



**The effect of Teachers' Approaches on the
Learning Outcomes of Children with Low Vision
in Selected School in Nyagatare District**

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**RESEARCH SUBMITTED IN PARTIAL FULFILLMENT OF THE DEGREE OF
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DECLARATION

I, UWIRINGIYIMANA Pacifique, declare that this research study titled "The Effect of teachers' approaches on the Learning Outcomes of Children with Low Vision in Selected Schools in Nyagatare District" is my own original work and has not been submitted for any other degree or qualification. I confirm that all sources used have been appropriately acknowledged and referenced.

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DEDICATION

This research is dedicated to the resilient children with low vision in Nyagatare District, their families, and the dedicated teachers who strive to create inclusive learning environments. May this research contribute to a brighter future where all children can reach their full potential.

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ABSTRACT

This mixed-methods study investigates the effect of teachers' approaches on the learning outcomes of children with low vision in Nyagatare District, Rwanda. The research specifically explores the effectiveness of inclusive teaching strategies, teacher-student interactions and the availability and utilization of assistive technologies. Conducted at G.S. Rwisirabo, the study involved 18 teachers and 13 students with low vision. Data was collected through questionnaires, interviews, and classroom observations, and analyzed using both quantitative and qualitative techniques.

The study revealed a significant lack of assistive devices and technologies in the school, with limited utilization of available resources due to insufficient training. The research also highlighted the positive impact of teacher training programs on teachers' understanding of visual impairments and their ability to implement effective teaching strategies. However, teachers expressed a desire for more in-depth and ongoing training, particularly in the use of assistive technologies and curriculum adaptation. The study concludes that while current training programs have made a significant positive impact, there is a need for continuous professional development to further enhance teachers' capabilities in supporting students with low vision.

To address the identified gaps, the study recommends increasing the availability of assistive devices and technologies, providing regular and comprehensive teacher training programs, and encouraging collaboration among teachers and specialists. These measures, along with advocating for policy changes at the educational system level, can enhance the learning experience and academic success of students with visual impairments.

CHAPTER ONE

GENERAL INTRODUCTION

1.0 Introduction

This chapter aims at providing the background to the study, problem statement, objectives of the study, research questions, significance of the study, delimitations and limitations of the study, assumptions, theoretical framework and conceptual framework and operational definition of terms.

1.1 Background to the Study

Low vision, a visual impairment not fully correctable by conventional means, poses significant challenges to children's education and daily lives (World Health Organization, 2019). Globally, millions are affected, with a higher prevalence in low- and middle-income countries. You should start by USA, Europe, Africa and then Rwanda. In Rwanda, the prevalence of low vision among children is a notable concern, with limited access to eye care services and assistive devices (Rwanda National Eye Health Survey, 2017).

In East Africa, low vision is a pressing issue affecting millions, particularly children and youth (East Africa Community (EAC) Vision 2050, 2016). Refractive errors, congenital cataracts, albinism, and corneal opacity are major causes. While the EAC advocates for inclusive education, implementation faces challenges due to a lack of qualified teachers, resources, and infrastructure (EAC, 2012; World Vision International, 2021; UNICEF, 2020). Teachers' approaches are crucial in determining the learning outcomes of children with low vision.

Research on the effect of teachers' approaches on learning outcomes for children with low vision in East Africa is limited. Existing studies primarily focus on challenges and barriers rather than effective practices (Habarugira, 2015; Niyibizi, 2016; Uwamahoro, 2018; Rukwaro, 2015).

In Kenya, for instance, a study by Yalo et al. (2012) revealed that teachers in special schools for the visually impaired lacked adequate training and resources to support learners with low vision effectively. Similarly, Odero (2009) found that most primary school teachers in Ngong, Kenya, lacked training in special needs education, hindering their ability to identify and support visually impaired learners. These studies underscore the need for comprehensive teacher training and resource allocation to ensure inclusive education for children with low vision in East Africa.

Children with low vision encounter various obstacles in accessing quality education, despite Rwanda's commitment to inclusive education. These barriers include a lack of qualified teachers, insufficient resources, and inadequate infrastructure (World Vision International, 2021; UNICEF, 2020). The quality of education and learning outcomes for these children are significantly influenced by teachers' approaches, encompassing inclusive teaching strategies, teacher-student interactions, communication methods, and the availability and utilization of assistive technologies (Abner & Lahm, 2002; Corn & Koenig, 1996; Kuyini & Desai, 2007; Sharma & Deppeler, 2005).

In Rwanda, the Ministry of Education has made strides in promoting inclusive education through policy frameworks and initiatives (Ministry of Education, Rwanda, 2018). However, challenges persist in translating these policies into practice, particularly in rural and under-resourced areas like Nyagatare District. A study by the Rwanda Union of the Blind (RUB, 2015) found that teachers in Nyagatare District lacked the necessary skills and knowledge to effectively teach children with visual impairments. The study also highlighted the limited availability of assistive devices and adapted learning materials in schools.

This lack of specialized training and resources has hindered the effective implementation of inclusive practices for children with low vision in the district. Additionally, societal attitudes and stigma surrounding disability can create barriers to inclusion, leading to social isolation and discrimination against children with low vision (RUB, 2015).

In this context, this study aims to investigate the effect of teachers' approaches on the learning outcomes of children with low vision in G.S. Rwisirabo, in Nyagatare District. By examining the specific strategies employed by teachers, the study seeks to identify effective practices that can

be replicated and scaled up to improve the educational experiences and outcomes of these children. The research will also explore the challenges faced by teachers in implementing inclusive education for children with low vision, providing insights into the barriers that need to be addressed at the school, district, and national levels.

1.2 Statement of the Problem

The ideal situation in education is one where all learners, regardless of their abilities or disabilities, have equitable access to quality education and can achieve their full potential . This aligns with Rwanda's commitment to inclusive education, as outlined in various policy documents such as the Special Needs and Inclusive Education Policy (2018) and the Education Sector Strategic Plan (2018/19-2023/24). However, the current situation for children with low vision in Nyagatare District reveals a significant gap between this ideal and the reality on the ground.

Despite policy advancements, children with low vision in Nyagatare District continue to face numerous challenges in accessing quality education. These challenges include: **Limited Teacher Knowledge and Skills:** Many teachers lack the specialized knowledge and skills necessary to effectively teach and support learners with low vision. This can result in inappropriate teaching methods, lack of individualized support, and limited use of assistive technologies, hindering students' learning and participation. **Inadequate Resources and Infrastructure:** Schools in the district often lack the necessary resources, such as adapted learning materials, assistive devices, and accessible infrastructure, to cater to the specific needs of learners with low vision. This lack of resources can create barriers to learning and limit students' ability to fully participate in classroom activities. **Negative Attitudes and Stigma:** Negative attitudes and stigma surrounding disability can create a hostile learning environment for children with low vision, leading to social isolation, discrimination, and low self-esteem. These factors can further exacerbate the challenges they face in accessing and succeeding in education.

The consequences of these challenges are significant. Children with low vision in Nyagatare District often experience lower academic achievement, limited social participation, and reduced overall well-being compared to their sighted peers. This not only affects their individual development but also has broader implications for the community and the nation as a whole.

This research aims to address this problem by investigating the effect of teachers' approaches on the learning outcomes of children with low vision in selected schools in Nyagatare District. By identifying effective teacher practices, challenges, and areas for improvement, this study will provide valuable insights and recommendations to bridge the gap between the ideal of inclusive education and the current reality for children with low vision in the district. The findings will inform the development of targeted interventions, teacher training programs, and policy reforms that can enhance the educational experiences and outcomes of these children, ultimately contributing to a more inclusive and equitable education system in Rwanda.

1.3 Objectives of the study

1.3.1 General objective of the study

The general objective of this research is to assess the overall effect of teachers' approaches on the learning outcomes of children with low vision in selected schools in Nyagatare District, Rwanda.

1.3.2 Specific Objectives

The following specific objectives have been identified to guide this research:

1. To investigate the effectiveness of inclusive teaching strategies implemented by teachers in supporting the learning outcomes of children with low vision.
2. To explore the impact of teacher-student interactions and communication methods on the learning outcomes of children with low vision.
3. To assess the availability and utilization of assistive devices and technologies by teachers to enhance the learning outcomes of children with low vision.

1.4 Research Questions

1. To what extent do inclusive teaching strategies implemented by teachers in G.S. Rwisirabo effectively support the learning outcomes of children with low vision?

2. How do teacher-student interactions and communication methods impact the learning outcomes of children with low vision.?
3. What is the availability and utilization of assistive devices and technologies used by teachers to enhance the learning outcomes of children with low vision?

1.5 Significance of the Study

The significance of this study is multifaceted, addressing a critical gap in understanding how teachers' approaches influence the learning outcomes of children with low vision in Rwanda, particularly in under-resourced areas like Nyagatare District. By examining the effectiveness of inclusive teaching strategies, teacher-student interactions, and the use of assistive technologies, this research provides valuable insights into the factors that contribute to successful low vision education. The findings will inform evidence-based recommendations for various stakeholders:

Policymakers: The research will offer insights to inform policy development and refinement regarding inclusive education, resource allocation, teacher training, and infrastructure development, aligning with Rwanda's commitment to inclusive education and the UN's Sustainable Development Goal 4.

Educators: The study will provide practical recommendations on effective inclusive teaching strategies, communication methods, and assistive technology utilization, enabling educators to better meet the needs of learners with low vision and create inclusive classrooms.

Stakeholders: The research will benefit parents, NGOs, and organizations by raising awareness, advocating for increased support, and informing the development of community-based interventions that enhance the overall well-being of children with low vision.

By bridging the gap in understanding and offering actionable recommendations, this study has the potential to drive positive change in the education system, fostering a more inclusive and equitable learning environment where children with low vision can thrive and reach their full potential.

1.6 Assumptions of the Study

The following assumptions guide this study:

Teachers and Students are Representative: The teachers and students participating in this study are assumed to be representative of the broader population of teachers and students in schools with children with low vision in Nyagatare District.

Honesty and Reliability of Responses: It is assumed that the participants will provide honest and accurate responses to the questionnaires and interviews.

Validity and Reliability of Measures: The research instruments used to assess teacher approaches and student learning outcomes are assumed to be valid and reliable.

Consistency of Teacher Approaches: The teachers' approaches are assumed to be relatively consistent across the selected schools in Nyagatare District.

Influence of Teacher Training: It is assumed that teacher training and professional development programs influence teachers' ability to support students with low vision effectively.

Multiple Factors Influencing Learning Outcomes: The learning outcomes of children with low vision are assumed to be influenced by various factors, including teacher approaches, individual characteristics, family background, school environment, and social support.

1.7 Delimitations and Limitations of the Study

1.7.1 Delimitations

This study is delimited to G.S. Rwisirabo, in Nyagatare District due to its established inclusive framework, prior involvement in inclusive education projects, and recognition as a model inclusive school. These factors make it an ideal setting to investigate the research questions and generate findings that can be applied to other schools facing similar challenges in inclusive education. The focus is on students with low vision and their teachers. The study will not include students with other disabilities.

