies in inclusive environments, this approach was selected to guarantee the participation of those directly involved in the education of students with low vision.

Teachers were selected based on their experience and active involvement in teaching learners with low vision in inclusive classrooms. Specifically, the study targeted teachers who had experience in developing and implementing Individualized Educational Plans (IEPs), a key intervention for addressing diverse learning needs (Mitchell, 2014). Additional criteria included their willingness to participate and availability during the data collection period, ensuring that the information gathered reflected current practices (Creswell & Poth, 2018).

Learners with low vision were selected based on formal identification by their schools and their willingness to participate. The study focused on learners from Primary 3 (P.3) to Primary 7 (P.7), as these learners were deemed mature enough to articulate their experiences effectively. Their insights were crucial for understanding how education had been adapted to meet their needs in inclusive settings (UNESCO, 2019). For instance, six learners with low vision were selected from School A, while all four learners with low vision in School B were included, ensuring a comprehensive representation of the targeted demographic.

3.5 Data Collection Methods and Instruments

In this study, data was collected through interviews and observations to understand how teachers

develop Individualized Educational Plans (IEPs), adapt instructional materials, and implement appropriate teaching and assessment methods for learners with low vision.

3.5.1 Interview

The semi-structured interview was the main technique used to collect data, enabling the researcher to get thorough, open-ended answers from both teachers and students. Teachers and students were interviewed in-person by the researcher. Data on how teachers created and executed IEPs, updated teaching and assessment strategies, and customized instructional materials for students with low vision were gathered through the use of interview guides. Learners were asked about their involvement in the educational process, including the modifications made by teachers to cater for their needs. Teachers were asked about their role in developing and implementing IEPs and the adaptations they made in their teaching practices.

3.5.2 Observation

Participant observation was employed in addition to interviews to obtain firsthand knowledge of the interactions between teachers and students with low vision during classes. Details like students' participation in classes, the kinds of teaching materials used, the availability of assistive technology, and the teachers' proficiency with ICT measured by their ability to successfully integrate assistive technology and digital resources to support students with low vision—were all recorded using an observation checklist. This included establishing their knowledge on software, hardware, and adaptive tools relevant to inclusive education. Seating arrangements, and assessment methods. The observation helped to confirm the findings from interviews and provided a clearer picture of the strategies teachers used to support learners with low vision in the classroom.

3.6 Reliability of Data Collection Tools

To ensure the reliability and effectiveness of the data collection tools, the researcher followed several procedures. The interview guides and observation checklists were developed, reviewed, and refined in collaboration with the research supervisors. In order to assess the instruments' clarity and effectiveness in capturing relevant data, both a pre-test and a pilot study were conducted.

The pre-test was administered at a school that was not part of the final research. This pre-assessment was designed especially to assess the appropriateness and intelligibility of the observation checklists and interview guidelines. A limited group of participants who were representative of the intended audience was chosen to offer input on the instruments' design, content, and applicability. In order to make sure the instruments were understandable, clear, and useful for gathering data, the pre-test

feedback helped identify any problems with the instruments and resulted in the appropriate revisions (Hassan & Mahmud, 2021).

A pre-test is essential to ensure that data collection instruments are well-suited to the context of the study and capable of gathering meaningful data (Sharma et al., 2020).

To test the complete research procedure in a real-world situation, a pilot study was carried out after the pre-test. To assess the methodology's general viability, including the application of the observation checklists and interview guides, a pilot study was conducted at a different school from the research sites. In this method, the researcher was able to evaluate how the participants engaged with the instruments in a large-scale trial, identify any logistical issues, and verify that the entire data collection procedure was efficient and successful. The feedback from the pilot study led to further refinements of both the instruments and the methodology, ensuring that the final study would run efficiently (Mugenda & Mugenda, 2019; Suri, 2020). Conducting a pilot study allows the researcher to address any unanticipated challenges and assess the suitability of the entire research design before full-scale implementation (Thompson, 2018).

The pilot study and the pre-test were both crucial in improving the instruments and guaranteeing that the data gathering procedure was dependable and efficient for the primary investigation. These preliminary testing phases enhanced the instruments' relevance and clarity, guaranteeing that they would produce reliable, high-quality data for the study. The study investigated teacher and student perspectives and competencies through semi-structured interviews and direct classroom observations. According to Creswell and Poth (2018) and Wilmes and Siry (2018), semi-structured interviews are highly recognized for their capacity to extract detailed, context-specific insights while enabling participants to freely voice their opinions. The interview guides included questions designed to explore teachers' attitudes towards instructional practices and their self-assessed ability to meet the needs of learners with low vision. Learners provided insights into how they perceived the modifications implemented by teachers and their overall classroom experiences.

Comprehensive checklists that recorded teaching strategies, the use of modified teaching resources, and the incorporation of assistive technology in the classroom served as a guide for the observations. As a method, observation provides real-time confirmation of self-reported information, guaranteeing that participants' statements and their actual behaviors match (Er, 2020; Barni et al., 2019). To evaluate competencies in inclusive teaching practices, patterns that emerged from these observations were examined.

Lesson plans and individualized education programs (IEPs) were among the pertinent materials that

were triangulated with participant narratives from interviews in order to further validate perceptions and competencies. This triangulation technique has been acknowledged as a strong way to guarantee depth and dependability in qualitative research (Seidman, 2019; Mahler et al., 2018).

This approach ensured a comprehensive understanding of both the perceptions and actual practices, aligning with contemporary methodologies that emphasize participatory and empirical validation in educational settings (Cucuk et al., 2018; Jean-Baptiste et al., 2019).

3.7 Ethical Considerations

Ethical considerations were paramount in ensuring the protection of participants' rights. The researcher obtained an introductory letter from the Graduate School of Kyambogo University and sought permission from the participating schools. Informed consent was obtained from both teachers and learners, and participants were assured of the confidentiality of their responses. No participant was coerced into participating, and all had the option to withdraw at any time without penalty. The study adhered to ethical guidelines to protect the welfare and privacy of all participants (Godwin et al., 2019).

3.8 Data Collection Procedures

Following approval from the research committee, the researcher obtained permission from the schools and scheduled interviews with teachers and learners. Classroom observations were conducted to assess how teaching and learning occurred in inclusive settings for learners with low vision. Data collection was carried out with minimal disruption to regular school activities, and participants were informed about the purpose and process of the study.

3.9 Data Analysis

This study's qualitative data were subjected to discourse analysis, which yielded unique insights into the experiences and educational practices of students with low vision in inclusive classrooms. The language used in classroom interactions and interviews was examined using discourse analysis. Discourse analysis focuses on how language shapes social realities and power relations (Gee, 2014). Through discourse analysis, the researcher investigated how educators and students shared their roles, struggles, and experiences in the classroom. For example, the language used by teachers to describe adaptations for learners with low vision was carefully examined to uncover any underlying assumptions or power dynamics, such as whether language empowered or disempowered learners with disabilities. This approach was particularly valuable for understanding how language both reflects and reinforces inclusive or exclusionary practices in the classroom.

The data was organized using open coding, followed by axial coding to connect categories and selective coding to form coherent narratives. The researcher also looked for patterns, themes, and relationships within the data, linking the findings back to the research objectives.

3.10 Limitations and Delimitations

3.10.1 Limitations

The study was limited by the fact that it focused only on two schools within Nyondo Sub- County, which may not represent the broader context of inclusive education in Mbale District. The pace of data collection was also affected by other school activities, such as sports competitions. Some classrooms lacked basic infrastructure (e.g., windows and doors), which impacted on the use of instructional materials. Additionally, some learners with low vision expected medical treatment, such as eye care or the provision of reading glasses, which was beyond the scope of the study.

3.10.2 Delimitations

The study focused on teachers and students with low vision and was restricted to two inclusive schools in Nyondo Sub-County, Mbale District. The study only included people who were directly involved in the educational processes for students with limited eyesight. To make sure they were suitable, the instruments were pre-tested and improved, which made it easier to gather precise data.

3.11 Dissemination Plan

The findings of this study will be disseminated through a detailed report submitted to Kyambogo University, fulfilling the academic requirements for the research. The remaining dissemination activities are pending the official approval of the thesis before the publication process begins. A summary of the findings will be shared with the participating schools to inform their teaching practices and improve the support offered to learners with low vision. Additionally, the results will be presented at educational conferences, and a summary will be published in relevant academic journals. The findings will also be shared with policy makers and educators involved in inclusive education to guide the development of more effective teaching strategies for learners with low vision.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter presents, interprets, analyses and discusses findings on “Teachers’ competences in teaching learners with low vision in inclusive primary schools in Nyondo Sub-County, Mbale district”. This study was guided by the following research objectives: to explore the individualized educational plans prepared by teachers for learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district; to identify the adaptations made to instructional materials that are used when teaching learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district; to examine how teachers’ adapt methods that they use to cater for the needs of learners with low vision in an inclusive setting during teaching in inclusive primary schools in Nyondo Sub-county, Mbale district; and to analyse the adaptation that are put in place when carrying out assessment of learning for learners with low vision in inclusive primary schools in Nyondo Sub-county, Mbale district. This chapter comprised the description of participants in terms of response rate, gender, age, education level and teaching experience. This was followed with the presentation and analysis of data based on the expected research themes on IEPs, adaptation of instructional materials, teaching and assessing methods.

4.1 Description of participants

4.1.1 Response rate

The interviewed participants were 20 out of the expected 22 participated. The two participants who did not participate in the study were one pupil with low vision who was doing a test and the other pupil who was absent on the day of data collection due to sickness. In order not to identify the participants by their real names, participants were given synonyms based on their respective schools and categories. A teacher from School A was identified as AT and a pupil was identified as AP. Similarly, a teacher from School B was identified as BT and a pupil as BP. Therefore, teachers were referred to as AT1, AT2, AT3, AT4, AT5, AT6 and BT1, BT2, BT3 and BT4. Pupils were referred to as AP1, AP2, AP3, AP4, AP5, AP6 and BP1, BP2, BP3 and BP4. AP1 means the first pupils from school A, AP2 second pupil from school A, AP3 third pupil from school A and AP5 the fifth pupil from school A. AT1 first teacher from school A, AT2 second teacher from school A, AT3 third

teacher from school A , AT4 fourth teacher from school A, AT5 the fifth teacher from school A and AT6 the sixth teacher from school A. BP1 is first pupil from school B, BP2 second pupil from school B, BP3 third pupil from school B and BP4 fourth pupil from school B. BT1 first teacher from school B, BT2 second teacher from school B, BT3 third teacher from school B and BT4 fourth teacher from school B.

4.1.2 Gender of participants

The data were obtained from participants with gender concern. Out of 20 participants, 08 were males as opposed to 12 who were females as shown in the table below.

Table 4.1: Showing the Gender of Participants

Gender	Frequency
Males	08
Females	12
Total	20

Source: Primary Data

Table 4.1 revealed that the data collection was done with responses coming from both female and male participants. This is good enough to conclude that the information given was gender sensitive as views were obtained from both genders.

4.1.3 Age of participants

The age of participants ranged between 10 years and 60 years. It contained five age groups of 10-20, 21-30, 31-40, 41-50 and 51-60. Table 4.2 indicated that the responses were obtained from participants whose age ranged from 10 years up to 60 years which was mandatory for retirement. This therefore implies that the data was obtained from appropriate age groups with specific duties from which experiences were drawn as shown in Table 4.2 below:

Table 4.2: Showing the Age Range of Participants

Age Group	Frequency
10-20	10
21-30	02
31-40	01
41-50	05
51-60	02
Total	20

Source: Primary Data

Information from Table 4.2 revealed that majority of the participants were in the range of 10- 20 years. This range comprised the learners. It was followed by that of 41-50 years who were teachers.

4.1.4 Education level of participants

The data gathering technologies showed that the educational level spanned from primary to bachelor's degree. With ten participants who were students with limited eyesight, the primary level of schooling had the largest number. As seen in Table 4.3 below, this was followed by diploma level education, which had five instructors, certificate level education, which had four teachers, and bachelor's degree education, which had only one teacher.

Table 4.3: The Level of Education of Participants

Level of Education	Frequency
Degree	01
Diploma	05
Certificate	04
Primary	10
Total	20

Source: Primary Data

Table 4.3 revealed that the level of education among teachers was very low as only one was having a bachelor's degree which is a requirement for a primary teacher. This means that more teachers should upgrade their level of education so that they are able to meet the requirement of the National Teacher Policy and support the learners with low vision to excel in their academic performance.

4.1.5 Teaching experience of teachers

Table 4.4: *Teaching experience of teachers*

Teaching Experience	Frequency
1-10 years	02
11-20 years	05
21-30 years	03
Total	10

Source: Primary data

The teaching experiences of teachers ranged from 7 years to 30 years. This was categorized into three groups namely 1-10, 11-20 and 21-30 years as per Table 4.4 above. The analysis of the data showed that the majority of the teachers had taught between 11 to 20 years. The table still revealed that 3 teachers belonged to the teaching experience group of 21 to 30 years as opposed to those of less than 10 years.

Table 4.4 also confirmed that teachers in the primary schools had varying teaching experiences. This implies that they should share experiences on teaching learners with low vision through utilization of collaborative avenues.

4.2 Presentation of Findings on the Development of Individualized Education Needs for Learners with Low Vision

4.2.1 Teachers' views on individualized educational needs for learners with low vision

Teachers discussed a range of approaches to meeting the unique learning requirements of students with limited eyesight. As an example of the range of talents among students, participant ATI said, "Some learners have problems with writing, and some see well on the chalkboard." This implies that different interventions are needed to meet the specific needs of students with limited vision. Participant API also stressed the significance of seating arrangements, expressing the wish that "the teacher makes me sit in front of the

classroom so that I can see well." This highlights how important classroom placement is in facilitating low-vision learners' visual access.

Furthermore, the use of adapted materials and assistive devices was underscored. Participant AT2 stated, *"Learners need devices like reading glasses, materials used should be big, bright, and real,"* which highlights the necessity for visually accessible teaching aids. Participants AP2 and AP4 emphasized the need for oral reinforcement, stating, *"The teacher should read for me so that I can repeat after her to understand well."* This illustrates how auditory support complements visual aids, catering for learners with low vision.

The findings reveal that teachers recognize the varying needs of learners with low vision, emphasizing the importance of individualized attention in inclusive classrooms. This aligns with previous research, which suggests that learners with low vision benefit from specific seating arrangements and support materials tailored to their visual abilities (UNICEF, 2017). It also underscores the need for teachers to adapt their instructional strategies to meet the diverse needs of these learners, a finding supported by Mfon and Nkanga (2020), who highlight that teachers may lack the skills to identify and address such needs without proper training. Furthermore, the lack of Individualized Education Plans (IEPs) among the teachers in this study points to the necessity for professional development and structured guidance in addressing the needs of learners with low vision (Prajakba, 2022).

4.2.2 Identification of learning needs of learners with low vision

The identification of learners' needs often involves assessing their visual abilities and adapting seating arrangements. Participant AT4 stated that: *"I should identify long-sighted and short-sighted learners so that they are placed where they feel comfortable"*. This participant emphasized the importance of visual assessment for appropriate classroom positioning.

Similarly, Participant BT4 observed the idea of dynamic seating arrangements, by stating that, *"Learners should be placed in front or keep changing positions till they find a position suitable to their vision."* This reflects the need for flexibility in addressing learners' evolving needs.

Assistive devices were also identified as critical in meeting learners' needs. Participant AT5 said, *"Learners with low vision need support in reading and seeing with the use of assistive devices like spectacles."* This indicates that teachers must actively engage in ensuring learners have access to necessary visual aids. Additionally, direct teacher involvement was emphasized by Participant BT1, who stated, *"I support them by going near them and supporting them to write letters and numbers."*

This hands-on approach reflects the teachers' efforts to assist learners in overcoming challenges in writing and comprehension.

The teachers' strategies for identifying learners' needs, such as using seating arrangements and assistive devices, are consistent with best practices in inclusive education. According to Kirchner and Diamond (1999), using visual function as an indicator of support needs is crucial in ensuring that learners have equitable access to education. However, the findings also indicate that more collaborative efforts are required between teachers, parents, eye specialists, and other stakeholders to provide holistic support for learners. This approach is in line with recommendations from Eron et al. (2019) and Parween and Dheeshe (2021), who argue for the importance of a collaborative framework in supporting learners with disabilities.

4.2.3 Assessment of learning needs for learners with low vision

Teachers assess learning needs through close monitoring of learners' classroom performance. Participant AT6 said: *"I assess their needs through their reading and writing. Some of them do not finish their exercises and others write mistakes."* This indicates that teachers use learners' output as a diagnostic tool for identifying challenges. Personalized interventions were highlighted by Participant AT4, who stated: *"After marking an exercise, I give extra attention by calling learners with low vision at lunchtime to explain to them and they do corrections."* This shows that teachers provide tailored support to address learning gaps.

Collaboration with external experts was another strategy. Participant AT3 noted that: *"I invite resource persons in Special Needs Education (SNE) within and outside the school to examine learners with low vision."* This approach demonstrates the importance of specialized input in understanding and addressing learners' needs. Teachers' collaboration with parents and resource persons enhances the accuracy of assessments and ensures that interventions are aligned with learners' specific challenges.

The assessment of learners' needs, based on reading and writing tasks and collaboration with other professionals, is a critical aspect of supporting learners with low vision. The findings suggest that teachers use practical methods, such as individualized attention and the involvement of special education resource persons, to assess learners' needs. These practices align with Medley (1976), who emphasizes that a multi-faceted approach, including the use of assistive technologies and collaboration with experts, enhances the educational experience of learners with low vision. Teachers' ongoing assessments also facilitate the identification of specific support strategies, including extra time, adaptations in teaching methods, and the use of assistive technologies

(USAID, nd).

4.2.4 Pupils' responses on identification of learning needs for learners with low vision

Pupils' responses revealed that teachers often identify their needs through careful observation and interaction. Participant AP1 remarked, *"When I leave some gaps to be filled, then my teacher will know my needs,"* showing that incomplete work serves as a cue for teachers to identify challenges. Strategic seating arrangements were mentioned by Participant AP3, who said, *"Teachers seat me in front to help me see well and read for me,"* highlighting the role of positioning in supporting learners with low vision.

Environmental and behavioral cues also play a significant role in identifying needs. Participant BP4 shared, *"Teachers find out my learning needs by seeing tears rolling in my eyes and when there is much light on the side I am seated, I explain to the teacher to change me to where I can see well."* This reflects the sensitivity of teachers to physical discomfort caused by environmental factors. Similarly, Participant BP3 stated, *"When I rub my eyes and when I write wrong spellings, the teacher knows I am not seeing well,"* showing how teachers use behavioral indicators to assess vision-related challenges.

Additionally, Participant AP5 mentioned, *"When I write mistakes, the teacher sees my need and when I do not take the book for marking,"* which indicates that teachers identify difficulties through patterns of avoidance and errors in learners' work. These responses demonstrate the importance of teacher-pupil interaction and observation in identifying the specific needs of learners with low vision in inclusive classrooms.

Pupils' responses indicate that they are aware of the support they need, such as seating arrangements and adjustments to classroom lighting. This highlights the importance of learners' involvement in the identification of their needs, which is consistent with research by Laura (2010) and Robinson (2014), who argue that learner input is vital in creating individualized instructional strategies. Furthermore, the findings point to the necessity of including eye specialists and assistive technology experts to provide more comprehensive assessments of learners' needs. This collaborative approach can lead to better identification and support for learners with low vision.

4.3 Presentation of Findings on the Adaptation of Instructional Materials for Learners with Low Vision

4.3.1 Teachers' opinions on the availability of instructional materials for learners with low vision

Teachers frequently highlighted the scarcity of instructional materials and the creative measures

they undertake to address this gap. Participant AT5 expressed that; *"Instructional materials are difficult to obtain due to high costs, so I resort to borrowing items like empty boxes from shopkeepers."* This statement illustrates how teachers rely on informal networks and resourcefulness to compensate for institutional shortages. Similarly, Participant BT1 noted, *"I increase the size of drawings and text in textbooks to aid visibility for learners with low vision,"* emphasizing the necessity of modifying existing materials to meet learners' needs.

Participant BT4 mentioned that learners with low vision preferred textbooks over charts. This participant stated that: *"Textbooks are given instead of charts because learners can hold them close for better visibility."* This observation reflects the practicality of specific materials for visually impaired learners. Furthermore, Participant AT2 shared that administrators occasionally provide basic materials, stated, *"They give us manila cards and markers."* However, Participant AT3 highlighted systemic constraints, remarked; *"With a large learner population, not enough materials are available, so we involve learners in bringing items from home like banana fibers and counting sticks."* These point to the inequitable burden placed on learners and their families to supplement classroom resources.

Through these examples, discourse analysis reveals a recurring narrative of resource scarcity and the consequent improvisation by teachers, often at personal or community expense. The language reflects frustration but also resilience in addressing these systemic inadequacies.

The findings suggest a significant reliance on traditional and improvised materials, with limited adaptation to the specific needs of learners with low vision. The teachers' use of textbooks, charts, and local resources like counting sticks and banana fibers reflects a discourse of adaptability but also an undercurrent of frustration due to resource limitations. The fact that teachers have to "borrow" materials or "pick from the school garden" suggests a systemic neglect of the needs of learners with low vision. These adaptations, though well-meaning, may not be sufficient if not aligned with the individualized needs of learners.