1.7.2 Limitations

The study acknowledges the following limitations:

Sampling: The use of convenience sampling may limit the generalizability of the findings to other schools and districts in Rwanda.

Self-Reported Data: The reliance on self-reported data from questionnaires and interviews may introduce some bias.

Resource Constraints: Limited resources may restrict the scope and depth of data collection and analysis.

Addressing the Limitations

The researcher aims to mitigate these limitations and enhance the value of the study through the following strategies:

Convenience Sampling: While acknowledging the limited generalizability, the study focuses on G.S. Rwisirabo, a model inclusive school, to conduct an in-depth exploration within a specific context. The findings, though not universally applicable, can offer valuable insights that inform future research and interventions in similar settings. The researcher also suggests future studies that employ more representative sampling techniques to enhance generalizability.

Self-Reported Data: The potential for bias in self-reported data is addressed through triangulation, combining it with classroom observations and document analysis. This approach provides a more comprehensive understanding, reducing the impact of bias. The potential for bias is also acknowledged in the limitations section, along with a discussion of its potential effects on the interpretation of findings.

Resource Constraints: The limitations imposed by resource constraints are managed by focusing on specific research questions and utilizing cost-effective data collection methods. Collaboration with other researchers or organizations is also considered to access additional resources and expertise. The resource constraints are transparently acknowledged in the limitations section, along with a discussion of their potential influence on the research design and findings.

Despite these limitations, the study aims to provide valuable insights into the effect of teachers' approaches on the learning outcomes of children with low vision in Nyagatare District. The findings will be used to inform recommendations for improving educational practices and policies for this population. By acknowledging the limitations and employing strategies to

mitigate their impact, the researcher enhances the study's credibility and ensures that the findings contribute meaningfully to the field of inclusive education.

1.8 Theoretical Framework

This study is grounded in two primary theoretical frameworks: Vygotsky's sociocultural theory (1978) and Bronfenbrenner's ecological systems theory (1979). These theories provide a comprehensive lens for understanding the multifaceted factors that influence the learning outcomes of children with low vision.

Vygotsky's Sociocultural Theory (1978)

Vygotsky's theory emphasizes the crucial role of social interaction and cultural context in cognitive development [Vygotsky, 1978]. It posits that learning occurs through social interactions with more knowledgeable others, such as teachers and peers. The zone of proximal development (ZPD) is a key concept, representing the gap between what a learner can do independently and what they can achieve with guidance and support. For children with low vision, this theory highlights the importance of teachers' approaches in scaffolding their learning, providing appropriate challenges, and fostering a collaborative learning environment [Vygotsky, 1978].

How Vygotsky's Theory Applies to the Study

Teacher-Student Interactions: The quality of teacher-student interactions, including the use of language, questioning techniques, and feedback, can significantly impact the learning outcomes of children with low vision [Florian, 2015]. Teachers who create a supportive and interactive learning environment, where students feel comfortable asking questions and seeking help, can facilitate their cognitive development and academic achievement.

Collaborative Learning: Collaborative learning activities, where students with low vision work together with their peers, can provide opportunities for them to learn from each other, share knowledge, and develop social skills [Johnson & Johnson, 1999]. Teachers can foster

collaborative learning by designing group activities that cater to the diverse needs of all learners, including those with low vision.

Scaffolding: Teachers can use scaffolding techniques, such as providing visual aids, tactile materials, and verbal descriptions, to support the learning of children with low vision [Vygotsky, 1978]. By gradually reducing the level of support as students gain mastery, teachers can help them move through their ZPD and achieve higher levels of independence and competence.

Bronfenbrenner's Ecological Systems Theory (1979)

Bronfenbrenner's theory emphasizes the interconnectedness of various environmental systems that influence a child's development [Bronfenbrenner, 1979]. These systems include the microsystem (immediate environment, such as family and school), mesosystem (connections between microsystems), exosystem (indirect environments, such as the community and social services), macrosystem (cultural context and societal values), and chronosystem (changes over time). For children with low vision, this theory highlights the importance of considering the broader ecological context in which their learning occurs.

How Bronfenbrenner's Theory Applies to the Study

School Environment: The school environment, including the physical layout, availability of resources, and school culture, can significantly impact the learning outcomes of children with low vision [Mushoriwa, 2001; Wall, 2002]. Teachers who create an inclusive and accessible learning environment, where students with low vision feel safe, supported, and valued, can enhance their academic achievement and social-emotional well-being.

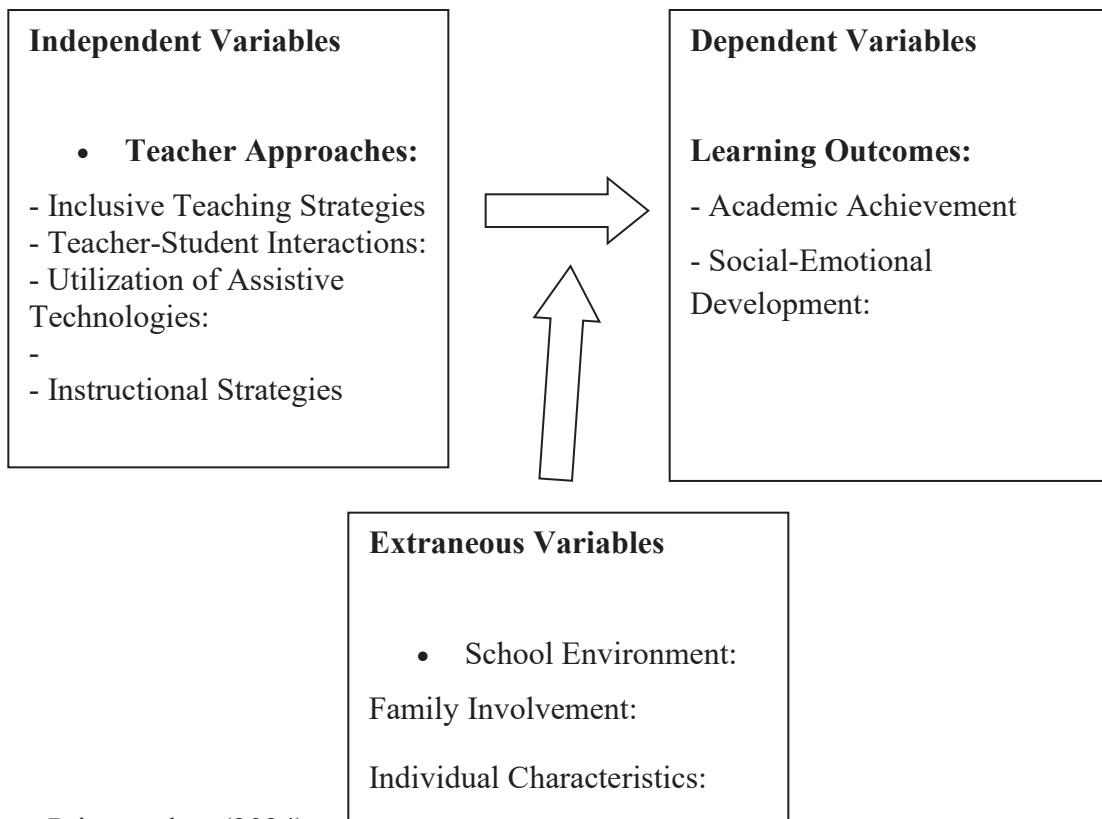
Family Involvement: Family involvement in the education of children with low vision is crucial for their success [Simon et al., 2010]. Teachers who establish strong partnerships with families, communicate regularly about students' progress, and involve them in decision-making can create a supportive home-school connection that benefits students' learning and development.

Community and Social Services: The availability and accessibility of community and social services, such as vision rehabilitation, counseling, and support groups, can play a vital role in the overall well-being and development of children with low vision. Teachers who are aware of and

connect students and families to these resources can enhance their quality of life and educational opportunities.

By integrating Vygotsky's sociocultural theory and Bronfenbrenner's ecological systems theory, this study provides a comprehensive framework for understanding the complex interplay of factors that influence the learning outcomes of children with low vision. The study's findings will contribute to the development of evidence-based practices and policies that promote inclusive education and empower children with low vision to reach their full potential.

1.9 Conceptual Framework



Source: Primary data (2024)

The conceptual framework for this study illustrates the relationship between teachers' approaches and the learning outcomes of children with low vision, considering the influence of various moderating factors.

Independent Variables

Teacher Approaches:

Inclusive Teaching Strategies: Differentiated instruction, multi-sensory techniques, collaborative learning, and individualized support (Miles, 2003; Norwich, 2014a).

Teacher-Student Interactions: Effective communication, positive reinforcement, and emotional support (Hess, 2010; Yalo et al., 2012).

Utilization of Assistive Technologies: Availability and use of magnifiers, large print materials, screen readers, etc. (Koehler & Wild, 2019; Santos, 2017).

Instructional Strategies: Specific methods and techniques used to teach academic content to children with low vision (Klingenberg et al., 2019).

Dependent Variables

Learning Outcomes:

Academic Achievement: Performance in core subjects like literacy, mathematics, and science (De Verdier & Ek, 2014; Klingenberg et al., 2019).

Social-Emotional Development: Social skills, self-esteem, and overall well-being (Haegele & Zhu, 2017; Jessup et al., 2017).

Extraneous Variables

School Environment: Physical layout, resources, and school culture (Mushoriwa, 2001; Wall, 2002).

Family Involvement: Support and engagement from families (Odero, 2009; Simon et al., 2010).

Individual Characteristics: Degree of visual impairment, age of onset, other disabilities (Klingenberg et al., 2020; Lieberman et al., 2006).

The framework posits that teacher approaches (independent variables) directly influence the learning outcomes (dependent variables) of children with low vision. However, this relationship is moderated by extraneous variables such as the school environment, family involvement, and individual student characteristics. Understanding these complex interactions is crucial for developing effective interventions and policies to enhance the educational experiences of children with low vision.

1.10 Operational definition of terms

Low Vision: In this study, low vision is operationally defined as visual acuity between 20/70 and 20/400, or a visual field of 20 degrees or less, as measured by a standard visual acuity chart and visual field test.

Teachers' Approaches includes inclusive teaching strategies, teacher-student interactions, communication methods, and the use of assistive devices and technologies (Kraft & Dougherty, 2013). In this study, teacher approaches are measured through classroom observations, teacher interviews, and student surveys.

Learning Outcomes: The academic and social-emotional achievements of children with low vision, including academic performance, social skills, self-esteem, and overall well-being (Xiao et al., 2023). Learning outcomes are assessed through standardized academic tests, social-emotional assessments, and teacher ratings.

Inclusive Teaching Strategies is an instructional approaches that cater to the diverse learning needs of all students, including those with low vision, by providing differentiated instruction, multi-sensory activities, and individualized support (Miles, 2003; Norwich, 2014a). In this study, inclusive teaching strategies are observed and evaluated based on their alignment with the principles of Universal Design for Learning (UDL) and their effectiveness in promoting the participation and engagement of children with low vision.

Teacher-Student Interactions: The quality of communication and relationships between teachers and students with low vision, including verbal and nonverbal communication, feedback, and emotional support (Diloyan, 2017; Terzi & Celik, 2005). Teacher-student interactions are assessed through classroom observations, focusing on the frequency and nature of interactions, as well as student and teacher perceptions of the relationship.

Assistive Devices and Technologies are tools and equipment that enhance the learning and independence of children with low vision, such as magnifiers, large print materials, screen readers, and tactile graphics (Koehler & Wild, 2019). The availability, accessibility, and utilization of assistive devices and technologies are assessed through school surveys and teacher interviews.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter delves into the existing body of knowledge concerning the effect of teachers' approaches on the learning outcomes of children with low vision. It critically examines relevant literature to identify established practices, emerging trends, and research gaps in the field. The chapter is structured around the specific objectives of this study, exploring the effectiveness of inclusive teaching strategies, the impact of teacher-student interactions, the availability and utilization of assistive technologies,

. By synthesizing and analyzing the existing literature, this chapter aims to provide a comprehensive overview of the current state of knowledge and set the stage for the empirical investigation conducted in this study.

2.1 The Effectiveness of Inclusive Teaching Strategies Implemented by Teachers in Supporting the Learning Outcomes of Children with Low Vision

Inclusive teaching strategies are crucial for creating equitable learning environments for students with low vision. These strategies aim to address the diverse learning needs of all students by providing multiple means of representation, engagement, and expression (CAST, 2022). Research has shown that effective inclusive teaching strategies can significantly improve the academic achievement and social-emotional development of children with low vision (Miles, 2003).

One key aspect of inclusive teaching is differentiated instruction, which involves tailoring instruction to meet the individual needs of each student. For students with low vision, this may include providing materials in alternative formats, such as large print or braille, using visual aids and tactile materials, and adjusting the pace and complexity of instruction (Miles, 2003). Studies have shown that differentiated instruction can improve the reading comprehension and fluency of students with low vision (Barraga et al., 1996; Koenig & Holbrook, 1995).

Another important inclusive teaching strategy is multi-sensory learning, which involves engaging multiple senses in the learning process. For students with low vision, this may include using tactile materials, auditory cues, and kinesthetic activities (Corn & Koenig, 1996). Research has shown that multi-sensory learning can improve the understanding and retention of information for students with low vision (Klingenberg et al., 2020).

Collaborative learning is another effective inclusive teaching strategy that can benefit students with low vision. By working together with their peers, students with low vision can learn from each other, share knowledge, and develop social skills (Johnson & Johnson, 1999). Teachers can facilitate collaborative learning by creating a supportive and inclusive classroom environment where all students feel valued and respected (Florian, 2015).

In addition to these specific strategies, teachers can also create a more inclusive learning environment by using universal design for learning (UDL) principles. UDL is a framework for designing learning environments that are accessible and equitable for all learners (CAST, 2022). By incorporating UDL principles into their teaching, teachers can create a more flexible and adaptable learning environment that can accommodate the diverse needs of students with low vision.

However, the implementation of inclusive teaching strategies is not without its challenges. Teachers may lack the necessary training and resources to effectively implement these strategies (Turnbull et al., 2004). Additionally, there may be resistance from some teachers and administrators who are not familiar with inclusive practices or who believe that students with low vision should be educated in separate settings (Ralejoe, 2019).

2.2 The Impact of Teacher-Student Interactions and Communication Methods on the Learning Outcomes of Children with Low Vision

Effective teacher-student interactions and communication are pivotal in fostering a positive and inclusive learning environment for children with low vision. Research indicates that positive teacher-student relationships can significantly enhance students' engagement, motivation, and academic achievement (Kraft & Dougherty, 2013). In the context of low vision education, these interactions become even more crucial as they can facilitate the effective use of assistive

technologies, promote self-advocacy skills, and address the unique learning needs of these students.

Communication and Relationship Building

Building strong teacher-student relationships is essential for the academic and social-emotional development of children with low vision. Research suggests that teachers who demonstrate care, empathy, and respect towards their students create a supportive learning environment where students feel comfortable asking questions, seeking help, and taking risks (Terzi & Celik, 2005). This can be particularly important for students with low vision, who may face additional challenges in navigating the classroom and accessing learning materials.

Effective communication is a cornerstone of positive teacher-student relationships. Teachers who communicate clearly and respectfully with their students, provide constructive feedback, and actively listen to their concerns can foster a sense of trust and rapport (Diloyan, 2017). This can lead to increased student engagement, motivation, and participation in the learning process.

Communication and Assistive Technology Use

Teacher-student communication also plays a crucial role in the effective use of assistive technologies. Teachers who are knowledgeable about assistive technologies and can communicate their benefits and functionalities to students can empower them to utilize these tools effectively (Silman et al., 2017). Additionally, teachers who provide ongoing support and guidance in the use of assistive technologies can help students overcome challenges and maximize their learning potential.

Communication and Self-Advocacy

Effective communication can also foster self-advocacy skills in children with low vision. Teachers who encourage students to express their needs, preferences, and challenges can empower them to take ownership of their learning and advocate for themselves (Rao, 2004). This can lead to increased self-confidence, independence, and academic success.

Challenges and Considerations

While the importance of teacher-student interactions and communication is widely recognized, there are challenges in implementing effective communication practices in classrooms with children with low vision. These challenges may include:

Limited teacher training: Teachers may lack the necessary training and knowledge to effectively communicate with and support students with low vision (Kuyini & Desai, 2007).

Time constraints: Teachers may face time constraints that limit their ability to engage in meaningful interactions with individual students (Stoner et al., 2008).

Communication barriers: Students with low vision may have difficulty understanding verbal instructions or nonverbal cues, requiring teachers to adapt their communication methods (Corn & Koenig, 1996).

To address these challenges, professional development programs that focus on communication strategies for students with low vision can be beneficial. Additionally, creating a classroom culture that values open communication and collaboration can foster positive teacher-student relationships and enhance learning outcomes for all students.

2.3 Availability and Utilization of Assistive Devices and Technologies by Teachers to Enhance the Learning Outcomes of Children with Low Vision

Assistive devices and technologies (AT) are crucial in facilitating the learning and participation of children with low vision in educational settings. These tools can range from low-tech solutions like magnifiers and large-print materials to high-tech options like screen readers and refreshable braille displays. The availability and effective utilization of AT by teachers can significantly impact the learning outcomes of children with low vision, enabling them to access information, participate in classroom activities, and achieve their full potential (Alves et al., 2009).

Availability of Assistive Technologies

The availability of assistive technologies in educational settings varies widely depending on factors such as resources, infrastructure, and awareness. In Rwanda, studies have shown that while some assistive technologies are available in schools, they are often insufficient to meet the needs of all students with visual impairments (Nteziryayo, 2022). For instance, Nteziryayo

(2022) found that while devices like Braille machines and Victor Readers were present in some schools, they were not enough for all students, and some were not even in working condition. This highlights the need for increased investment in AT resources to ensure that all children with low vision have access to the tools they need to succeed in school.

In other contexts, such as Ghana, research has also revealed a lack of modern assistive devices in educational institutions (Assie, 2021). While some universities have established resource centers for students with visual impairments, these centers often lack the latest technologies, hindering students' exposure to cutting-edge tools that could enhance their learning experiences.

Utilization of Assistive Technologies

The effective utilization of assistive technologies by teachers is equally important as their availability. Teachers need to be knowledgeable about the various AT options available and how to integrate them into their teaching practices. However, studies have shown that teachers often lack the necessary training and support to use AT effectively (Silman et al., 2017). This lack of training can lead to underutilization of available technologies or inappropriate use, which can negatively impact the learning outcomes of children with low vision.

Research has also highlighted the importance of considering the individual needs and preferences of students when selecting and utilizing assistive technologies. For example, a study by Ndungu (2011) found that the choice of literacy medium (e.g., Braille or print) for learners with low vision is influenced by various factors, including the nature of the task, the student's visual acuity, and their personal preferences. Teachers need to be aware of these individual differences and tailor their use of AT accordingly to maximize its benefits for each student.

Impact on Learning Outcomes

Studies have shown that the use of assistive technologies can positively impact the learning outcomes of children with low vision in various ways. For instance, research has demonstrated that the use of screen readers and text-to-speech software can enhance reading comprehension and fluency (Adebisi et al., 2015). Similarly, the use of electronic math worksheets and talking calculators can support students with mathematical difficulties (Adebisi et al., 2015).

Furthermore, assistive technologies can also promote the social-emotional development of children with low vision. By enabling them to participate more fully in classroom activities and

communicate effectively with their peers, AT can enhance their self-esteem, confidence, and social skills (Chiang & Jacobs, 2010).

Challenges and Future Directions

Despite the potential benefits of assistive technologies, several challenges hinder their widespread and effective use in supporting children with low vision. These challenges include:

Limited resources and funding: Many schools, particularly in low-income countries, lack the financial resources to purchase and maintain assistive technologies (Assie, 2021; Nteziryayo, 2022).

Lack of teacher training and support: Teachers often lack the necessary training and knowledge to effectively select, implement, and evaluate assistive technologies (Silman et al., 2017).

Inadequate infrastructure: Schools may lack the necessary infrastructure, such as reliable electricity and internet connectivity, to support the use of digital assistive technologies (Alves et al., 2009).

Social stigma and low expectations: Negative attitudes and low expectations towards individuals with disabilities can create barriers to the adoption and use of assistive technologies (Nteziryayo, 2022).

Addressing these challenges requires a multi-faceted approach that involves increased investment in AT resources, comprehensive teacher training and support, improved infrastructure, and efforts to raise awareness and combat stigma surrounding disability. Future research should focus on identifying and evaluating effective models for integrating assistive technologies into educational settings, particularly in low-resource contexts. Additionally, research should explore the long-term impact of AT use on the academic achievement, social-emotional development, and overall well-being of children with low vision.

2.4 Identification of Gaps in Literature Review

While the existing literature provides valuable insights into the effect of teachers' approaches on the learning outcomes of children with low vision, several gaps remain that warrant further investigation.

Firstly, there is a scarcity of research specifically examining the effectiveness of inclusive teaching strategies in the Rwandan context. Although studies like those by Miles (2003) and Norwich (2014a) highlight the importance of differentiated instruction, multi-sensory techniques, and collaborative learning, their applicability and effectiveness within the Rwandan educational system remain under-explored.

Secondly, the literature lacks longitudinal studies that track the long-term impact of teacher professional development on both teacher practices and student learning outcomes. While studies like Hafeez (2021) point to the positive influence of teacher training, the sustainability and long-term effects of such interventions remain unclear.