Moreover, the findings indicate the need for more collaborative efforts to address resource gaps. Teachers should work with stakeholders, including parents, NGOs, and local governments, to procure and adapt resources in ways that meet the specific needs of learners with low vision. As Tonefawa (2022) highlights in the context of the 4th SDG, achieving inclusive and equitable quality education requires a concerted effort from all educational stakeholders. Teachers should not be working in isolation but should be supported by a community that can provide the necessary resources, both material and human, to facilitate the learning of learners with low vision.

4.3.2 Pupils' views on instructional materials used by teachers

Pupils highlighted inconsistencies in the use and adaptation of instructional materials. Participant AP4 observed, *"In P.6, teachers used charts, but by P.7, they stopped using charts and began writing small letters on the chalkboard, which I cannot see well."* This suggests a decline in adaptation efforts as pupils advance through the education system, potentially due to increased academic pressures or resource limitations. Similarly, Participant AP5 emphasized, *"I can see words on the chart but I cannot see well the words on the chalkboard because they are small."*

Participant BP2 recommended alternative methods, stating, *"Teachers should draw diagrams on the chalkboard instead of using small letters, as the letters are hard to see."* This practical suggestion underscores the learners' desire for visual materials that align with their needs. Participant AP6 provided a further recommendation: *"Maps drawn on charts are helpful, but small letters are difficult to read. Using red markers would make them more visible."* In contrast, Participant BP3 pointed out the importance of color, noted, *"Colors like pink and orange are easier to see than white on charts or chalkboards."*

The discourse here reveals a shared frustration with the inadequacies of instructional material adaptation, particularly regarding visibility. Pupils' direct suggestions reflect an understanding of their specific needs and a desire for proactive measures to address them.

The findings from the field underscore the ongoing challenges faced by learners with low vision in inclusive settings. While teachers utilize charts and chalkboards, the materials are often not adapted in ways that facilitate learning for all learners, especially those with visual impairments. The pupils' preference for diagrams and larger, higher-contrast text points to a clear need for more thoughtful and individualized adaptations to instructional materials.

These findings suggest that the instructional strategies employed by teachers are not fully aligned with the requirements of learners with low vision. This misalignment can be attributed to a lack of specialized knowledge and training in creating accessible learning materials. As highlighted by Mfon et al. (2020), inadequate teacher training in Special Needs Education (SNE) can result in less effective teaching practices for learners with disabilities. The absence of individualized education plans (IEPs) further exacerbates the problem, as teachers lack a structured framework to guide their adaptations. Furthermore, the pupils' preference for specific colors and larger, more visible text emphasizes the importance of sensory considerations in the classroom. As Tonefawa (2022) notes, inclusive education requires that teaching materials and strategies be tailored to accommodate the diverse sensory needs of learners. The findings suggest that there is a need for greater awareness

and training on how to make instructional materials accessible, including the use of contrasting colors, larger fonts, and diagrams that are designed for learners with low vision.

To address these issues, teachers should be trained in the use of IEPs and the principles of differentiated instruction. Collaboration between teachers, parents, and school administrators is crucial to ensure that instructional materials are adapted to suit the unique needs of learners with low vision. Stakeholders could also plan sensitization sessions to increase understanding of the significance of modifying educational resources and making sure that all students, regardless of visual impairments, can access them. In keeping with the goals of SDG 4, which encourages inclusive and equitable quality education, this could contribute to the development of a more encouraging and inclusive learning environment where all students have equal access to high-quality instruction (Tonefawa, 2022).

4.3.3 Responses from teachers on administrators' support

Teachers acknowledged administrative efforts to support the adaptation of instructional materials. Participant BT4 said; *"School administrators have requested textbooks for learners with low vision from the district and provided materials like manila cards and markers."* This statement reflects an institutional attempt to address resource shortages. Participant BT3 added, *"Administrators support us by observing our classes to ensure inclusive teaching methods."* This indicates a commitment to accountability and inclusivity at the administrative level.

Further, Participant AT3 highlighted external collaboration, by stating that, *"Administrators partner with NGOs to provide training for teachers and organize refresher courses."* Such initiatives enhance teachers' capacity to create and use adapted materials effectively. Similarly, Participant AT5 noted, *"Administrators encourage us to use instructional materials to improve learning outcomes,"* underscoring the role of leadership in fostering inclusive practices.

Discourse analysis of these responses reveals a narrative of partial support. While administrators make commendable efforts, the language used by teachers often reflects a reliance on external interventions (e.g., NGOs) rather than systemic solutions.

The findings from the field confirm that administrators play a critical role in the provision of instructional materials and overall support for learners with low vision. As BT4 stated, administrators *"requested the district to provide textbooks"* and *"gave extra books which cater for learners with low vision,"* reflecting their involvement in procuring resources. However, these resources were not sufficiently tailored to the unique needs of learners with low vision. This can be

attributed to the administrators' lack of specific training in Special Needs Education (SNE), as evidenced by the lack of materials adapted to suit these learners. The use of non- adapted textbooks and charts, as mentioned by BT4 and AT3, points to a disconnect between the administrative support in procuring materials and the practical application of those materials in an inclusive manner.

The lack of effective adaptation of instructional materials is also consistent with the findings from UNEB (2021), which questioned teachers' ability to implement pedagogical strategies effectively when they lack the necessary support. The teachers' responses, including their reliance on generic instructional materials like textbooks and charts, further support the claim that teachers and administrators are not adequately equipped to meet the needs of learners with visual impairments. These gaps can be partly attributed to the misconception, noted by UNICEF (2013), that children with disabilities are less educable, leading to a lack of concerted efforts to adapt teaching methods and materials.

To address these challenges, it is essential that school administrators receive targeted training in SNE. As BT3 highlighted, administrators supported teachers by allowing them to attend workshops and refresher courses. These chances, though, might not have been enough to give administrators the know-how to modify resources for students with impaired vision. Further evidence for this comes from Medley's (1977) findings, which indicate that administrators who undergo SNE training are better equipped to oversee and assist instructors in meeting the various needs of every student. Administrators can improve their capacity to assist teachers in creating Individualized Education Plans (IEPs) and modifying instructional materials for students with low vision by participating in seminars, working with specialists, and offering continuous professional development (CPD).

Ultimately, the evidence from the field underscores the need for a more comprehensive approach to training and support for both teachers and administrators. As AT3 noted, administrators facilitated access to NGOs and refresher courses, but these efforts need to be followed up with more specific and targeted training. The findings suggest that a more coordinated effort, including collaboration with experts in SNE and the provision of assistive technologies, will enable teachers and administrators to better support learners with low vision. Tonefawa (2022) clarifies that continuous professional development is essential as it fosters a more inclusive and supportive learning environment. This calls for efforts of many stakeholders in striving to achieve the 4th SDG of ensuring inclusive, equitable, and quality education for all.

4.3.4 Teachers' views on collaboration

The adaption of teaching materials revealed collaboration as a key theme. "I go to school neighborhoods to request fibers to make balls and ropes," said participant AT2, highlighting the importance of community involvement. "We sit together as P.3 teachers and agree on how to adapt our materials, like writing charts and making puppets," said participant AT1, underscoring the importance of teamwork. This demonstrates how teachers can work together to address common issues.

Participant AT4 added, *"We plan together and request help from administrators and community members for needed materials,"* reflecting a broader network of support. Participant AT5 noted learner involvement by explaining; *"Learners help us hang instructional materials in class and bring items like banana fibers from home."* Similarly, Participant AT3 remarked, *"Parents and NGOs provide materials, like Braille kits,"* underscoring the role of multi- stakeholder engagement in supporting inclusive education. The discourse here reveals a pattern of reliance on collaboration to compensate for resource gaps. The language suggests that while these efforts are effective, they are reactive rather than preventive, pointing to systemic limitations in resource provision.

The findings from the field confirm that administrators play a critical role in the provision of instructional materials and overall support for learners with low vision. As BT4 stated, administrators *"requested the district to provide textbooks" and "gave extra books which cater for learners with low vision,"* reflecting their involvement in procuring resources. However, these resources were not sufficiently tailored to the unique needs of learners with low vision. This can be attributed to the administrators' lack of specific training in Special Needs Education (SNE), as evidenced by the lack of materials adapted to suit these learners. The use of non- adapted textbooks and charts, as mentioned by BT4 and AT3, points to disconnect between the administrative support in procuring materials and the practical application of those materials in an inclusive manner.

The lack of effective adaptation of instructional materials is also consistent with the findings from UNEB (2021), which questioned teachers' ability to implement pedagogical strategies effectively when they lack the necessary support. The teachers' responses, including their reliance on generic instructional materials like textbooks and charts, further support the claim that teachers and administrators are not adequately equipped to meet the needs of learners with visual impairments. These gaps can be partly attributed to the misconception, noted by UNICEF (2013), that children with disabilities are less educable, leading to a lack of concerted efforts to adapt teaching methods and materials.

To address these challenges, it is essential that school administrators receive targeted training in SNE. As BT3 highlighted, administrators supported teachers by allowing them to attend workshops and refresher courses. However, these opportunities may not have been sufficient to equip administrators with the necessary skills to adapt materials for learners with low vision. This is further supported by the findings of Medley (1977), which suggest that administrators who receive training in SNE are better able to supervise and support teachers in meeting the diverse needs of all learners. Through workshops, collaboration with experts, and continuous professional development (CPD), administrators can enhance their ability to support teachers in adapting instructional materials and developing Individualized Education Plans (IEPs) for learners with low vision.

Ultimately, the evidence from the field underscores the need for a more comprehensive approach to training and support for both teachers and administrators. As AT3 noted, administrators facilitated access to NGOs and refresher courses, but these efforts need to be followed up with more specific and targeted training. The findings suggest that a more coordinated effort, including collaboration with experts in SNE and the provision of assistive technologies, will enable teachers and administrators to better support learners with low vision. This approach will foster a more inclusive and supportive learning environment, in line with the goals of SDG 4 to ensure inclusive, equitable, and quality education for all (Tonefawa, 2022).

4.3.5 Teachers' views on ways of adapting instructional materials

Teachers employed various strategies to adapt instructional materials. Participant AT2 explained, *"I design materials with different colors and bold letters."* Similarly, Participant BT4 noted, *"I write bold letters and make diagrams big enough for learners with low vision to see."* These adaptations demonstrate an understanding of the specific visual requirements of learners.

Participant BT3 emphasized tactile engagement, stating, *"I allow learners to touch materials and also use textbooks as instructional aids."* This reflects an effort to incorporate multisensory approaches to learning. Discourse analysis of these statements highlights a proactive approach by teachers to address learners' needs, despite systemic challenges.