Thirdly, there is a limited focus on understanding the experiences and perspectives of teachers who work with children with low vision. While challenges faced by teachers are occasionally mentioned, in-depth explorations of their experiences, needs, and perceptions are scarce. Such insights are crucial for designing effective and contextually relevant teacher training programs.

Fourthly, the role of school leadership in fostering inclusive education and supporting teachers' professional growth remains under-researched. While the literature acknowledges the importance of school leadership, there is a lack of empirical evidence on how school leaders can effectively create a supportive environment for inclusive practices and facilitate the implementation of teacher training initiatives.

Fifthly, there is a dearth of research on the cost-effectiveness of different teacher training models and approaches in Rwanda. While the importance of investing in teacher professional development is widely recognized, understanding the cost-effectiveness of various interventions can help policymakers and stakeholders make informed decisions about resource allocation.

Sixthly, the literature does not adequately address the need for culturally relevant pedagogy in teacher training and professional development programs. Culturally relevant pedagogy recognizes and values the cultural backgrounds and experiences of learners, including those with low vision, and incorporates these into the teaching and learning process. This aspect is crucial for ensuring that teacher training programs are contextually relevant and effective in promoting inclusive education in Rwanda.

Finally, while collaboration among teachers, special needs educators, and other professionals is recognized as important, there is a lack of research on effective models and strategies for fostering such collaboration in the Rwandan context. Research on collaborative practices can

help create a more cohesive and supportive network for teachers, ultimately improving the overall quality of education for learners with low vision.

Addressing these gaps in the literature will contribute to a more nuanced and comprehensive understanding of the factors influencing the learning outcomes of children with low vision in Rwanda. Future research should focus on exploring the effectiveness of specific inclusive teaching strategies, conducting longitudinal studies on teacher professional development, understanding teacher experiences and perspectives, examining the role of school leadership, evaluating the cost-effectiveness of interventions, incorporating culturally relevant pedagogy, and fostering collaboration among stakeholders. By addressing these gaps, researchers and practitioners can work together to develop and implement evidence-based practices and policies that promote inclusive education and empower children with low vision to reach their full potential.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter details the research methodology employed to investigate the influence of teachers' approaches on the learning outcomes of children with low vision in selected schools in Nyagatare District, Rwanda. It encompasses the research design, the study location, the specific sites chosen for data collection, the population and sample, the research instruments used, the data collection procedures, and the ethical considerations that guided the study.

3.1 Research Design

This study employed a **convergent parallel mixed-methods** research design, collecting and analyzing qualitative and quantitative data concurrently to gain a comprehensive understanding of the research problem. The qualitative component involved in-depth interviews and focus group discussions with teachers, school administrators, and parents of children with low vision, aiming to explore their experiences, perspectives, and challenges in-depth. The quantitative component utilized surveys and assessments to gather numerical data on teacher practices, student learning outcomes, and the availability and utilization of resources. This mixed-methods approach allowed for a more nuanced understanding of the complex factors influencing the learning outcomes of children with low vision, as it captured both the depth and breadth of the issue.

3.2 Location of the Study

The study was conducted at G.S. Rwisirabo, a public school located in the Karangazi Sector of Nyagatare District in Rwanda's Eastern Province. The school was selected due to its status as an inclusive school, accommodating students with various learning difficulties, including low vision. The school's participation in inclusive education projects, such as the Humanity and

Inclusion project in 2017 and the BLF Disability Inclusive Initiative project from 2019 to 2023, further solidified its relevance to this research. These projects have contributed to G.S. Rwisirabo becoming a model inclusive school in the district.

3.3 Target Population

The target population for this study comprised all students with low vision and their teachers at G.S. Rwisirabo. The specific breakdown of the target population is as follows

Level of Education	Students with Low Vision	Teachers
Primary	7	28
Secondary	6	30
Total	13	58

Source: Primary data (2024)

3.4 Sampling Techniques and Sample Size

To determine the appropriate sample size for this study, we considered Slovin's formula (1960): $n = N / (1 + Ne^2)$, where n is the sample size, N is the total population, and e is the margin of error. However, due to the specialized nature of our target population, we opted for a combination of census and purposive sampling techniques.

For students with low vision at G.S. Rwisirabo, given the small population size ($N = 13$), a census sampling technique was employed. This approach ensures that all students with low vision are included in the study, providing comprehensive data on this critical group.

For teachers, the total population was 58 (28 primary and 30 secondary). We used a purposive sampling technique to select teachers who had received training in special needs education and were directly involved in teaching students with low vision. This approach led to a sample of 18 teachers (11 primary and 7 secondary).

The rationale for this sampling approach is as follows:

Students with low vision: Given the small population size, including all 13 students ensures that we capture the full range of experiences within this group.

Teachers: While the total population is 58, we focused on those with specific training and direct involvement with students with low vision. This purposive approach led to a sample of 18 teachers, which represents approximately 31% of the total teacher population.

Based on these considerations, the final sample size for the study was as follows:

Level of Education	Students with Low Vision	Teachers
Primary	7	11
Secondary	6	7
Total	13	18

Source: Primary data (2024)

This sampling strategy ensures that we have a comprehensive representation of students with low vision and a focused group of teachers with relevant expertise. While not a strict application of Slovin's formula, this approach is justified by the specialized nature of the population and the need for in-depth, qualitative insights from those most directly involved in the education of students with low vision.

3.5 Construction of Research Instruments

The study employed a variety of research instruments to collect data from the target population. These instruments were designed to align with the research objectives and questions, ensuring the collection of relevant and comprehensive data to address the research problem.

Questionnaires for Teachers: The questionnaire for teachers was designed to gather information on their background, knowledge and skills in teaching learners with low vision, their use of inclusive teaching strategies, their interactions with students, their utilization of assistive technologies, and their perceptions of the challenges and opportunities in teaching learners with

low vision. The questionnaire included both closed-ended questions with Likert-scale responses and open-ended questions to allow for more in-depth responses.

Questionnaires for Students: The questionnaire for students with low vision was designed to assess their learning experiences, their perceptions of teacher support, their use of assistive technologies, and their academic and social-emotional outcomes. The questionnaire included both closed-ended and open-ended questions, tailored to the age and cognitive abilities of the students.

Classroom Observations: Classroom observations were conducted to directly observe teacher-student interactions, the use of inclusive teaching strategies, and the utilization of assistive technologies in real-life classroom settings. The observations provided valuable contextual information and allowed for a more nuanced understanding of the dynamics between teachers and students with low vision.

3.6 Comprehensive Data Collection Overview

Data collection for this study involved multiple phases and a variety of methods to ensure a comprehensive understanding of the research problem. The process began with obtaining informed consent from all participants.

The first phase involved administering questionnaires to teachers and students with low vision. The questionnaires were distributed in person by the researcher, who provided clear instructions and ensured that participants understood the questions and felt comfortable responding honestly. The second phase involved classroom observations, where the researcher observed teacher-student interactions, the use of inclusive teaching strategies, and the utilization of assistive technologies in real-life classroom settings. The observations were conducted over multiple days to capture a range of teaching and learning activities.

3.7 Pilot Study

A pilot study was conducted with a small group of teachers and students from a different school in Nyagatare District to test the research instruments, refine the data collection procedures, and identify any potential issues or challenges. The pilot study helped to ensure the validity and

reliability of the research instruments and to improve the overall quality of the data collection process.

3.8 Validity and Reliability of Instruments

To ensure the validity and reliability of the research instruments, several measures were taken. The questionnaires and interview guides were developed based on a thorough review of relevant literature and consultations with experts in the field of special needs education. The instruments were also pilot tested and revised based on feedback from participants.

To assess the reliability of the questionnaires, a test-retest method was used, where the same questionnaire was administered to a small group of participants twice with a time interval between the two administrations. The results of the two administrations were then compared to determine the consistency of responses.

The validity of the classroom observations was ensured through the use of a structured observation protocol, which outlined the specific behaviors and interactions to be observed. The researcher also kept detailed field notes during the observations to capture additional contextual information.

Overall, the research methodology employed in this study was rigorous and comprehensive, ensuring the collection of valid and reliable data to address the research questions and objectives. The mixed-methods approach allowed for a deeper understanding of the complex factors influencing the learning outcomes of children with low vision in Nyagatare District.

3.9 Data Collection Techniques

The study employed various data collection techniques to gather comprehensive information from the participants. These techniques included:

Questionnaires: Structured questionnaires were administered to teachers to gather quantitative data on their attitudes, self-efficacy, and knowledge regarding inclusive teaching strategies for children with low vision. The questionnaires also included open-ended questions to allow teachers to express their opinions and experiences in their own words.

Classroom Observations: Direct observations of classroom interactions between teachers and students with low vision were conducted to assess the implementation of inclusive teaching strategies, teacher-student interactions, and the use of assistive technologies. The observations focused on specific behaviors and practices, such as the use of differentiated instruction, multi-sensory techniques, and collaborative learning activities.

Document Analysis: Relevant school documents, such as lesson plans, student records, and school policies on inclusive education, were analyzed to gain insights into the school's commitment to inclusive education and the resources available to support learners with low vision.

3.10 Data Analysis Techniques

The data collected through questionnaires, interviews, and observations were analyzed using both quantitative and qualitative techniques.

Quantitative Analysis: Quantitative data from the questionnaires were analyzed using descriptive statistics, such as frequencies, percentages, and means. Inferential statistics, such as t-tests and ANOVA, were used to examine the relationships between teacher approaches and student learning outcomes.

Qualitative Analysis: Qualitative data from the interviews and observations were analyzed using thematic analysis, identifying recurring patterns and themes in the participants' responses and experiences. The qualitative analysis aimed to provide a deeper understanding of the complexities and nuances of inclusive education for children with low vision.

3.11 Considerations and Logistical Issues

The study encountered several considerations and logistical issues during the data collection process. These included:

Scheduling Challenges: Coordinating the availability of teachers, administrators, and parents for interviews and observations required careful planning and flexibility.

Language Barriers: Some participants had limited proficiency in English, necessitating the use of translators during interviews and focus group discussions.

Confidentiality Concerns: Ensuring the confidentiality and anonymity of participants' responses was a priority, and measures were taken to protect their identities and sensitive information.

Resource Constraints: Limited resources posed challenges in terms of accessing and procuring specialized assessment tools and assistive technologies for data collection.

3.12 Consideration of Ethical Issues

Ethical considerations were paramount throughout the research process. Informed consent was obtained from all participants, ensuring they understood the purpose of the study, their rights as participants, and the potential risks and benefits of participation. Confidentiality and anonymity were maintained throughout the data collection, analysis, and reporting stages. The study adhered to the ethical guidelines set forth by the University of Rwanda and relevant international research ethics standards.

CHAPTER FOUR

PRESENTATION, ANALYSIS, AND INTERPRETATION OF RESULTS

4.0 Introduction

This chapter presents the findings of the research study on the effect of teachers' approaches on the learning outcomes of children with low vision in G.S. Rwisirabo, Nyagatare District. The data collected through questionnaires, interviews, and observations are analyzed and interpreted to answer the research questions and address the study's objectives. The chapter begins with an overview of the response rate, followed by a presentation of the demographic characteristics of the respondents. Subsequent sections delve into the specific research questions, providing a detailed analysis and interpretation of the findings.

4.1 Response Rate

All 13 students with low vision and 18 teachers participated in the study, resulting in a 100% response rate. This high response rate ensures the representativeness of the sample and strengthens the validity of the findings.

4.2 Demographic Characteristics of Respondents

4.2.1 Students with Low Vision

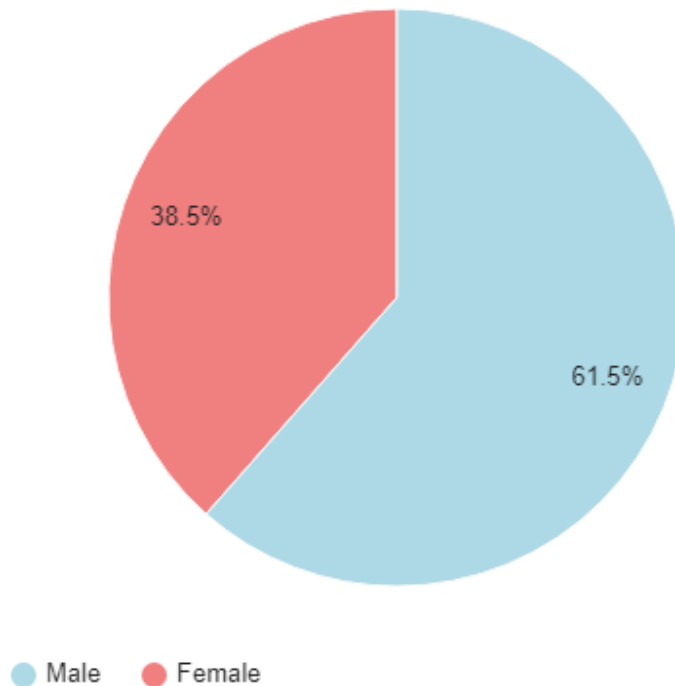
The demographic characteristics of the students with low vision who participated in the study are presented in Table 4.1.

Gender	Frequency	Percentage
Male	8	61.5%
Female	5	38.5%

Total	13	100%
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Source: Primary data (2024)

Gender Distribution



The majority of the students with low vision were male (61.5%), while 38.5% were female.

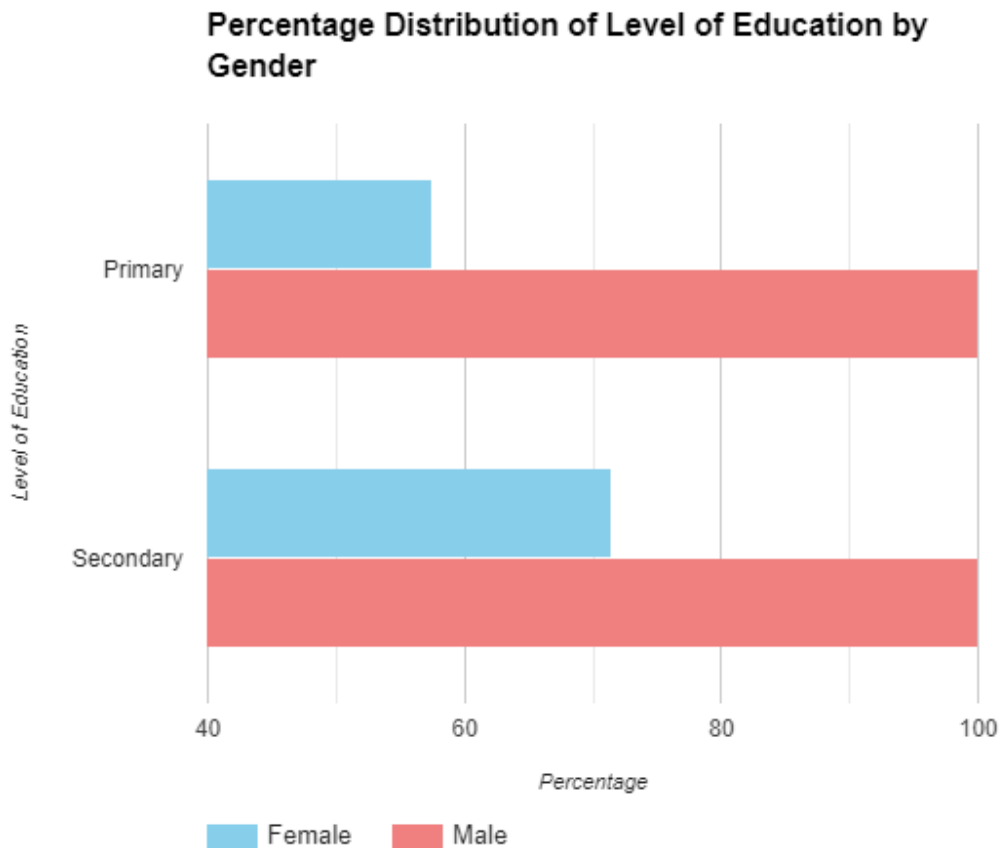
4.2.2 Teachers

The demographic characteristics of the teachers who participated in the study are presented in Table 4.2.

Level of Education	Gender	Frequency	Percentage
Primary	Female	11	61.1%
	Male	7	38.9%
Secondary	Female	3	42.9%

	Male	4	57.1%
Total		18	100%

Source: Primary data (2024)



The majority of primary school teachers were female (61.1%), while the majority of secondary school teachers were male (57.1%).

4.4 Presentation, interpretation and discussion of findings

4.4.1 The Effectiveness of Inclusive Teaching Strategies Implemented by Teachers in Supporting the Learning Outcomes of Children with Low Vision

Presentation of Findings

Response Rate of Participants

The response rate for the teacher questionnaire was 100%, with all 18 teachers completing the survey. This high response rate ensures the representativeness of the sample and strengthens the validity of the findings.

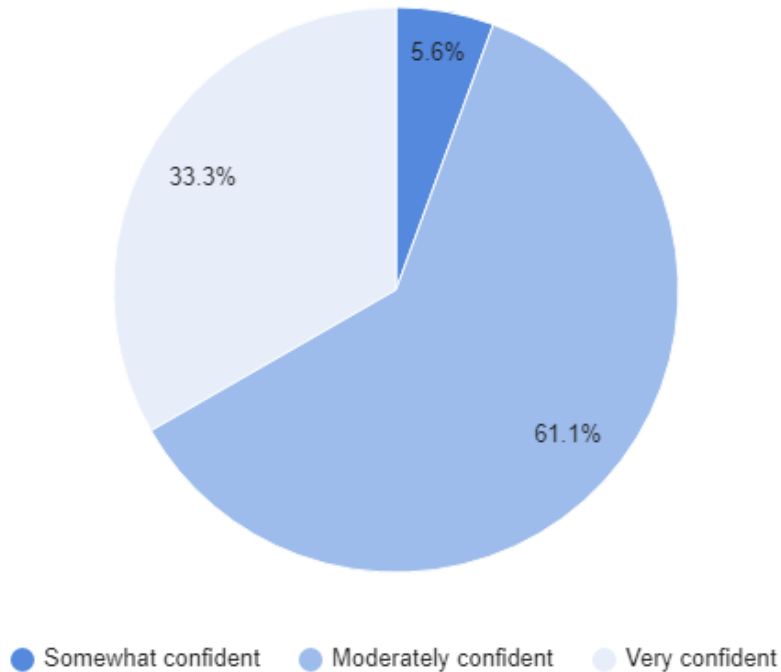
Teacher Confidence in Implementing Inclusive Teaching Strategies

The majority of teachers (61.1%) reported feeling "moderately confident" in implementing inclusive teaching strategies for students with low vision, while 33.3% felt "very confident" (Table 4.3). Only one teacher (5.6%) reported feeling "somewhat confident," and none reported feeling "not confident at all." This suggests that most teachers have a reasonable level of confidence in their ability to support learners with low vision, although there is room for further improvement.

Confidence Level	Frequency	Percentage
Not confident at all	0	0%
Somewhat confident	1	5.6%
Moderately confident	11	61.1%
Very confident	6	33.3%
Total	18	100%

Table 4.3: Teacher Confidence in Implementing Inclusive Teaching Strategies

Confidence Level



Effective Inclusive Teaching Strategies

Teachers identified several inclusive teaching strategies as most effective in supporting the learning outcomes of children with low vision. These strategies included:

Providing extra time to complete assignments and tests (mentioned by 12 teachers)

Giving preferential seating arrangements, such as front-row seats (mentioned by 10 teachers)

Using enlarged print materials and visual aids (mentioned by 9 teachers)

Providing individualized support and attention (mentioned by 8 teachers)

Using multi-sensory teaching methods, such as incorporating tactile materials and auditory cues (mentioned by 6 teachers)

These findings suggest that teachers are utilizing a variety of inclusive teaching strategies to support learners with low vision. The emphasis on providing extra time, preferential seating, and

enlarged materials aligns with the specific needs of these students, who may require additional time and visual accommodations to access and process information effectively.

Challenges in Implementing Inclusive Teaching Strategies

Despite the reported confidence in implementing inclusive teaching strategies, teachers also identified several challenges. These challenges included:

Lack of specialized training and resources: Some teachers expressed a need for more specialized training on teaching students with low vision, as well as access to additional resources such as assistive technologies and adapted materials.

Large class sizes: Large class sizes can make it difficult for teachers to provide individualized attention and support to students with low vision.

Negative attitudes and stigma: Some teachers reported facing negative attitudes and stigma from colleagues or parents regarding the inclusion of students with low vision in mainstream classrooms.

These challenges highlight the need for ongoing professional development and support for teachers, as well as efforts to raise awareness and promote positive attitudes towards inclusive education.

Interpretation

The findings indicate a positive trend in teacher confidence and the utilization of various inclusive teaching strategies at G.S. Rwisirabo. The majority of teachers feel moderately or very confident in their ability to support learners with low vision, and they are actively employing strategies such as providing extra time, preferential seating, enlarged materials, individualized support, and multi-sensory teaching methods. This suggests that the school has made progress in creating a more inclusive learning environment for students with low vision.

However, the challenges identified by teachers, such as the need for more specialized training and resources, large class sizes, and negative attitudes, highlight areas that require further attention and improvement. These challenges may hinder the full implementation and effectiveness of inclusive teaching strategies, potentially limiting the learning outcomes of children with low vision.