The responses from teachers indicate that there are genuine attempts to make instructional materials more accessible to learners with low vision. Teachers' use of bold letters, enlarged diagrams, and tactile materials like charts reflects an understanding of basic strategies to aid learners with visual impairments. However, these efforts are not enough on their own. The lack of advanced tools, such as audio and video resources, limits the accessibility of the materials and prevents teachers from

fully supporting learners with low vision.

The absence of these resources could be linked to the teachers' limited training in using assistive technologies. As highlighted by Eron et al. (2019), the ability to modify teaching methods and materials to accommodate learners with disabilities requires specific knowledge and skills, which may not be present in the current training programs for teachers. The use of audio and video resources, along with more advanced tactile materials, could significantly improve the inclusivity of the classroom.

In addition, there appears to be a reliance on charts, which, while useful, are not a panacea. Charts can be adapted and used effectively, but they should be supplemented with other resources to ensure that learners with low vision receive a well-rounded and accessible education. This is especially critical for inclusive education, as learners with low vision require multiple modes of representation, such as visual, auditory, and tactile inputs, to fully engage with the curriculum (Deboer et al., 2011; Eron et al., 2019).

The use of locally sourced materials, as indicated by some of the teachers, offers an opportunity for enhancing the relevance and accessibility of instructional materials. This could include using materials that are both culturally appropriate and accessible to learners with low vision. Collaborating with parents, communities, and local organizations could be a practical way to expand the range of materials available for learners with low vision.

4.3.6 Teachers' views on challenges

Teachers identified significant challenges in adapting instructional materials. Participant AT3 remarked, *"There is no motivation for teachers, and there is limited time for creating materials due to large class populations."* This highlights systemic barriers that undermine teachers' efforts. Participant BT4 noted, *"Some parents see providing materials as a punishment, and financial constraints delay material procurement."* This reflects a lack of parental engagement and systemic funding challenges.

Participant BT2 emphasized the time-intensive nature of teaching learners with low vision, stating, *"These learners are slow, requiring a lot of energy and time to assist with reading and writing."* Additionally, Participant AT6 highlighted attitudinal barriers, observing, *"'Normal' learners have negative attitudes towards learners with low vision, making them shy away from participating."* The removal of materials from classrooms due to the absence of doors, as mentioned by Participant AT6, further disadvantages these learners. Discourse analysis of these challenges reveals a recurring

theme of systemic neglect, with teachers' language reflecting frustration at the lack of institutional and parental support. The challenges described indicate a pressing need for systemic reforms to support inclusive education effectively.

The lack of individualized approaches, such as IEPs, raises concerns about the efficacy of these adaptations. Teachers should be encouraged to reflect on their teaching practices and engage in professional development to ensure they are addressing the specific needs of learners with low vision (Eron et al., 2019). The absence of IEPs in lesson plans, as observed in the study, calls for a stronger institutional framework that supports the creation and implementation of individualized educational plans. This could be achieved through targeted professional development, workshops, and collaborations between teachers, parents, and administrators.

4.4 Adaptation of Methods of Teaching to Suit Learners

The findings from the field highlight the multifaceted challenges teachers face in adapting instructional materials to meet the needs of learners with low vision. These challenges can be categorized into issues of motivation, logistical barriers, social attitudes, and infrastructure constraints.

The lack of teacher motivation, as highlighted by AT3, is likely tied to a lack of resources and support from school administration. Teacher motivation is enhanced when adequate resources, recognition, and professional development are provided (Mufarrq, 2011). Without such support, teachers may feel demoralized, leading to suboptimal efforts in adapting materials.

Additionally, the issue of large class sizes, mentioned by BT2, exacerbates the challenges of individualized teaching. Differentiated instruction is crucial in accommodating diverse learner needs, particularly in inclusive classrooms (Waswa, 2021). This can be achieved through the development of Individualized Education Plans (IEPs), which would allow teachers to focus on the specific needs of learners with low vision without compromising the quality of instruction for the entire class. The negative attitudes, both from fellow learners and teachers, underscore a critical social barrier to inclusive education. As AT6 pointed out, the rejection of learners with low vision by their peers prevents them from fully participating in lessons. Creating positive attitudes towards all learners is essential for an inclusive learning environment (Medley, 1977). Teachers need to foster empathy and inclusivity within the classroom, which can be supported through awareness programs and training on inclusive practices.

Parental resistance, highlighted by BT4, further complicates efforts to adapt instructional materials.

This lack of cooperation from parents can stem from misconceptions about the needs of learners with low vision. Raising awareness and involving parents in the educational process is crucial for promoting an inclusive approach to education (UNICEF, 2013).

Finally, infrastructure issues, such as the lack of doors mentioned by AT6, create additional barriers to the use of instructional materials. A well-prepared physical environment is essential for supporting learners with disabilities (Eron et al., 2019). Addressing infrastructure problems can improve the accessibility and usability of instructional materials, making it easier for both teachers and learners to use them effectively.

Overall, the findings suggest that a systemic approach is needed to address these challenges. Schools should focus on improving teacher motivation, fostering inclusive attitudes, involving parents, and addressing infrastructure issues. With the right support and resources, teachers will be better equipped to adapt instructional materials and create a more inclusive educational environment for learners with low vision.

4.4.1 Teachers' views on adaptations of methods of teaching to suit learners with low vision

The findings indicate that teachers use participatory and interactive methods to adapt their teaching to meet the needs of learners with low vision. These methods include pairing learners with peers, using group work, and implementing strategies such as “think-pair-share” and child-centered approaches.

Collaborative Learning Strategies: Teachers highlighted the use of pairing and group work to facilitate learning for learners with low vision. For instance, AT1 stated, *“I pair a learner with low vision with the one who sees to an activity concerning learning using the child-to-child approach.”* Similarly, AT3 mentioned using *“think-pair-share for learners to learn from each other,”* while AT5 explained using *“budding where learners work together, use task analysis, and responsive teaching.”* These strategies emphasize the role of peer interaction in fostering an inclusive learning environment.

Child-Centered Approaches: Participants also noted a reliance on child-centered methods. For example, AT6 shared, *“I use group work and encourage discussion. I use child-centered methods where children act as teachers to themselves.”* This reflects an approach where learners actively engage with content through shared responsibility and teaching others.

Acknowledgment of Teacher Needs: The findings also point to teachers' recognition of gaps in their

preparedness and resources. While the methods employed are participatory, participants implicitly acknowledged the need for additional training and support to enhance their instructional adaptations. For instance, the reliance on basic participatory strategies like group work suggests a lack of advanced tools or techniques that could further improve inclusivity for learners with low vision. The use of participatory methods such as group work and think-pair-share aligns with inclusive pedagogical principles, which emphasize collaboration, peer support, and active engagement. These strategies are consistent with Medley's (1977) theory of learning, which posits that differentiated instruction can significantly enhance the learning experiences of learners with diverse needs. However, the findings also highlight areas where additional interventions are necessary.

Need for Professional Development: While teachers employ strategies that promote inclusivity, their responses reveal a need for refresher courses and workshops to enhance their knowledge of teaching learners with low vision. These courses could include training on seating arrangements, the use of assistive technologies, and verbal response techniques. Such professional development aligns with Laura's (2010) emphasis on equipping teachers with strategies to transform struggling learners into successful ones.

Resource and Systemic Support: The findings suggest that systemic challenges, such as limited access to assistive devices and tailored materials, hinder the full adaptation of teaching methods. Teachers' reliance on traditional methods like group work highlights the need for modern resources, such as audio-visual aids and technology-based solutions, to supplement their efforts. According to research, access to such tools can significantly improve learning outcomes for learners with low vision by reducing reliance on text-based materials.

4.4.2 Teachers' views on challenges experienced during method adaptation

When teachers were asked on factors that impede the process of adapting methods of teaching to suit learners with visual impairments, they had many responses to give. Difficulties in Group Work and Writing Tasks: Participant AP1 explained, *"When teachers give us work to write as a group and I miss out some letters, my group mates blame me."* This highlights the social challenges learners face due to their limited vision. Similarly, AP1 added, *"When I do not see some words, I fail to write an answer to the questions during exams."* These responses reflect how visual impairments can lead to academic struggles, which may, in turn, affect peer relationships.

Inadequate Time and Fast-Paced Teaching: Participant BP4 shared that, *"When the teacher explains*

very fast, I miss out some words. Spellings of some words are difficult, so I ask the teacher to spell for me." This points to teaching methods that may not be adequately adapted to the needs of learners with low vision, especially in terms of pacing and provision of assistance during lessons.

Physical Strain and Fatigue: Another challenge noted was the physical toll of tasks requiring sustained focus. BP3 said, *"When there are many questions to answer, I feel headache and I get blackout."* This indicates that extended visual and cognitive effort can overwhelm learners with low vision.

Peer Support and Inclusivity: Contrary to the above challenges, some learners reported positive experiences. For instance, AP3 stated, *"All children in my class like me and accept to be in my group. If I do not see the word on the examination paper, I ask the teacher to read for me, and I write the answer."* This suggests that a supportive peer environment can mitigate some of the difficulties faced by learners with low vision.

Clarity of Teaching: Participant BP2 noted, *"I do not have any challenge as long as the teacher explains what he is teaching; I understand and am able to do the exercise."* This response highlights the importance of clear, accessible teaching methods in overcoming barriers to learning. The lack of individualized approaches, such as IEPs, raises concerns about the efficacy of these adaptations. Teachers should be encouraged to reflect on their teaching practices and engage in professional development to ensure they are addressing the specific needs of learners with low vision (Eron et al., 2019). The absence of IEPs in lesson plans, as observed in the study, calls for a stronger institutional framework that supports the creation and implementation of individualized educational plans. This could be achieved through targeted professional development, workshops, and collaborations between teachers, parents, and administrators.

4.4.3 Views of learners with low vision on challenges they face during learning

The findings reveal diverse experiences among learners with low vision in inclusive classroom settings, showing a spectrum of challenges and supportive interactions. Participant AP1 expressed, *"When teachers give us work to write as a group and I miss out some letters, my group mates blame me."* This quote highlights the social challenges learners with low vision encounter when their visual impairment affects group work performance, leading to criticism from peers.

Another challenge was noted by BP4, who said, *"When the teacher explains very fast, I miss out some words. Spellings of some words are difficult so I ask the teacher to spell for me."* This points to teaching methods that do not adequately cater to the needs of learners with low vision, especially in

terms of the speed of instruction and support for spelling.

Participant BP3 added, *“When there are many questions to answer, I feel headache and I get blackout.”* This suggests that traditional teaching and assessment methods place undue physical strain on learners with low vision, which can hinder their ability to engage effectively.

Contrasting the above, AP3 shared, *“All children in my class like me and accept to be in my group. If I do not see the word on the examination paper, I ask the teacher to read for me and I write the answer.”* This indicates that a supportive peer environment can mitigate challenges, creating an inclusive social setting where learners feel valued.

Participant BP2 mentioned, *“I do not have any challenge as long as the teacher explains what he is teaching; I understand and am able to do the exercise.”* This emphasizes the importance of clear explanations and accessible teaching practices in overcoming barriers for learners with low vision.

4.4.4 Methods employed in teaching learners with low vision

The teachers’ narratives demonstrate a discourse centered on the practical adaptation of teaching methods to meet the needs of learners with low vision. Participant AT4’s use of collaborative and incremental strategies is evident in their statement: *“I use discussion, question and answer, and I do you do we do methods.”* This reflects an inclusive and learner-centered approach aimed at gradual skill development. The language emphasizes collaboration and the gradual empowerment of learners, aligning with inclusive education principles. Similarly, Participant AT6’s comment, *“I use a demonstration method which makes learners with low vision practice what I have taught,”* underscores an emphasis on practical engagement, suggesting a discourse of hands-on learning to bridge abstract concepts.

The preference for group work and peer-supported learning by Participant AT2, who stated, *“Group work and child-to-child approach are the methods I use in teaching,”* signals a focus on social interaction and peer facilitation. This is contrasted with BT1 and BT2’s reliance on auditory and visual methods, such as *“listening and speaking”* and *“look and say,”* which reflect a more traditional teaching discourse, focusing on direct instruction. The contrasting methods reveal a dichotomy in instructional preferences, influenced by available resources, training, and familiarity with inclusive practices.

Underlying these approaches is a discourse of challenge and limitation. The teachers’ accounts reveal systemic issues, such as lack of resources and inadequate training. The absence of supportive

administrative structures and professional development opportunities constrains teachers' ability to fully implement inclusive methods, signaling a discourse of institutional neglect and resistance to change.

4.5 Adaptation of Assessment of Learning for Learners with Low Vision

4.5.1 Teachers' opinions on assessment of learners with low vision

The analysis of the teachers' responses on assessing learners with low vision reveals both individual and standardized approaches to assessment. Some teachers tailor assessments to the specific needs of learners with low vision, while others prefer a uniform approach for all learners.

Teachers like AT5 and BT4 emphasize the need for differentiated assessments for learners with low vision. AT5 shared, *"I give learners with low vision remedial lessons to help them understand better. Sometimes when I am assessing, I give those with low vision different tasks."* This indicates a focus on individual support to help learners overcome their specific challenges. Similarly, BT4 noted, *"I normally give learners with low vision end of unit tests and the questions I give learners with low vision are simpler and direct than those I give to the rest of the class."* This reveals a deliberate effort to simplify assessments to match the abilities of learners with low vision, ensuring they are not disadvantaged due to their visual impairments.

Standardized Approaches: In contrast, BT3 described using a more standardized approach, stating, *"All learners are assessed in the same way through the use of question and answer technique and using participatory methods."* This approach promotes equality by treating all learners the same, but it does not account for the unique challenges faced by learners with low vision.

Another significant finding relates to the difficulties learners with low vision face in writing and accommodations. AT4 observed, *"Sometimes learners with low vision have difficulties in writing because they leave out some letters or words when writing. They can also write questions and leave blank spaces without filling."* This highlights the importance of modifying assessment tasks to accommodate such difficulties. On the other hand, BT1 explained, *"I give less work to learners with low vision who cannot write fast. I legibly write bold letters for them to see well."* This suggests a proactive approach to making assessments more accessible through accommodations, though the phrasing of "less work" may imply lower expectations for learners with low vision.

More still, the analysis of the teachers' responses on assessing learners with low vision reveals both individual and standardized approaches to assessment. Some teachers tailor assessments to the specific needs of learners with low vision, while others prefer a uniform approach for all learners.

Two participants (AT5 & BT4) emphasized the need for differentiated assessments for learners with low vision. AT5 said, *"I give learners with low vision remedial lessons to help them understand better. Sometimes when I am assessing, I give those with low vision different tasks."* This indicates a focus on individual support to help learners overcome their specific challenges. Similarly, BT4 noted, *"I normally give learners with low vision end of unit tests and the questions I give learners with low vision are simpler and direct than those I give to the rest of the class"*. This reveals a deliberate effort to simplify assessments to match the abilities of learners with low vision, ensuring they are not disadvantaged due to their visual impairments.

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Writing Challenges and Accommodations: Another significant finding relates to the difficulties learners with low vision face in writing. AT4 observed, *"Sometimes learners with low vision have difficulties in writing because they leave out some letters or words when writing. They can also write questions and leave blank spaces without filling."* This highlights the importance of modifying assessment tasks to accommodate such difficulties. On the other hand, BT1 explained, *"I give less work to learners with low vision who cannot write fast. I legibly write bold letters for them to see well."* This suggests a proactive approach to making assessments more accessible through accommodations, though the phrasing of "less work" may imply lower expectations for learners with low vision.

4.5.2 Assessment activities given to learners with low vision

The findings highlight various assessment activities employed by teachers for learners with low vision. These activities range from traditional classroom methods to some adapted strategies, reflecting teachers' efforts to integrate inclusive practices while also demonstrating the limitations of these approaches.

Several participants emphasized the use of common classroom activities. For instance, BT1 explained, *"I use reading, listening and answering activities. If it is drawing, I tell learners to do matching."* Similarly, AT6 mentioned using testing activities and exercises after teaching, stating, *"I give testing activities, I give exercises after teaching by writing them on the chalkboard and ask them to read."* These methods primarily rely on verbal and written tasks, which can present challenges for learners with low vision, especially when not adapted for accessibility.

Some teachers incorporated more interactive methods. AT5 shared, *"I give singing, modeling, sorting and identifying different colors and play activities as some of the assessment activities for learners with low vision in my class."* These activities indicate an understanding of the need for multi-sensory learning and assessment strategies. Similarly, BT4 highlighted the use of collaborative assessments, saying, *"I use group work for awarding marks according to learners' group performance."* However, the focus on group performance might overlook individual learning outcomes for learners with low vision.

While some teachers, such as AT4, mentioned using tools like word cards, stating, *"I give them words written on cards for spelling, stories to read and write on the chalkboard,"* there is limited evidence of systematic adaptation for learners with low vision. For example, no participants mentioned using large print, audio materials, or electronic formats, which are considered crucial for inclusive assessment.

The data also indicated a lack of inclusive grading policies, as observed from BT4, who assessed learners based on group performance rather than individual contributions, potentially disadvantaging learners with low vision who may require alternative ways to demonstrate understanding.

4.5.3 Teachers' views on challenges faced in adapting assessment to suit learners with low vision

The findings highlight significant challenges faced by teachers when assessing learners with low vision in inclusive settings. These challenges stem primarily from limited time, high class populations, and the learners' slower pace in understanding and completing tasks.

Time Constraints: Participants indicated that limited time negatively impacts their ability to effectively assess learners with low vision. For example, BT4 explained, *"The time available is too limited for assessing learners with low vision in an inclusive setting."* This suggests that the pace of instruction and assessment often prioritizes the larger class at the expense of individual attention to learners with low vision.

Large class sizes also emerged as a key barrier to effective assessment. BT1 noted, *"High population in the class is an obstacle making it difficult for me to support learners with low vision."* The teacher further elaborated that this necessitated slowing down the pace of teaching and limited their ability to regularly check learners' progress, saying, *"I fail to regularly check books for learners with low vision so as to monitor their progress."* The overcrowded classrooms make it challenging to provide the individualized support necessary for learners with special needs.

The difficulties learners with low vision experience in understanding and completing tasks also frustrate teachers. AT4 stated, *“I get constrained when the performance of learners with low vision is low, when they take time to understand and have difficulties with reading work.”* This highlights the gap between the needs of learners with low vision and the ability of teachers to meet these needs within the current system, further exacerbated by resource and time limitations.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary, conclusions and recommendations on teachers' competences in teaching learners with low vision in inclusive primary schools in Nyondo Sub- County, Mbale district. It includes topics that arose from the goals of the study, the creation of customized lesson plans, and the modification of teaching strategies, instructional materials, and evaluation techniques to accommodate students with low vision. The study was founded on qualitative information gathered from document analysis, classroom lesson observations, and interviews. The four study questions were addressed by the researcher thanks to the data gathered.

5.1 Summary of the Findings

5.1.1 Development of individualized education needs for learners with low vision

5.1.1.1 *Teachers' views on individualized educational needs for learners with low vision*

Teachers stressed that students with low vision have a range of visual talents and need different kinds of treatments to satisfy their individual needs. It has been discovered that placing students near the front of the room improves their visual access to the teaching resources. Teachers also noted that adapted materials, including large print, bright colors, and tactile resources, play a significant role in improving learning outcomes. Oral reinforcement, when used alongside visual aids, helps to support comprehension and reinforces learning for these learners.

5.1.1.2 *Identification of learning needs of learners with low vision*

Teachers indicated that they regularly conduct visual assessments to identify learners' specific needs, such as long-sightedness or short-sightedness. Flexible seating arrangements are used to accommodate learners' changing visual needs, with assistive devices like spectacles playing a crucial role in supporting learners' vision. Additionally, teachers provide direct, hands-on support, especially in tasks like writing, to ensure learners with low vision are able to participate fully in the learning process.

5.1.1.3 *Assessment of learning needs for learners with low vision*

Teachers assess the learning needs of learners with low vision based on their classroom performance, including errors and incomplete exercises. Tailored interventions, such as offering individual corrections during extra sessions, are employed to address specific gaps in learning.

Collaboration with special needs education experts ensures the accuracy of these assessments and the effectiveness of the interventions. Moreover, the involvement of parents and other resource persons contributes to enhancing the intervention strategies.

5.1.1.4 Pupils' responses on identification of learning needs for learners with low vision

Pupils noted that teachers identify their learning needs through observable signs such as incomplete work, errors, or avoidance behaviors. Teachers' strategic seating arrangements help learners improve visibility and focus, and sensitivity to environmental factors like lighting ensures learners' comfort during lessons. Behavioral indicators, such as rubbing eyes or tearing up, were also highlighted by teachers as signs of potential challenges in learners with low vision.

5.1.2 Adaptation of instructional materials for learners with low vision

5.1.2.1 Teachers' opinions on the availability of instructional materials for learners with low vision

Teachers reported that instructional materials for learners with low vision are scarce, and the high cost of specialized resources limits their availability. To address these challenges, teachers often rely on resourceful measures such as borrowing items or using local materials, like banana fibers. Existing materials are adapted by enlarging drawings and text to improve visibility. While textbooks are preferred over charts, as they can be held closer for better viewing, resource shortages often lead to learners and their families contributing materials.

5.1.2.2 Pupils' views on instructional materials used by teachers

Pupils observed inconsistencies in the adaptation of instructional materials, particularly as they progress through grades. Small letters on chalkboards were difficult for learners with low vision to see. Suggestions for improvement included using diagrams instead of small text and incorporating high-contrast colors, with colors like pink, orange, and red considered more visible than white. Maps and visual aids were valued, but pupils stressed the need for better visibility adaptations to ensure they could be effectively used.

5.1.2.3 Responses from teachers on administrators' support

Teachers reported receiving some support from administrators in the form of textbooks, manila cards, and markers. Administrators encourage inclusive teaching practices and sometimes request materials from district offices. Collaboration with NGOs has also helped provide teacher training

and refresher courses. However, teachers indicated a reliance on external interventions rather than systemic solutions to address the shortage of instructional materials.

5.1.2.4 Teachers' views on collaboration

Teachers noted that they often collaborate with local communities to acquire instructional materials. For example, teachers request local resources such as fibers to create materials. Collaboration within grade levels, such as P.3, is also common for adapting materials, such as creating writing charts or making puppets. Teachers often rely on support from parents, administrators, and NGOs to obtain necessary resources. While this collaboration is helpful, it is typically reactive, addressing immediate resource gaps rather than being part of a proactive, systemic approach. Teachers' views on ways of adapting instructional materials To accommodate learners with low vision, teachers use bold letters, large diagrams, and different colors in their instructional materials. They also incorporate tactile learning by allowing learners to touch materials and using textbooks to aid their learning. Despite the challenges of limited resources and time constraints, teachers make a concerted effort to adapt materials to meet the diverse needs of learners.

5.1.2.5 Teachers' views on challenges

Teachers face significant challenges in adapting instructional materials due to a lack of motivation, large class sizes, and limited time to create and adapt materials. Financial limitations also delay the procurement of specialized materials. Teaching learners with low vision is more time-consuming, as additional effort is needed to assist with reading and writing tasks. Teachers also noted attitudinal barriers from sighted learners, which hinder the participation of those with low vision. Moreover, the absence of classroom doors and the removal of materials further disadvantage learners with low vision. Teachers expressed frustration with the lack of institutional and parental support, stressing the need for systemic reforms in inclusive education.

5.1.3 Adaptation of methods of teaching to suit learners with low vision

5.1.3.1 Teachers' views on adaptations of methods of teaching to suit learners with low vision

Teachers use child-centered approaches, group projects, "budding," "think-pair-share," and other participatory techniques to promote active learning for students with low vision. Learning is facilitated by the use of collaborative tactics, such as matching sighted classmates with poor vision learners. In order to provide students with information on assistive technology, seating arrangements, and verbal answers, teachers stressed the necessity of refresher courses.

Teachers also require skills in differentiated instruction to address the individual learning needs of learners with low vision. The use of assistive resources, like audio-visual aids, was considered essential to support these learners. Furthermore, teachers emphasized the importance of collaborating with visual impairment experts and conducting home visits to ensure individualized support for these learners.

5.1.3.2 Teachers' views on challenges experienced during method adaptation

Teachers pointed out a number of difficulties in modifying their teaching strategies for students with limited eyesight. These include sighted classmates' rejection and unfavorable views, which have a detrimental effect on low-vision learners' social integration and self-esteem. Additionally, because they have trouble finishing assignments and have delayed comprehension, students with limited eyesight may grow to have a negative attitude toward learning.

Teachers also expressed feeling unprepared, citing a lack of training on adapting methods for learners with low vision. There was also a need for greater awareness and respect for learners with special needs to combat stigmatization and promote inclusivity. A shortage of resources and insufficient support from school administrators further hindered the ability to meet the specific needs of these learners.

5.1.3.3 Views of learners with low vision on challenges they face during learning

Learners with low vision reported struggling during group work due to missing letters or words, leading to peer blame. They also experienced difficulties in exams when they were unable to see some words or phrases, resulting in missed answers. Fast-paced lessons made it difficult for learners to keep up and absorb information. However, some learners had positive experiences when teachers assisted by reading exam questions aloud. The findings indicated that individualized support through tailored education plans is essential to addressing the specific challenges of learners with low vision.

5.1.3.4 Teachers' responses on methods employed in teaching learners with low vision

Teachers utilized methods such as discussion, question and answer, demonstration, and group work to teach learners with low vision. Multi-sensory and participatory approaches, like "look and say" and "discovery," were used to enhance learning through different senses. Despite the challenges posed by lack of training, insufficient resources, and time constraints, teachers made efforts to implement these adapted methods. Teachers emphasized the need for support from school

administrators, resource mobilization, and ongoing professional development to teach learners with low vision effectively. The use of visual aids, accessible technology, and hands-on activities was deemed crucial to meeting the needs of these learners.

5.1.4 Adaptation of assessment of learning for learners with low vision

5.1.4.1 Teachers' opinions on assessment of learners with low vision

Teachers employed various assessment methods, such as individual oral and written assessments, group participation, and end-of-unit tests, to evaluate learners with low vision. Modifications were made to the assessment tasks, including simplifying content and providing alternative tasks. However, oral exams and performance-based assessments, such as project work, were not widely used, despite their potential benefits for learners with low vision. Some learners faced difficulties in writing, such as missing letters or words, which led teachers to provide simpler tasks and additional support. There is a need for more inclusive assessment methods, including oral exams and performance-based assignments, to address the specific needs of learners with low vision.

5.1.4.2 Assessment activities given to learners with low vision

Teachers primarily relied on classroom activities like reading, listening, answering questions, spelling, writing, and oral questioning as forms of assessment for learners with low vision. Some teachers incorporated alternative activities, such as singing, modeling, identifying colors, and play-based assessments. However, group work was often used for awarding marks based on group performance, and adapted assessments like computer-based tests were not commonly utilized. Students with limited vision were frequently evaluated in the same manner as sighted students, and inclusive grading procedures were also absent. For students with low vision to react to tests successfully, teachers should be encouraged to use accessible resources including large print, electronic formats, and audio recordings.

5.1.4.3 Teachers' views on challenges faced in adapting assessment to suit learners with low vision

Teachers identified several challenges in adapting assessments for learners with low vision. Time constraints were significant, with teachers reporting limited time for individualized assessments. Large class sizes also made it difficult to provide the necessary support for learners with low vision, affecting the quality of assessments. Teachers found it challenging to regularly check and monitor the progress of learners with low vision due to time limitations. Furthermore, inadequate time management skills among teachers hindered effective assessment and support for these learners.

High class populations also prevented teachers from giving personalized attention, which is crucial for inclusive education. Teachers expressed the need for better time management strategies and support to conduct fair and effective assessments for learners with low vision.

Seating plans and spacious classroom arrangements are also critical elements for supporting learners with low vision. As noted in the findings, effective classroom management can help reduce barriers to learning. This is consistent with the broader goal of creating inclusive environments where all learners, regardless of their abilities, can thrive.

5.1.4.3 Teachers' views on challenges experienced during method adaptation

The findings underscore the complex interplay of social, instructional, and physical factors affecting learners with low vision in inclusive settings.

The social stigma and dissatisfaction that can occur in group learning situations are revealed by the experiences that students relate, such as being held accountable by other group members for mistakes or omissions. These exchanges highlight how important it is for educators to encourage empathy and collaboration among students. Participants like AP3 reported pleasant experiences, feeling accepted by their peers. This suggests that inclusive attitudes can greatly enhance the social and educational experiences of students with impaired vision.

The challenges reported by learners, such as struggling to keep up with fast-paced teaching and difficulties with spelling, highlight gaps in instructional strategies. Teachers need to adapt their teaching methods by slowing down the pace of lessons, offering more one-on-one support, and incorporating multisensory teaching aids. These adaptations align with the principles of inclusive education, which emphasize individualized approaches to meet diverse learner needs.

The headaches and "blackouts" that BP3 describes highlight the negative physical effects that conventional teaching and assessment techniques can have on students with limited eyesight. Teachers need to take these difficulties into account by lowering the level of difficulty of visually demanding assignments and including breaks to avoid tiredness. The function of an environment that is supportive: The encouraging stories from students like AP3 and BP2 show how supportive learning environments and unambiguous education may help students with limited vision. These results are consistent with the Convention on the Rights of Persons with Disabilities (CRPD), which promotes inclusive and accessible teaching methods.

To address these challenges, schools and teachers should collaborate with experts in visual impairment to design Individualized Education Plans (IEPs). Training on inclusive teaching

methods, use of assistive technologies, and fostering empathetic classroom dynamics can help ensure that learners with low vision receive equitable support. Additionally, schools should promote awareness among peers to build a more inclusive social environment. In summary, the data underscores the need for a multifaceted approach that addresses both instructional and social dimensions of inclusivity to support learners with low vision effectively.

5.2.3.3. Views of learners with low vision on challenges they face during learning

The findings highlight the critical need for targeted interventions and adaptive practices to support learners with low vision effectively in inclusive settings.

The blame directed at learners with low vision during group work, as noted by AP1, underscores the lack of understanding among peers about the difficulties faced by these learners. This finding aligns with the need for sensitization programs within schools to promote empathy and inclusivity. However, positive experiences like those shared by AP3 reflect the potential for inclusive education to create harmonious and supportive classroom environments when peer relationships are nurtured.

The challenges described by BP4 and BP3, such as difficulty keeping up with fast-paced teaching and the physical strain of intensive tasks, reveal inadequacies in instructional approaches. This highlights the necessity for teachers to adopt differentiated instructional strategies, such as slowing down lessons, providing written and verbal explanations, and using assistive technologies. These adaptations are crucial for addressing both academic and physical barriers.

Learners like BP2 emphasized the value of clear teaching methods, illustrating that small modifications in instructional delivery can significantly impact learners' understanding and performance. This aligns with the principles of Universal Design for Learning (UDL), which advocates for flexible and accessible teaching practices to cater to diverse learner needs.

To address these challenges, schools must invest in capacity-building initiatives for teachers, focusing on adaptive teaching strategies and the use of assistive devices. Collaboration with parents and visual impairment specialists is also essential for developing Individualized Education Plans (IEPs) tailored to the specific needs of learners with low vision. Furthermore, fostering a culture of inclusivity through peer awareness programs can reduce social stigma and enhance group dynamics.

In conclusion, the findings underscore the importance of creating an inclusive learning environment that addresses both the social and instructional needs of learners with low vision, paving the way for their academic and social success.

5.1.4.4 Teachers' responses on methods used when teaching learners with low vision

The discussion supports a variety of teaching strategies to meet the requirements of various learners, which is consistent with Medley's theory of differentiated instruction. Teachers' dedication to inclusive education is demonstrated by their use of interactive approaches. Nonetheless, the constant focus on inadequate resources and training deficits indicates systemic obstacles. For instance, while Participant AT5's tactics, like "discovery, participatory, and experimentation methods," are in line with contemporary pedagogical best practices, systemic limitations and a lack of funding reduce their effectiveness.

The language used in the teachers' narratives highlights an implicit plea for support. Terms like "*I use*" and "*I do*" suggest individual effort, while the absence of collective or institutional collaboration reflects isolation. This discourse suggests the need for systemic changes, such as professional development and collaborative networks, to enable effective adaptation of teaching methods.

The implications of these findings for policy and practice are significant. Empowering teachers with adaptive strategies and resources, such as assistive technologies, would enhance inclusivity. Additionally, targeted training and CPDs focused on multisensory instruction and individualized education plans would bridge the gap between teaching strategies and learners' needs. The discourse thus advocates for a shift from teacher-centered efforts to collaborative, resource-supported frameworks to ensure equity and quality in education for learners with low vision.

5.2.4 Adaptation of assessment of learning for learners with low vision

5.2.4.1 Teachers' opinions on assessment of learners with low vision

The findings suggest that while there are varied practices in assessing learners with low vision, the overall trend is toward adapting assessments to meet the needs of these learners. Teachers who make accommodations, such as providing simpler tasks or remedial lessons, recognize the importance of offering support that ensures learners with low vision can succeed. However, as AT5 and BT4 suggest, these adaptations may inadvertently lower expectations for these learners, positioning them as less capable than their peers. AT5 noted, "Sometimes when I am assessing, I give those with low vision different tasks," which could imply that learners with low vision are being held to a different standard, potentially perpetuating a deficit model of disability.

The approach taken by BT3 reflects the ideal of equality, where all learners are expected to meet the same criteria. However, BT3's statement, "All learners are assessed in the same way through the

use of question and answer technique and using participatory methods," overlooks the individualized needs of learners with low vision. A standardized approach fails to account for the diverse challenges that learners with disabilities face, leading to potential exclusion from fully demonstrating their abilities in assessments (Florian & Black-Hawkins, 2011).

BT1's approach to writing accommodations is indicative of the social model of disability, which focuses on removing barriers that impede learners' participation. BT1's use of bold letters and reduction of workload is beneficial in helping learners with low vision access the curriculum. However, by offering "less work," there is an implicit lowering of academic expectations, which could affect how learners with low vision perceive their own academic capabilities. The use of "less work" is a subtle yet important issue that may reinforce lower expectations and inadvertently limit the learners' potential (Graham, 2005).

The findings further suggest that while there are varied practices in assessing learners with low vision, the overall trend is toward adapting assessments to meet the needs of these learners. Teachers who make accommodations, such as providing simpler tasks or remedial lessons, recognize the importance of offering support that ensures learners with low vision can succeed. However, as AT5 and BT4 suggest, these adaptations may inadvertently lower expectations for these learners, positioning them as less capable than their peers. AT5 noted, "Sometimes when I am assessing, I give those with low vision different tasks," which could imply that learners with low vision are being held to a different standard, potentially perpetuating a deficit model of disability.

In conclusion, the findings suggest that teachers are making significant efforts to accommodate learners with low vision in their assessments, but these efforts need to be carefully considered to ensure that they do not inadvertently reinforce lower expectations or marginalize these learners. Teachers should strive for a balance that ensures equitable access to education while maintaining high standards for all learners.

5.2.4.2 Assessment activities given to learners with low vision

The findings suggest that while teachers employ a variety of assessment methods for learners with low vision, these practices often rely heavily on traditional classroom techniques, which may not adequately meet the needs of these learners.

The reliance on activities such as reading, writing, and unit tests aligns with standard teaching practices but does not sufficiently cater to the specific needs of learners with low vision. For instance, BT1 and AT6 emphasized activities like reading from the chalkboard and answering

questions, which may disadvantage learners with visual impairments if accommodations are not provided. As highlighted by the American Foundation for the Blind (AFB, 2007), adapted assessment methods, including the use of large print or audio materials, are essential for ensuring that these learners can fully participate in assessments.

The absence of inclusive grading policies was evident from the findings. Teachers like BT4, who assessed group performance, did not account for individual challenges faced by learners with low vision. Inclusive grading policies, as emphasized by Paween and Dheeshe (2021), are critical for ensuring fairness in assessments, allowing learners with low vision to be evaluated based on their unique abilities and adaptations rather than being held to the same standards as their peers without disabilities.

The use of participatory and interactive methods, such as those described by AT5, demonstrates the potential for inclusive practices. Activities like singing, modeling, and play can create opportunities for learners with low vision to engage with the curriculum in meaningful ways. However, these methods must be complemented with accessible tools, such as tactile or auditory materials, to ensure full participation. Additionally, the use of digital tools, such as screen readers and computer-based tests, could further enhance assessment practices by providing customized solutions for learners with low vision.

The findings highlight the need for professional development to equip teachers with the knowledge and skills to design and implement inclusive assessment methods. Training in the use of accessible materials, such as electronic formats and audio resources, as well as strategies for adapting traditional assessments, is crucial for improving outcomes for learners with low vision.

5.2.4.3 Teachers' views on challenges faced in adapting assessment to suit learners with low vision

The challenges highlighted in the findings reflect systemic and resource-based constraints in the implementation of inclusive education. Teachers' concerns about time and class size align with research that emphasizes the importance of manageable workloads and sufficient instructional time in inclusive settings. For instance, Mfon et al. (2020) argue that inadequate teacher training in time management and large classroom sizes hinder effective assessment in inclusive classrooms.

The limited time for assessment, as noted by BT4, underscores the need for structured time allocation and planning. Effective assessment of learners with low vision often requires more time for individualized support, feedback, and monitoring. Teachers' frustrations in this regard suggest gaps in professional development on time management. To address this, schools could implement schedules that include dedicated time for one-on-one interaction with learners with low vision.

The BT1 observations highlight the larger issue of excessive student-teacher ratios, which frequently act as a roadblock to inclusive education. The attention a teacher can provide to each student, especially those with special needs, is diminished by large class numbers. As stated in the Convention on the Rights of Persons with Disabilities, inclusive education necessitates individualized attention, which is almost unachievable in packed classrooms, according to Dan et al. (2020). Reducing class sizes and hiring more instructors to promote inclusive education are two ways that governments and educational institutions may combat this.

The emotional and instructional challenges highlighted by AT4 reveal the need for teachers to be equipped with strategies to address the unique needs of learners with low vision. Teachers require training on differentiated instruction and assessments, as well as access to teaching aids such as large-print materials, digital resources, and tactile tools to enhance accessibility for learners with low vision.

5.3 Recommendations

Based on the findings of this study, several recommendations are made to enhance the educational experience of learners with low vision in inclusive settings.

The study found that teachers conduct visual assessments to identify learners with low vision, but the process could be more systematic and timely. It is advised that educators obtain specific training on identifying visual impairments and successful early intervention techniques in order to enhance this procedure. In order to guarantee that students' visual needs are met at an early age, educators should work more closely with families and medical specialists. By doing this, interventions may be put into place quickly, saving the students from experiencing more academic challenges.

The study found that teachers' capacity to effectively help students with impaired vision is impacted by the frequent scarcity and high cost of educational materials. It is advised that educational institutions give top priority to acquiring accessible teaching resources, including Braille materials, big print textbooks, and other assistive technology. Teachers should also be assisted in modifying the materials they use, such as community-contributed or locally-sourced materials. To obtain more funding and guarantee the availability of essential educational resources, schools should collaborate closely with NGOs or government initiatives.

According to the findings, teachers struggle to modify their lesson plans and instructional resources since they have not received enough training. It is advised that continuing professional development courses be created with an emphasis on inclusive teaching methods. These programs ought to give

educators the know-how to fulfill the various requirements of students with low vision by utilizing differentiated instruction, assistive technology, and multisensory approaches. A more inclusive learning environment will be ensured if teachers receive training on how to modify evaluations to meet the requirements of these students.

The study found that assessment methods are not always adapted to the needs of learners with low vision. To address this, it is recommended that schools adopt inclusive assessment practices, such as oral exams and performance-based tasks, to cater to the specific challenges faced by learners with low vision. This will allow learners to demonstrate their understanding in ways that are accessible to them. Additionally, teachers should make use of accessible materials for assessments, such as large print or audio-based formats, ensuring that learners with low vision can fully participate in evaluation activities.

Teachers in the study highlighted the importance of collaboration with administrators, parents, and the community to overcome resource shortages. It is recommended that schools foster stronger collaboration with local communities, parents, and NGOs to provide necessary resources for learners with low vision. Schools should also encourage parental involvement in supporting their children's learning, ensuring that families are actively engaged in addressing the specific needs of their children. This collective effort can help address resource gaps and promote a more inclusive school culture.

5.4 Conclusions

This study aimed to explore the knowledge, skills, and attitudes of teachers in adapting teaching methods, instructional materials, and assessment strategies for learners with low vision in inclusive classroom settings. The conclusions drawn from the findings directly address the research questions raised at the beginning of the study, as outlined below.

Teachers have a basic understanding of the need for tailored help for students with impaired vision, according to the study. They show that they understand the various needs of these students and use techniques like visual evaluations, seating plans, and practical assistance to meet those needs. It was less clear, though, how these tactics could be formally included into thorough Individualized Education Plans (IEPs). Instead of using official IEPs to address the needs of students with impaired vision, teachers frequently rely on informal approaches.

While their general awareness of individualized support is strong, their ability to develop formal IEPs is limited due to a lack of training and support. Therefore, to effectively meet the needs of

learners with low vision, teachers would benefit from training on how to develop and implement IEPs in a structured and consistent manner.

Regarding altering current resources to accommodate students with low vision, the study found that teachers are generally proficient in doing so. To aid in the learning process, teachers frequently expand texts, employ colors with strong contrast, and include tactile aspects. Despite their inventiveness, teachers' capacity to adequately address the needs of students with low vision is limited by the substantial obstacles in the accessibility and availability of educational resources. Teachers often rely on local materials or borrow resources, but systemic shortages persist. The findings suggest that while teachers show competence, their efforts could be further enhanced by increasing the availability of specialized instructional materials and providing more training in material adaptation techniques.

In order to support students with limited vision, teachers employ a variety of instructional strategies and skills, most of which are successful. Teachers often engage students with low vision through collaborative and participatory strategies like group work, "think-pair-share," and child-centered approaches. Furthermore, students with limited vision can more easily access learning materials when paired with sighted peers and using multisensory approaches.

However, the study also highlighted challenges in implementing these strategies consistently, particularly due to large class sizes and a lack of specialized training. Teachers would benefit from additional professional development in differentiated instruction, including strategies for managing diverse classroom needs and using assistive technologies. Structured support in these areas will ensure that all learners, particularly those with low vision, benefit from effective and inclusive teaching methods.

Regarding assessment, teachers use a variety of methods, including oral and written assessments, group participation, and informal questioning. However, the study revealed that these assessments are often not fully adapted to meet the needs of learners with low vision. Teachers often face challenges in providing individualized assessments due to time constraints, large class sizes, and the lack of alternative assessment tools such as oral exams or performance-based assessments. The high demands of inclusive classrooms also made it difficult for teachers to effectively monitor students' academic progress. Teachers are dedicated to evaluating their students, but they require additional resources and training to create inclusive evaluation procedures. Guidance on how to modify tests for students with limited vision, including the use of alternate formats like audio or tactile-based exams, would be especially helpful to teachers.

In conclusion, while teachers demonstrate a commitment to supporting learners with low vision in inclusive classrooms, the study highlights several areas for improvement. Teachers need further training in developing formal IEPs, adapting instructional materials, utilizing differentiated instructional strategies, and implementing inclusive assessment methods. Increased resource provision, as well as professional development in inclusive education, would equip teachers with the necessary skills and knowledge to create more effective and supportive learning environments for learners with low vision. Addressing these needs will ultimately contribute to the academic success and inclusion of learners with low vision in mainstream classrooms.

5.5 Suggestions for Future Research

Future research on inclusive education for learners with low vision could explore several key areas to further enhance educational practices;

1. One area of focus could be the impact of assistive technologies on the learning outcomes of learners with low vision. Future studies could examine the effectiveness of tools like screen readers, magnification devices, and audio-based learning aids in improving academic performance. Research could also investigate how the integration of these technologies influences the classroom experience of learners with low vision.
2. Studies that follow the academic development of students with low vision over time would yield important information on the long-term impacts of resource provision, inclusive teaching methods, and modified tests. Such studies could yield evidence to inform future educational strategies and assist in identifying the treatments that have the greatest long-term effects on students' progress.
3. Research could further explore teacher preparedness and confidence in implementing inclusive practices, specifically looking at how teacher training programs influence their ability to adapt teaching methods and materials for learners with low vision. This would help identify the best strategies for equipping teachers to meet the diverse needs of their learners and ensure the sustainability of inclusive education practices.
4. Another valuable area of research could involve exploring the role of parents and the broader community in supporting the education of learners with low vision. Understanding how families and local communities can assist in providing resources and emotional support would be beneficial for developing more effective community engagement strategies. This would help foster a supportive environment for learners with low vision both in and out of the classroom.

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APPENDICES

APPENDIX I: TIME BUDGET FOR THE STUDY

S/N	ACTIVITY	PERIOD
1.	Topic identification and approval	April 2022
2.	Writing of research proposal	September 2022 to December 2022
3	Research proposal defense	November 2022
4	Collection of data	January 2023
5	Writing research report	February to March 2023
6	Submission of research report	April 2023
7	Defense of the project report	September 2023
8	Submission of the thesis	August 2025

APPENDIX II: INTERVIEW GUIDE FOR TEACHERS

A: BIOGRAPHICAL DATA

S/N	Description Of Data	Status
1	Sex	
2	Age	
3	Level of Education and qualifications	
4	Any short training course attended	
5	Teaching Experience	

B: DEVELOPMENT OF INDIVIDUALISED EDUCATION PLANS FOR LEARNERS WITH LOW VISION IN AN INCLUSIVE SETTING

1. What are the different individualized learners' needs for Learners with Low Vision in your inclusive class?

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2. How do you identify learning needs for Learners with Low Vision in your class?

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- (b) How do you assess learning needs for Learners with Low Vision in your class?

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.....

C: ADAPTATION OF INSTRUCTIONAL MATERIALS FOR LEARNERS WITH LOW VISION IN INCLUSIVE SETTINGS

3. What can you say about the availability of the instructional materials for Learners with Low Vision in your classroom?

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4. In which ways do school administrators support you in adapting instructional materials to meet needs of Learners with Low Vision?

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5. How do you collaborate with other stakeholders in adapting instructional materials to meet needs of Learners with Low Vision?

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6. What ways do you adapt instructional materials in order to address needs for Learners with Low Vision?

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7. What challenges do you face while adapting instructional materials for Learners with Low Vision?

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D: ADAPTATIONS ON METHODS OF TEACHING FOR LEARNERS WITH LOW VISION IN AN INCLUSIVE SETTING

8. What adaptations do you make on methods of teaching Learners with Low Vision in your class?

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.....
9. What challenges do you face while adapting methods of teaching to meet the needs of Learners with Learners Vision?

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10. What are your concerns when selecting methods for teaching Learners with Low Vision in an inclusive setting?

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11. Which methods of teaching do you employ in teaching learners with low vision in an inclusive setting and why?

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E: ADAPTATIONS OF ASSESSMENT OF LEARNING FOR LEARNERS WITH LOW VISION IN AN INCLUSIVE SETTING

12. What can you say about assessment of learning for learners with low vision in your class?

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13. Which assessment activities can you give learners with low vision in your class?

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14. How do you assess the learning for learners with low vision in an inclusive setting?

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15. What challenges do you face while assessing learning for learners with low vision in your school?

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16. What do you think should be done to address the above challenges?

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THANK YOU VERY MUCH

APPENDIX III: INTERVIEW GUIDE FOR PUPILS

A: BIOGRAPHICAL DATA

S/N	Description of Data	Status
1	Sex	
2	Age	
3	Level of Education (Class)	
4	Responsibility held at school	

B: DEVELOPMENT OF INDIVIDUALISED EDUCATION PLANS FOR LEARNERS WITH LOW VISION IN AN INCLUSIVE SETTING

1. What are the learning needs for Learners with Low Vision in your class?

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2. How do teachers find out learning needs for Learners with Low Vision in your class?

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C: ADAPTATION OF INSTRUCTIONAL MATERIALS FOR LEARNERS WITH LOW VISION IN AN INCLUSIVE SETTING

3. Mention something on materials used by teachers to promote your learning in class?

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.....

4. Which people work with teachers in making instructional materials for your learning?

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5. How do teachers transform instructional materials to meet your needs?

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.....

6. What challenges do you face while using adapted instructional materials to learn?

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.....

D: ADAPTATIONS ON METHODS OF TEACHING FOR LEARNERS WITH LOW VISION IN AN INCLUSIVE SETTING

7. How do teachers conduct teaching in your class?

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8. What challenges do you face while interacting with other members in your class?

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9. What do you think should be done to improve on methods used for teaching to make Learners with Low Vision happy?

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E: ADAPTATIONS ON ASSESSMENT OF LEARNING FOR LEARNERS WITH LOW VISION IN AN INCLUSIVE SETTING

10. What can you say on the way teachers assess your learning in class?

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11. Which assessment activities are you given by teachers in your class?

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12. Other than written exams, how else are you assessed by teachers in your class?

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13. What challenges do you face during assessment in your class?

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14. What do you think should be done to address the above challenges?

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.....

THANK YOU VERY MUCH

APPENDIX IV: CLASSROOM OBSERVATION CHECKLIST

1. DEVELOPING INDIVIDUALIZED EDUCATION PLANS TO SUIT LEARNERS WITH LOW VISION IN AN INCLUSIVE SETTING

- i. Teacher's assessment of individualized learner's needs
- ii. Collaboration between teachers and learners in class
- iii. Goal setting

1. TEACHERS' ADAPTATIONS ON INSTRUCTIONAL MATERIALS USED IN TEACHING LEARNERS WITH LOW VISION IN INCLUSIVE SETTINGS

- i. Evidence of material adaptation
- ii. Sitting arrangement
- iii. Use of instructional materials for teaching
- iv. Availability of assistive devices for learners
- v. Variety of instructional materials
- vi. Teachers' knowledge on adaptation of instructional materials

2. TEACHERS' ADAPTATIONS IN METHODS OF TEACHING FOR LEARNERS WITH LOW VISION IN AN INCLUSIVE SETTING

- i. Nature of methods of teaching
- ii. Variety of methods of teaching
- iii. Teachers' attitude towards learners with low vision
- iv. Methods of Modification
- v. Teacher pupil relationship
- vi. Learner support
- vii. Time on task
- viii. Content modification

3. ADAPTATIONS ON THE ASSESSMENT OF LEARNING NEEDS FOR LEARNERS WITH LOW VISION IN AN INCLUSIVE SETTING

- i. Assessment Records for Learners with Low Vision
- ii. Forms of assessment activities

- iii. Engagement of learners with low vision
- iv. Caring and inclusiveness
- v. Time of assessment

GENERAL COMMENTS

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APPENDIX V: INFORMATION SHEET

INFORMATION SHEET

Title of study: Teachers' Competences in Teaching Learners with Low Vision in Inclusive Primary Schools in Nyondo Sub-County in Mbale District.

Principal investigator: Nadunga Beatrice (sr)

Institution: Kyambogo University.

Introduction

I am a Master of Education students at the above mentioned University. I am carrying out a research on "*Teachers' Competences in Teaching Learners with Low Vision in Inclusive Primary Schools in Nyondo Sub-County in Mbale District*". I wish to explore teachers' development on individualized education plans, adaptation of instructional materials, teaching and assessing methods to suit learners with low vision. Since your primary school embraces inclusive education, the researcher intends to collect views from teachers and pupils with low vision pertaining teachers' competences in teaching learners with low vision.

Purpose of this research study;

This study is aimed at finding out teachers' competences in teaching learners with low vision in inclusive primary schools in Nyondo Sub-County, Mbale district.

Procedure;

In this study the researcher wishes to collect data from 22 participants. The researcher will collect data from teachers and learners with low vision using interviews and observation guides. The researcher will also analyze teachers' schemes of work and lesson plans and observe lessons in the classroom. The information given will be used for study purposes only.

Possible risks or benefits;

There is no risk involved in this study except using a few minutes of the teachers' busy schedules during the interviews and lesson observations in classrooms. There is also no direct benefit to you. However, the research findings will be shared with the participated and may help in reflecting on constructive practices that may improve teacher competences in teaching learners with low vision.

Right of Refusal to Participate and Withdrawal;

You are free to choose to participate in the study. You may refuse to participate without any loss of benefit which you are otherwise entitled to.

You may also withdraw at any time from the study without any adverse effect on management of your school or any loss of benefit which you are otherwise entitled to. You may also refuse to answer some or all the questions if you don't feel comfortable with the questions.

Confidentiality;

The information obtained from your school will remain confidential. Nobody except the principal investigator will have an access to it. The name and identity of your school and learners will also not be disclosed at any time. However, the data may be seen by Ethical review committee and may be published in a journal and elsewhere without giving your name or disclosing your identity.

Authorization;

You will be asked to sign a consent form to indicate your voluntary participation. You will receive a copy of the form. Your consent does not take away any legal rights in the case of negligence or other legal fault of anyone who is involved in this study. Nothing in the consent form is intended to replace any applicable national, state or local laws.

Available Sources of Information

For further questions, you may contact the Principal investigator: Nadunga Beatrice (sr) Phone Number: +256772531649

In the unlikely event of a breach of ethics or any other emerging issues, inform Dr. Stackus Okwaput, Head of Department, Masters' program, Kyambogo University, Special Needs Department P.O Box 1 Kyambogo