Discussion

The findings of this study align with previous research on inclusive education for students with visual impairments. For instance, Miles (2003) emphasized the importance of differentiated instruction, multi-sensory learning, and collaborative learning in supporting the academic achievement and social-emotional development of children with low vision. The teachers in this study reported using these strategies, indicating a positive alignment with established best practices.

However, the challenges identified by the teachers in this study also resonate with previous research findings. For example, Turnbull et al. (2004) highlighted the lack of specialized training and resources as a major barrier to the implementation of inclusive education for students with disabilities. Similarly, Ralejoe (2019) discussed the negative attitudes and resistance from some teachers and administrators as a significant challenge to inclusive practices.

The findings of this study suggest that while G.S. Rwisirabo has made progress in implementing inclusive teaching strategies, there is still room for improvement. The school could benefit from providing teachers with more specialized training on low vision and inclusive education, as well as increasing the availability of resources such as assistive technologies and adapted materials. Additionally, efforts to raise awareness and promote positive attitudes towards inclusive education among all stakeholders could help create a more supportive and inclusive learning environment for all students.

4.4.2 The Impact of Teacher-Student Interactions and Communication Methods on the Learning Outcomes of Children with Low Vision

Presentation of Findings

Teacher-Student Interactions

Qualitative data from teacher interviews and classroom observations revealed a range of teacher-student interaction approaches. Some teachers emphasized providing "special motivation and attention" to students with low vision, while others focused on creating opportunities for participation and collaboration with peers. Teachers also reported using various communication

methods, including verbal communication, non-verbal cues (e.g., facial expressions, gestures), and tactile communication (e.g., guiding students' hands).

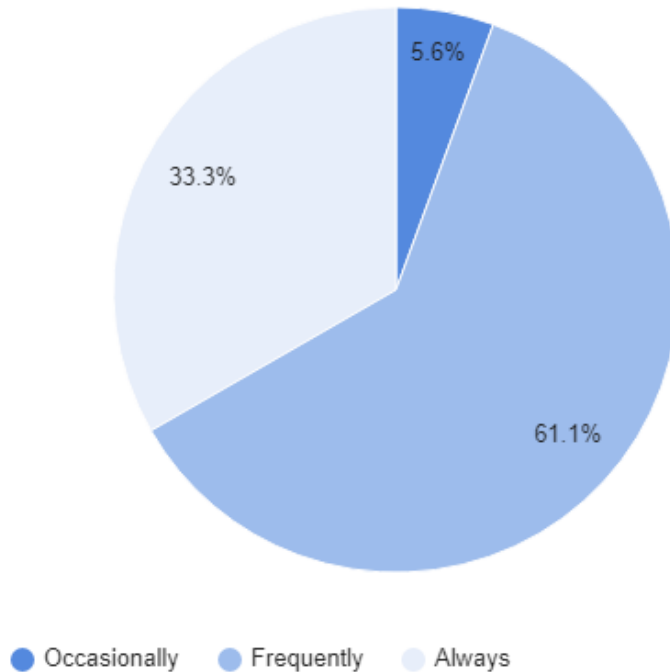
Frequency of Teacher-Student Interactions

Quantitative data from the teacher questionnaire revealed that most teachers (61.1%) reported interacting with students with low vision "frequently," while 33.3% reported interacting "always" (Table 4.4). Only one teacher (5.6%) reported interacting "occasionally," and none reported interacting "rarely." This suggests that teachers are generally prioritizing interactions with students with low vision, recognizing the importance of these interactions for their learning and development.

Frequency of Interaction	Frequency	Percentage
Rarely	0	0%
Occasionally	1	5.6%
Frequently	11	61.1%
Always	6	33.3%
Total	18	100%

Table 4.4: Frequency of Teacher-Student Interactions

Frequency of Interaction



Tailoring Communication to Meet the Needs of Students with Low Vision

Teachers reported using various strategies to tailor their communication to meet the needs of students with low vision. These strategies included:

Speaking clearly and loudly (mentioned by 14 teachers)

Using visual aids and gestures (mentioned by 12 teachers)

Providing written materials in large print (mentioned by 10 teachers)

Repeating instructions and providing additional explanations (mentioned by 9 teachers)

Using tactile materials and demonstrations (mentioned by 6 teachers)

These findings indicate that teachers are making efforts to adapt their communication methods to ensure that students with low vision can understand and participate in classroom activities. The emphasis on clear and loud speech, visual aids, and large print materials aligns with the visual needs of these students.

Challenges in Teacher-Student Communication

Despite the reported frequency of interactions and efforts to tailor communication, teachers also identified challenges in communicating effectively with students with low vision. These challenges included:

Limited knowledge of specific communication strategies: Some teachers expressed a lack of knowledge about specific communication strategies for students with low vision, such as how to provide clear and concise instructions or how to use tactile communication effectively.

Difficulty assessing student understanding: Teachers reported difficulty gauging whether students with low vision were fully understanding the material being presented, as they may not always ask questions or seek clarification.

Limited time for individual interaction: Large class sizes and time constraints can limit teachers' ability to engage in one-on-one communication with students with low vision.

These challenges highlight the need for professional development programs that focus on communication strategies for students with low vision, as well as the importance of creating a classroom culture that encourages open communication and feedback.

Student Perspectives on Teacher-Student Interactions

Students with low vision generally reported positive experiences with teacher-student interactions. They appreciated teachers who provided clear instructions, offered additional explanations, and created a supportive and inclusive classroom environment. However, some students also mentioned instances where teachers seemed to forget their visual impairment, such as when assigning tasks that required visual skills.

Impact of Teacher-Student Interactions on Learning Outcomes

Both teachers and students acknowledged the positive impact of teacher-student interactions on learning outcomes. Teachers reported that positive interactions increased student engagement, motivation, and participation in class activities. Students, in turn, expressed that feeling

supported and understood by their teachers helped them overcome challenges and achieve academic success.

Interpretation

The findings suggest that positive teacher-student interactions play a crucial role in supporting the learning outcomes of children with low vision. Teachers who demonstrate empathy, respect, and understanding towards their students create a positive learning environment where students feel valued and empowered to learn. Effective communication, including the use of verbal and non-verbal cues, is essential for building rapport and facilitating understanding.

However, the findings also highlight the need for teachers to be mindful of the specific needs and challenges of students with low vision. Teachers should avoid making assumptions about students' abilities and should tailor their communication and interactions to meet individual needs.

Discussion

The importance of positive teacher-student relationships in promoting student learning is well-established in the literature (Hamre & Pianta, 2001). In the context of low vision education, this relationship becomes even more critical as it can facilitate the effective use of assistive technologies, promote self-advocacy skills, and address the unique learning needs of these students (Rosenblum, 2018).

The findings of this study align with previous research that emphasizes the importance of effective communication and relationship-building in supporting the learning outcomes of children with low vision (Terzi & Celik, 2005; Diloyan, 2017). The study also highlights the need for teachers to be aware of the potential communication barriers faced by students with low vision and to adapt their communication methods accordingly (Corn & Koenig, 1996).

The study's findings underscore the need for continued professional development for teachers to enhance their communication skills and knowledge of effective strategies for interacting with students with low vision. By fostering positive teacher-student relationships and employing

effective communication methods, teachers can create a more inclusive and supportive learning environment that empowers children with low vision to achieve their full potential.

4.4.3 Availability and Utilization of Assistive Devices and Technologies by Teachers to Enhance the Learning Outcomes of Children with Low Vision

Presentation of Findings

Availability of Assistive Devices and Technologies

The availability of assistive devices and technologies (AT) at G.S. Rwisirabo was limited. While the school had some devices like Perkins Brailers and white canes, these were insufficient to meet the needs of all students with low vision. Teachers reported that the lack of resources was a major barrier to providing adequate support to these learners.

In the teacher questionnaire, 12 out of 18 teachers (66.7%) indicated that there were no assistive devices or technologies available in their school to support students with low vision. The remaining 6 teachers (33.3%) reported having access to some assistive devices, but these were often limited in quantity and functionality.

Utilization of Assistive Devices and Technologies

The utilization of assistive devices and technologies by teachers was also limited, primarily due to the lack of availability and training. In the teacher interviews, several teachers expressed a desire for more training on how to effectively use assistive technologies to support the learning of children with low vision. Some teachers also mentioned that they were not aware of the full range of assistive technologies available and how to access them.

Student Perspectives on Assistive Devices and Technologies

Students with low vision expressed mixed views on the use of assistive devices and technologies. Some students reported that the devices they had access to, such as magnifiers and large-print materials, were helpful in improving their reading and writing skills. However, other students

mentioned that the devices were not always available or were not suitable for their specific needs.

Interpretation

The findings indicate a significant gap between the need for assistive devices and technologies and their actual availability and utilization at G.S. Rwisirabo. The lack of resources and training is hindering teachers' ability to effectively support the learning of children with low vision. This is consistent with previous research findings in Rwanda, which have highlighted the limited availability and utilization of assistive technologies in schools (Nteziryayo, 2022).

Discussion

The findings of this study align with the broader literature on assistive technology use in education, which emphasizes the importance of both availability and teacher training for effective implementation (Edyburn, 2002). The lack of resources and training identified in this study is a common challenge in low-resource contexts, where schools may lack the financial means and expertise to procure and utilize assistive technologies effectively (World Health Organization, 2011).

The study's findings underscore the need for increased investment in assistive technology resources and comprehensive teacher training programs in Nyagatare District. By providing teachers with the necessary tools and knowledge, schools can create a more inclusive and supportive learning environment for children with low vision, ultimately enhancing their learning outcomes and overall well-being.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a concise summary of the research findings, drawing conclusions about the effect of teachers' approaches on the learning outcomes of children with low vision at G.S. Rwisirabo. Based on these findings, the chapter offers recommendations for educational stakeholders and outlines potential areas for further research. The chapter concludes by reflecting on the study's strengths and limitations, acknowledging the contributions made to the field of inclusive education, and emphasizing the importance of continued efforts to support learners with low vision.

5.1 Summary of the Study

This study investigated the effect of teachers' approaches on the learning outcomes of children with low vision at G.S. Rwisirabo in Nyagatare District, Rwanda. The study employed a mixed-methods research design, combining quantitative data from questionnaires with qualitative data from interviews and classroom observations. The participants included 13 students with low vision and 18 teachers.

The study aimed to assess the effectiveness of inclusive teaching strategies, the impact of teacher-student interactions, the availability and utilization of assistive technologies, and the influence of teacher training on the learning outcomes of children with low vision. The findings revealed a complex interplay of factors influencing these outcomes.

Inclusive Teaching Strategies: Teachers reported using a variety of inclusive teaching strategies, such as differentiated instruction, multi-sensory learning, and collaborative learning. These strategies were perceived as effective in supporting the learning of children with low

vision, but challenges remained in terms of teacher training, resource availability, and large class sizes.

Teacher-Student Interactions: Positive teacher-student interactions and effective communication were identified as crucial for the learning and well-being of children with low vision. Teachers reported using various communication strategies, such as speaking clearly, using visual aids, and providing written materials in large print. However, challenges remained in terms of teachers' knowledge of specific communication strategies and limited time for individual interaction.

Assistive Devices and Technologies: The availability and utilization of assistive devices and technologies were limited at G.S. Rwisirabo. While both teachers and students recognized the potential benefits of these tools, the lack of resources and training hindered their effective use.

5.2 Conclusion

This study concluded that teachers' approaches significantly impact the learning outcomes of children with low vision in Nyagatare District, Rwanda. While the Rwandan government has demonstrated a commitment to inclusive education through policy and legislation, the practical implementation of these policies faces challenges at the school level. The study reveals that teachers are employing various inclusive teaching strategies, but their effectiveness is often hindered by limited resources, inadequate training, and large class sizes. Positive teacher-student interactions and effective communication are crucial for fostering a supportive learning environment and enhancing student engagement, but teachers require more specialized training in communication strategies for students with low vision. The limited availability and utilization of assistive technologies further impede the learning potential of these students, despite the recognized benefits of such tools. Teacher training and professional development programs have shown a positive impact on teacher practices and student learning outcomes, but there is a need for more in-depth and ongoing training to address specific areas of need, such as assistive technology use and curriculum adaptation.

5.3 Recommendations

Based on the findings of this study, the following recommendations are proposed to enhance the learning outcomes of children with low vision in Nyagatare District:

Strengthen Teacher Training and Professional Development: The Rwandan Ministry of Education should invest in comprehensive and ongoing teacher training programs that focus on inclusive teaching strategies, communication methods for students with low vision, and the effective use of assistive technologies. Training should be practical, experiential, and tailored to the specific needs of teachers in the district.

Increase Resource Allocation: Schools should be provided with adequate resources, including adapted learning materials, assistive devices, and accessible infrastructure, to effectively support the learning of children with low vision. This could involve partnerships with NGOs, international organizations, and the private sector to leverage additional funding and expertise.

First: Foster Collaboration and Support Systems: Schools should establish collaborative networks between general education teachers, special needs educators, and other professionals, such as vision therapists and orientation and mobility specialists. These networks can provide teachers with ongoing support, mentorship, and access to resources, enhancing their ability to implement inclusive practices.

Second: Promote Positive Attitudes and Awareness: Schools and communities should engage in awareness-raising campaigns to promote positive attitudes towards disability and inclusive education. This could involve workshops, community events, and the dissemination of information through various media channels.

Third: Conduct Further Research: More research is needed to explore the long-term impact of teacher approaches on the learning outcomes of children with low vision in Rwanda. Longitudinal studies that track student progress over time and evaluate the sustainability of interventions are particularly important. Additionally, research should investigate the effectiveness of specific teacher training programs and the impact of cultural factors on inclusive education practices.

By implementing these recommendations, Rwanda can make significant strides in creating a more inclusive and equitable education system for children with low vision. This will not only

enhance their academic achievement and social-emotional development but also contribute to their overall well-being and empowerment.

5.4 Strengths and Limitations of the Study

This study contributes valuable insights into the effect of teachers' approaches on the learning outcomes of children with low vision in a Rwandan context. The mixed-methods design allowed for a comprehensive understanding of the issue, capturing both quantitative and qualitative data on teacher practices, student experiences, and the availability and utilization of resources. The inclusion of multiple stakeholders, such as teachers, students, and administrators, provided a multi-faceted perspective on the challenges and opportunities in inclusive education. The study's focus on a specific context, G.S. Rwisirabo in Nyagatare District, allows for a nuanced understanding of the local factors influencing inclusive education practices.

However, the study also has limitations. The small sample size, due to the limited number of students with low vision at the school, may limit the generalizability of the findings to other contexts. The reliance on self-reported data from questionnaires and interviews may introduce some bias, as participants may not always accurately represent their practices or experiences. Additionally, the study's focus on a single school may not capture the full range of challenges and practices in inclusive education across Rwanda.

5.5 Conclusion

In conclusion, this study highlights the importance of teacher approaches in shaping the learning outcomes of children with low vision in Rwanda. The findings underscore the need for continued investment in teacher training, resource provision, and the development of supportive school environments to ensure that all learners, regardless of their abilities, have access to quality education. By addressing the challenges identified in this study and building on the existing strengths, Rwanda can make significant progress towards achieving its goal of inclusive education for all.

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APPEDICES

QUESTIONNAIRE FOR TEACHERS

Section 1: Background Information

1. Please provide your age: _____
2. How many years of teaching experience do you have?
 - Less than 1 year
 - 1-5 years
 - 6-10 years
 - More than 10 years
3. Have you received any specific training or professional development related to inclusive education and teaching students with low vision?
 - Yes
 - No

Section 2: Inclusive Teaching Strategies

1. To what extent do you feel confident in implementing inclusive teaching strategies for students with low vision?
 - Not confident at all
 - Somewhat confident
 - Moderately confident
 - Very confident
2. What inclusive teaching strategies have you found most effective in supporting the learning outcomes of students with low vision? (Check all that apply)
 - Providing extra time to complete assignments and tests
 - Giving preferential seating arrangements
 - Using enlarged print materials and visual aids
 - Providing individualized support and attention
 - Using multi-sensory teaching methods
 - Other (please specify):
3. What challenges have you encountered in implementing inclusive teaching strategies? (Check all that apply)

- Lack of specialized training
- Lack of resources (e.g., assistive technologies, adapted materials)
- Large class sizes
- Negative attitudes and stigma
- Other (please specify):

Section 3: Teacher-Student Interactions and Communication Methods

1. How often do you interact with students with low vision in your class?
 - Rarely
 - Occasionally
 - Frequently
 - Always

2. What communication methods do you find most effective when working with students who have low vision? (Check all that apply)
 - Verbal communication
 - Non-verbal cues (e.g., facial expressions, gestures)
 - Tactile communication (e.g., guiding students' hands)
 - Written communication (e.g., large print, braille)
 - Other (please specify):

3. In what ways do you tailor your communication to meet the needs of students with low vision? (Check all that apply)
 - Speaking clearly and loudly
 - Using visual aids and gestures
 - Providing written materials in large print
 - Repeating instructions and providing additional explanations
 - Using tactile materials and demonstrations
 - Other (please specify):

4. What challenges have you encountered in communicating effectively with students with low vision? (Check all that apply)
 - Limited knowledge of specific communication strategies
 - Difficulty assessing student understanding

- Limited time for individual interaction
- Other (please specify):

Section 4: Utilization of Assistive Devices and Technologies

1. Are there assistive devices or technologies available in your school to support students with low vision?
 - Yes
 - No
2. If yes, which assistive devices or technologies are available? (Check all that apply)
 - Magnifiers
 - Large print materials
 - Screen readers
 - Refreshable braille displays
 - Other (please specify):
3. How often do you utilize assistive devices or technologies in your teaching for students with low vision?
 - Rarely
 - Occasionally
 - Frequently
 - Always
4. In your opinion, how have assistive devices and technologies impacted the learning experiences of students with low vision in your class? (Please elaborate)
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Section 5: Teacher Training and Professional Development

1. Have you participated in any teacher training or professional development programs specifically focused on teaching students with low vision?
 - Yes
 - No

2. If yes, when did you last participate in such a program?
- Within the past year
 - 1-3 years ago
 - More than 3 years ago

3. In your opinion, how effective have these training programs been in preparing you to support the learning outcomes of students with low vision?
- Not effective at all
 - Somewhat effective
 - Moderately effective
 - Very effective

4. What specific aspects of teacher training do you believe have contributed to better support for students with low vision? (Please elaborate)

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5. In your opinion, what areas of professional development could further enhance teachers' ability to support the learning outcomes of children with low vision? (Please elaborate)

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Section 6: Instructional Strategies

1. What instructional strategies do you typically use when teaching students with low vision? (Check all that apply)
- Providing clear and concise instructions
 - Using visual aids and demonstrations
 - Providing opportunities for hands-on learning
 - Encouraging peer collaboration and support

Other (please specify):

2. How do you adapt or customize your instructional strategies to meet the diverse needs of students, including those with low vision? (Please elaborate)

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3. How do you assess the effectiveness of your instructional strategies in supporting the learning outcomes of students with low vision? (Please elaborate)

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Section 7: Closing

1. Based on your experience, do you have any additional comments or suggestions regarding inclusive education and teaching students with low vision?

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Thank you for your participation!

QUESTIONNAIRE FOR STUDENTS WITH LOW VISION

Section 1: Background Information

1. Please provide your age: _____
2. What is your gender?
 - Male
 - Female
3. What grade are you in?
 - Primary
 - Secondary

Section 2: Inclusive Teaching Strategies

1. How do you perceive the instructional strategies used by teachers in relation to your learning as a child with low vision? (Please elaborate)
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2. Are there specific instructional strategies that you find particularly effective or ineffective?
 - Yes (Please specify:)
 - No
3. What specific aspects of teacher training do you believe have contributed to better support for students with low vision? (Please elaborate)
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4. In your opinion, what areas of professional development could further enhance teachers' ability to support the learning outcomes of children with low vision? (Please elaborate)

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Section 3: Teacher-Student Interactions and Communication Methods

- 1. How would you describe your interactions with your teachers?
 - Very positive
 - Positive
 - Neutral
 - Negative
 - Very negative

- 2. How do your teachers tailor their communication to meet your needs as a student with low vision? (Please elaborate)

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Section 4: Utilization of Assistive Devices and Technologies

- 1. Are there assistive devices or technologies available to you in school?
 - Yes
 - No

- 2. If yes, which assistive devices or technologies do you use? (Check all that apply)
 - Magnifiers
 - Large print materials
 - Screen readers
 - Refreshable braille displays
 - Other (please specify):

- 3. How have assistive devices and technologies positively impacted your learning experience? (Please elaborate)

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Section 5: Closing

1. Based on your experience, do you have any additional comments or suggestions regarding inclusive education and support for students with low vision?

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Thank you for your participation!

QUESTIONNAIRE FOR CHILDREN WITH LOW VISION

1. How often do your teachers use inclusive teaching strategies to support your learning as a student with low vision?

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2. Can you provide examples of inclusive teaching strategies that you believe have positively impacted your learning experience in G.S. Rwisirabo?

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3. How would you describe the interactions between teachers and students with low vision in G.S. Rwisirabo?

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4. In what ways do communication methods employed by teachers influence your learning as a child with low vision?

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5. Are there specific assistive devices or technologies that you feel are lacking or underutilized in your learning environment?

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6. How have assistive devices and technologies positively impacted your learning experience in G.S. Rwisirabo?

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7. What specific aspects of teacher training do you believe have contributed to better support for students with low vision?

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8. In your opinion, what areas of professional development could further enhance teachers' ability to support the learning outcomes of children with low vision?

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9. How do you perceive the instructional strategies used by teachers in relation to your learning as a child with low vision?

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10. Are there specific instructional strategies that you find particularly effective or ineffective in G.S. Rwisirabo?

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INTERVIEW GUIDE FOR CHILDREN WITH LOW VISION

Introduction:

1. Hello, my name is UWIRINGIYIMANA Pacifique. I am a Master Student at the University of Rwanda, studying for a Master's in Education in Special Needs Education. Today, we'll be discussing your experiences at school.

Background Information:

1. Personal Background:

- Can you tell me which grade you are in, your age, and how long you have been attending G.S. Rwisirabo?

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2. Experiences at School:

- What are some things you enjoy about school, and are there any challenges you face?

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Inclusive Teaching Strategies:

3. Inclusive Teaching Strategies:

- How do you feel about the inclusive teaching strategies used by your teachers?

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4. Impact of Teacher-Student Interactions:

- In your opinion, how do teacher-student interactions and communication methods affect your learning?

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Assistive Devices and Technologies:

5. Availability and Utilization of Assistive Devices:

- Are there assistive devices or technologies available to you, and do you use them?

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6. Impact of Assistive Devices:

- How have assistive devices and technologies influenced your learning experience?

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Teacher Training and Professional Development:

7. Influence of Teacher Training:

- Do you think the training teachers receive has an impact on how they support students like you?

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8. Areas for Improvement:

- Are there areas where you think teacher training could be improved to better support students with low vision?

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Instructional Strategies:

9. Perception of Instructional Strategies:

- How do you perceive the instructional strategies used by your teachers?

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10. Effective and Ineffective Strategies:

- Can you share specific strategies that you find effective or ineffective for your learning?

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Closing:

11. Additional Thoughts:

- Is there anything else you'd like to share about your experiences or anything we haven't discussed?

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12. Appreciation:

- Thank you so much for sharing your thoughts and experiences with me. Your input is valuable.

INTERVIEW GUIDE FOR TEACHERS

Introduction:

1. Hello, my name is UWIRINGIYIMANA Pacifique. I am a Master Student at the University of Rwanda, studying for a Master's in Education in Special Needs Education. Today, we'll be discussing your experiences in teaching, particularly with students who have low vision.

Background Information:

2. Teaching Background:

- Can you provide some information about your teaching experience, the subjects you teach, and your experience with students who have low vision?

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Inclusive Teaching Strategies:

3. Use of Inclusive Teaching Strategies:

- How do you incorporate inclusive teaching strategies in your classroom, particularly for students with low vision?

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4. Challenges and Successes:

- What challenges have you encountered in implementing inclusive teaching strategies, and can you share some success stories?

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Teacher-Student Interactions and Communication Methods:

5. Interactions with Students:

- How do you interact with students, especially those with low vision, to create an inclusive and supportive learning environment?

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6. Communication Approaches:

- What communication methods do you find most effective when working with students who have low vision?

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Utilization of Assistive Devices and Technologies:

7. Availability of Assistive Devices:

- Are there assistive devices or technologies available in your school, and how do you utilize them in your teaching?

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8. Impact on Teaching:

- How have assistive devices and technologies impacted your teaching methods and the learning experiences of students with low vision?

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Teacher Training and Professional Development:

9. Training and Development:

- Have you undergone any specific training or professional development programs related to teaching students with low vision?

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10. Effectiveness of Training:

- In your opinion, how effective have these training programs been in preparing you to support the learning outcomes of students with low vision?

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Instructional Strategies:

11. Choice of Instructional Strategies:

- Can you discuss the instructional strategies you commonly use and their effectiveness in supporting students with low vision?

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12. Adaptation and Customization:

- How do you adapt or customize your instructional strategies to meet the diverse needs of students, including those with low vision?

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Closing:

13. Recommendations:

- Based on your experience, do you have any recommendations for improving the inclusivity of education for students with low vision?

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14. Appreciation:

- Thank you for sharing your insights and experiences. Your input is valuable in understanding and improving teaching practices for students with low vision.

INTERVIEW GUIDE FOR HEAD TEACHER

Introduction:

1. Hello, my name is UWIRINGIYIMANA Pacifique. I am a Master Student at the University of Rwanda, studying for a Master's in Education in Special Needs Education. Today, we'll be discussing the inclusive education practices and policies at your school, particularly regarding students with low vision.

Background Information:

2. School Overview:

- Can you provide an overview of the school, including its size, student population, and any existing programs or initiatives related to inclusive education?

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3. Inclusive Education Policies:

- What inclusive education policies does the school currently have in place, especially concerning students with low vision?

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Support for Teachers:

4. Teacher Training Programs:

- Are there specific training programs or professional development opportunities for teachers to enhance their skills in teaching students with low vision?

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5. Resources and Support:

- How does the school provide resources and support for teachers to implement inclusive teaching strategies for students with low vision?

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Assistive Devices and Technologies:

6. Availability of Assistive Technologies:

- Are there assistive devices or technologies available in the school to support students with low vision, and how are they integrated into the learning environment?

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7. Training for Device Usage:

- Do teachers receive training on how to effectively use and incorporate assistive devices and technologies in their teaching?

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Monitoring and Evaluation:

8. Assessment of Inclusive Practices:

- How does the school assess and evaluate the effectiveness of inclusive practices, particularly in relation to students with low vision?

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9. Feedback Mechanisms:

- Are there mechanisms in place to gather feedback from teachers, students, and parents regarding the inclusivity of education for students with low vision?

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Challenges and Solutions:

10. Identified Challenges:

- What challenges, if any, has the school identified in implementing inclusive education for students with low vision?

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11. Solutions and Improvements:

- What strategies or initiatives has the school implemented or considered to address these challenges and improve the inclusivity of education?

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Closing:

12. Vision for Inclusive Education:

- What is the school's vision for inclusive education, and how does it align with the broader educational goals and policies?

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13. Appreciation:

- Thank you for sharing your insights and experiences. Your perspective as the Head Teacher is crucial in understanding the overall inclusive education framework at the school.

Teacher-Student Interactions:

6. How would you describe your interactions and communication methods with students with low vision in your class?

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7. In what ways do you tailor your communication to meet the needs of students with low vision?

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Assistive Devices and Technologies:

8. Are there assistive devices or technologies available to you for supporting students with low vision?

- Yes
- No

9. How often do you utilize assistive devices or technologies in your teaching for students with low vision?

- Rarely
- Occasionally
- Frequently
- Always

Professional Development:

10. Have you participated in any teacher training or professional development programs specifically focused on teaching students with low vision in the past year?

- Yes
- No

HEAD TEACHER'S QUESTIONNAIRE

Introduction:

1. Please provide your age:

Background Information:

2. How many years have you been serving as a head teacher?

- Less than 1 year

- 1-5 years

- 6-10 years

- More than 10 years

3. What is the total enrollment of students in your school?

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Inclusive Education Practices:

4. How would you describe the current state of inclusive education in your school, particularly for students with low vision?

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5. What policies or practices does your school have in place to ensure the inclusion of students with low vision?

Support and Resources:

6. What resources are available in your school to support students with low vision? (e.g., assistive technologies, trained personnel)

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7. How do you ensure that teachers are adequately trained and equipped to support students with low vision?

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Challenges and Solutions:

8. What challenges, if any, have you identified in providing effective inclusive education for students with low vision?

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9. What strategies or initiatives have you implemented or plan to implement to address these challenges?

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Collaboration and Communication:

10. How is communication and collaboration facilitated among teachers, parents, and support staff to ensure the success of students with low vision?

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.....

Closing:

11. Any additional comments or suggestions regarding inclusive education and the support of students with low vision in your school?

Appreciation:

12. Thank you for taking the time to complete this questionnaire. Your insights are valuable in understanding the role of school leadership in promoting inclusive education for students with low vision.

INCLUSIVE EDUCATION CHECKLIST FOR STUDENTS WITH LOW VISION	Yes	No
1. Are teachers trained in inclusive teaching strategies?		
2. Is there an accessible curriculum for students with low vision?		
3. Are there assistive devices and technologies available in classrooms?		
4. Do teachers use varied communication methods to support students with low vision?		
5. Is there a system for regular teacher-student interactions?		
6. Are there specific teacher training programs for supporting students with low vision?		
7. Does the school provide necessary assistive devices and technologies for students with low vision?		
8. Is there an ongoing professional development program for teachers?		
9. Are instructional strategies tailored to the needs of students with low vision?		
10. Is there collaboration between teachers and support staff to assist students with low vision?		



UNIVERSITY of
RWANDA

COLLEGE OF EDUCATION

TO WHOM IT MAY CONCERN

Dear Sir/ Madam,

Re:

The School of Inclusive and Special Needs Education offers a master's degree in special Needs Education. As part of the academic requirements students must write their dissertation on a topic of their choice after conducting a research study.

In order to facilitate them complete their studies we seek for you cooperation in allowing the above named student conduct his/her research on the topic:

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to collect data in your Institution/ Organization. This will enable the student to write his dissertation.

In case you require any other information regarding this exercise you are welcome to contact the School of Inclusive and Special Needs Education.

Thank you for your cooperation.

Sincerely yours.,

Done at UR-CE on:...

Ass.Prof. Evariste Karangwa

Dean, School of Inclusive and Special Needs Education

Email: karangwa28 ymail.com

Tel: 0785489767/ 0788809234





College of Education

School of Inclusive and Special Needs Education

CERTIFICATION OF CORRECTIONS MADE

I the undersigned certify that as the Main reader of this thesis, I have checked that the corrections required have been made, and hereby recommended for acceptance by University of Rwanda the final copy of the thesis entitled:

The effect of Teachers' Approaches on the Learning Outcomes of Children with Low Vision in Selected School in Nyagatare District

Name of student: **UWIRINGIYIMANA Pacifique**

Student's Number: **220018266**

This is in fulfillment of the degree of Masters of Inclusive and Special Needs Education/ School of Inclusive and special needs Education.

Name: Dr. BIZIMANA Barthelemy

Signature:

Date:04/10/2024

Republic of Rwanda

University of Rwanda

College of Education

Nyagatare District

Tel: 0788534819

Email: paciwiri20@gmail.com

On 24th July, 2023

*Received
by Atlewele
Duc
Nduko*



To, Headmaster of GS Rwisirabo

Dear sir,

RE: Requesting permission for data collection

I am pleased to write this letter to request permission for data collection in the school that you are heading.

In fact, I am a student of Masters of Education in Special Needs Education from the University of Rwanda College of Education Rukara Campus. We are on the step of collecting data on different topics depending on our choice. On my side, I have chosen to collect my data in your school about "The Effect of Teachers' Approaches on the Learning Outcomes of Children with Low Vision in Selected School in Nyagatare District". I have attached a recommendation letter from the University of Rwanda College of Education.

Once given this opportunity of collecting data in your school, I assure you that all protocols, rules, and regulations will be followed, and privacy regulations adhered to.

I am waiting forward to hearing from you.

Your faithfully,

Pacifique UWIRINGIYIMANA

Approved by: