



**EDUCATIONAL BARRIERS TO LEARNING FACED BY
LEARNERS WITH VISUAL IMPAIRMENTS IN G.S.
GAHINI INCLUSIVE SCHOOL, KAYONZA DISTRICT**

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DECLARATION

I hereby declare that this project is my original work except for citations and quotations which have been duly acknowledged. I also declare that it has not been submitted for any other degree or award in any other institution.

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DECLARATION BY THE SUPERVISOR

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DEDICATION

I hereby dedicate this work to all people who contributed towards the completion of my degree course in one way or another.

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ABSTRACT

The general objective of the study was to investigate barriers to learning faced by learners with visual impairments in Kayonza District. The specific objectives were to find out challenges faced by learners with visual impairment in a regular classroom, to find out the methods teachers use when teaching learners with visual impairment and to find out the modes of communication that teachers in regular school use to communicate with visually impaired learners. The target population was 66 respondents. 28 learners and 38 teachers were targeted. The data collected was analyzed through thematic or content analysis on interview items that were open ended and observations made while tables and graphs were used on interview items relating to social and demographic characteristics of the respondents. From the findings, the study revealed that learners with visual impairment in regular school experienced some challenges which among others included; lack of specially trained teachers in special needs education to cater for their learning needs and interests, inadequacy of appropriate equipment and learning materials, inappropriate teaching materials and methods, negative attitudes of teachers towards the education of the handicapped children and high teacher—pupil ratio in class among others. From the study, the following recommendations were made. There is need for the government and other stakeholders to come up with strategies to train the teachers teaching the students in an inclusive setting in order to empower them with appropriate knowledge to be able to handle learners in an inclusive setting effectively but also The government and other stakeholders should ensure that they provide assessment personnel and facilities in inclusive schools in order to ensure timely and proper assessment of learners who are having visual impairment.

Keywords: learners with visual impairment, regular classroom and mode of communication

LIST OF ACRONYMS/ABBREVIATIONS

CBC	Competence Based Curriculum
CBR	Community-based rehabilitation
CWDs	Children with disabilities
GDP	Gross Domestic Product
GoR	Government of Rwanda
IMF	International Monetary Fund
EFA	Education for All
ESSP	Education Sector Strategic Plan
MINEDUC	Ministry of Education
SAQ	Self-Administered Questionnaire
SDGs	Sustainable Development Goals
SE	Special Education
SEN	Special Educational Needs
SNE	Special Needs Education
SN&IE	Special Needs and Inclusive Education
SPSS	Statistical Package for Social Sciences
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children’s Education Fund

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CHAPTER ONE

GENERAL INTRODUCTION

1.0 Introduction

This chapter comprises the background to the study, problem statement, general and specific objectives, significance, scope, limitations and organization of the study.

1.1. Background of the study

Inclusive education refers to the process of addressing and responding to the diversity of needs of all learners. It involves changes and modifications in content, structures and strategies with common vision, which covers all children in the appropriate age range and is conversed on the principles that all children have a range of different abilities; all children can experience difficulties in learning (Smith, Tom, Allyn & Bacon 1998). An inclusive education initiative often has a particular focus on those groups, which, in the past, have been excluded from educational opportunities. These groups include children living in poverty, those from ethnic and linguistic minorities, girls (in some societies), children from remote areas and those with disabilities or other special educational needs. The latter are often the most marginalized both within education and in society in general (Lewis, 2002).

The Education for All (EFA) movement was launched at the World Conference on Education for All in Jomtien, Thailand in 1990 with the aims at providing all children, young people and adults the right to education. A decade after its declaration, its vision was reaffirmed at the World Education Forum meeting in Dakar, held to review progress in achieving Education for All (World Education Forum, 2000). The Forum highlighted the continuing barriers to education experienced by disadvantaged groups and called for positive action to overcome them. The impetus for inclusive education came from the 1994 World Conference on Special Needs Education in Salamanca. The conference recommendations were based on the principle of

inclusion: „schools should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions“ (UNESCO, 1994, Framework for Action on Special Needs Education).

According to UNESCO report of the year 2000, there are around 30 million children in India suffering some form of disability, among India's 200 million school-aged children (6-14yrs), 20 million require special needs education. While the national average gross enrollment in school is over 90%, less than 5% of children with disabilities are in schools. The Indian government and NGOs are however initiating measures to review and plan appropriate strategies for special needs and inclusive education. Before 18th Century, education was not considered important for the visually impaired persons. Persons with visual impairments were viewed with contempt and lived in ignorance and abject poverty (Rex, Koenig, Wormsley & Baker, 1995) It was noted until the 18th century that people started developing positive attitudes towards persons who were blind and considered them as capable and worthy of being education. France was the first country to champion positive attitudes towards blindness with the introduction of the first school for the blind children in 1784, followed by the United Kingdom in 1791, Germany in 1806, Sweden in 1809 and United States in 1829 (Moodley, 2002).

Dissatisfaction with the progress towards SNE has caused demands for more changes in many African countries according to Simon, Echeita, Sandoval and Lopez (2010). The Nigerian constitution makes a provision for suitable education for all children. Inclusion in Nigeria has not been well implemented since the number of children with special needs stands at 0.42% while that of their regular counterparts is around 67.05%. Inclusion of all learners in the mainstream schools is part of an international agenda which calls for the full inclusion of all pupils with learning disabilities into all aspects of life (Barton, 2009).

The situation of people with disability in Rwanda more or less mirrored that of people with disabilities in other parts of the world. In Rwanda the first school for students with disability was built in the 1960's by Roman Catholic organizations at Gatagara in the Southern Province. Since then, a number of other special schools have been built, although they are still too few to take care of the number of Rwandan learners with special educational needs. In 1997 the Ministry of

Education at the time set up a Department of special Education to promote Special Needs Education in Rwanda. Similarly, in the year 2000 Kigali Institute of Education set up a resource center, among whose responsibilities was to cater for the needs of learners with disabilities (Karangwa & Kabano, 2004). The policy on special needs education is an instrument for full implementation of Article 40 of the 2003 constitution of Rwanda, which provides education and provisions for education of all learners regardless of the nature of their needs. It is also in consonance with the national commitment to both the UN Convention on the Rights of a Child and the African Charter on the Rights and Welfare of a Child (Karangwa & Kabano, 2004). Therefore, Rwanda being a young country struggling to develop inclusive education is facing a lot of constraints such as inflexible curriculum, inappropriate communication, inaccessible and unsafe environments, inadequately and inappropriately trained lecturers and overcrowded classrooms among others (Ministry of Education, 2007). It is with these constraints that the researcher felt that there was a need to carry out a research in inclusive education for learners with Visual Impairment.

1.2 Problem Statement

Inclusive education is the process of strengthening the capacity of ordinary schools to educate all children within their communities (UNESCO, 2008). Therefore, enabling teachers through skills development programmes to withstand the challenges experienced by learners is significant, specifically in dealing with those with vision impairment, which was the focus of this study. Teacher development, in-service training, and capacitation also play significant roles towards successful inclusion of LVIs, as these enable them to face daily challenges and alleviate their frustration.

The World Health Organization (2011) estimates that worldwide, approximately 284 million people are visually impaired. Of these, 39 million are blind and 245 million have low vision. Moreover, according to the World Health Organization (2011a), some 90% of the world's visually impaired population lives in developing countries. With this regards, UNESCO (2009) whispered that large number of learners with disabilities in developing countries do not attend schools, few of them who were registered in special schools where they were away from their families, friends, and peers, they were marginalized and had not given a chance to study in the

same school with their peers where they had to enjoy school life like to play, to learn, to grow up with siblings.

It is a national policy that children regardless of their age, sex and ability should attain appropriate education in their nearest schools. However, the performance of children with visual impairment in the regular schools has been noted to be poor in comparison with their sighted peers. Learners with visual impairment like all other children should benefit from the school learning environment but this seems to be far from reality at the moment. Karangwa et al (2016) observed that VIS in HVP-Gatagara-Rwamagana generally performed poorly with low grades in Science subjects, compared to their performance in arts and language subjects. For example, the average performance in S.2 of second term 2011 indicated the following records: Chemistry- 50%, Physics- 33.3%, Biology- 26.7%, while Kinyarwanda average recorded 87.3%. The teachers' explanations on the performance was that they (teachers) lack adequate training related to the specific educational needs of VIS, and the few and rare workshops organized by the Ministry of Education (MINEDUC) and HVP-Gatagara do not necessarily equip them with sufficient skills in teaching the particular category of learners. They have continued to perform poorly. It is for this reason that the researcher seeks to investigate the learning barriers experienced by visual impaired learners in regular school.

1.3. General Objective

The general objective of this study was to examine the educational barriers to learning faced by learners with visual impairments in Kayonza District.

1.3.1 Specific Objectives

The study was guided by the following objectives:

- i. To find out challenges faced by learners with visual impairment in a regular classroom.
- ii. To find out the methods teachers use when teaching learners with visual impairment.
- iii. To find out the modes of communication that teachers in regular school use to communicate with visually impaired learners.

1.3.2. Research Questions

- i. What are the challenges faced by learners with visual impairment in a regular school?
- ii. Which methods do teachers use in teaching children with visual impairment?
- iii. What mode of communication do teachers use to instruct visually impaired learners in regular schools?

1.4. Significance of the Study

This study was undertaken so as to know the educational challenges and difficulties that hinder the learning of learners with visual impairments. The study will fulfill a major need for studies on inclusion of learners with visual impairment in the country by providing data from which future educational policies on inclusion could be based in Rwanda.

Knowledge of the barriers by learners with visual impairments may help the Rwandan Education planners in designing of appropriate inclusive education programmes suitable to the needs of learners with visual impairments. It may be of importance to the Ministry of Education because it may assist in determining quality education for learners with visual impairments in inclusive colleges. The results may help to change the attitudes of the administrators, teachers, non-disabled learners in G.S Gahini Kayonza District and also the community at large towards the achievement and acceptance of learners with visual impairment in inclusive society.

1.5. Scope of the Study

This study was delimited in content, space and time. In content scope, this study was guided by different theories acquired in different subjects. It covered only the research independent variables and dependent variables. Regarding geographical scope, the present research study is based on the information collected from different respondents of G.S Gahini in Kayonza District. Concerning time scope, the study covered a duration of three years; starting from 2017 to 2019.

This interval was crucial because it helped the researcher to collect data on learners with special educational needs in inclusive secondary schools

1.6. Limitations of the Study

The study was to investigate barriers faced during learning of learners with visual impairments in G.S Gahini Kayonza District. During this study many limitations arose. First, this study was carried out in one school practicing inclusive education. Therefore, the findings cannot be generalized to other inclusive school. Another limitations was the spread of COVID 19 that did not allow the researcher to execute his plan

1.7. Definitions of terms

Co-teaching- This is an approach of teaching that involves two or more teachers teaching in one class concurrently. In the case of this study one of the teachers has to be special needs education teacher specialized in visual impairment (Kane, 2011).

Inclusive education- This is a kind of education that guarantees education to all learners regardless of gender, religious background, race and disability status. In this case inclusion involves disability of learners with visual problems (Laha, 2014).

Individual education plan- this is a both short term and long term plan usually a year or term prepared by teachers of learners with special needs on a specific learner's achievements and weaknesses and teaching strategies so as to improve the learner's weak areas (Jane, 2014).

Mainstream schools- These are general schools that any learner with no special need attends for normal learning process then those with special needs are also included. This is in comparison to the case where learners with special needs are taught separately in special schools (Gandal, 2009).

Visual impairment- This a general term to refer to the situation where people have eye problems. These can either be blind or having low vision (Kassie, 2011).

1.8. Conclusion

This chapter provided an introduction to the study that discovered barriers to learning faced by students with visual impairments in Kayonza District. The researcher provided an orientation of the study to make readers aware of the problem under investigation. The statement of the problem addressed the justification of the researcher on the current study and what the study strives to achieve. The significance of the study was highlighted and paved a way for investigation on the research questions which acted as guidance for stating the objectives to be achieved. The scope and limitation of the study are stated; the key concepts from the study topic were defined and clarified to make the study more understandable to the readers

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter of literature review provides a description of key concepts, a review of existing issues that have been explored and studied by different authors about the topic. It is basically related to the views extracted from the books, journal articles, internet sources and research websites.

2.1. Conceptual literature

Spungin (2002) defines visual impairment as a challenge encounter in relation to one's ability to see. In this regard it is grouped into either blindness or low vision. Considered to be blind are those who can see objects at 20 feet and below while sighted people can see same objects 200 feet while those considered to have low vision can see up to 20 feet of objects when the sighted ones can see same objects at 70 feet. People use visual information to observe and interpret the information in their environment

Abang (2005) defines visually impaired individuals as those who have problems with their vision that can be provided remedies either by surgery or providing optical correction. This includes both the blind and those with low vision. Anomonye (1982) has his definition for visual impairment as the act of having visual performance that is reduced. The said reduction was in comparison to that of the normal vision.

Sacks and silberman (1998), argues that teachers need to understand the impacts that visual impairment has on learning. He agrees that when learner's vision is impaired then a number of skills are affected. These include language skill, problem solving, reasoning and abstract thinking. Such have adverse effect on a learner's academic performance. A learner who has learning difficulties that hinders them from learning is said to be having special needs and hence

the need for a special educational program. (Hearty 1993) therefore teachers should consider as much as possible and address the learning difficulties and differences as well as the styles of learning among these learners (Mmbaga 2002).

2.1.1 Visually Impaired Need in the Learning Situation

IDEA (2004) defines visual impairment as an impairment of one's vision in a way that even with correction it affects one's academic performance. Paul (2017) asserts that one's ability to see gives them tremendous ability to access and learn about the world they are in. They are able to conceptualize on things and explain the outlook of different things, their size, the physical environment as well as the hazards they may be approaching.

Alberta (1996) argued that students with visual impairment at times exhibit fewer natural learning experiences. This is associated to the fact that they are not able to see objects as well as interactions. Main areas of learning that are adversely affected include developing concept, skills on interpersonal communication, life skills, orientation and mobility as well as the academic development. Lumbardi (2017) emphasizes that much learning typically depends on and occurs visually. He puts it out that when visual impairment occurs in early life then development of some skills is delayed.

2.1.2. The Concept of Inclusive Education

Inclusive education, according to UNESCO (2008) is a process of addressing and responding to the diversified needs of all the learners. The increase of participation of learners, culture and communities and to reduce exclusion from education. The aim is to ensure that the education system facilitates an environment where teachers and learners can accept and cope up with the problems and the goodness of that diversity. In this inclusive educational method, an environment is fostered where needs of the individual learners are catered for and all the learners have the opportunity to succeed. An Inclusive Education program prepares teachers in a way that they are able to meet the various needs of all students in any given classroom, including those from diverse racial, cultural, linguistic, socioeconomic backgrounds as well as students with disabilities.

2.1.2.1 The Philosophy of Inclusive Education

As stated by Alberta 2010 inclusion is the pillar of today's education system. He asserts that it provides accommodation to all the learners. This inclusion provides an assurance of success, equal participation and that is of quality to all learners. This is usually regardless of their diversified abilities. It means that every individual has the duty and responsibility of perceiving and handling themselves as well as others with much dignity with a view of enhancing their potentials (Burden 2000).

The objective of inclusive education therefore is to ensure that all the students are provided with an environment that is most appropriate for learning as well as providing them with opportunities that are best for them to attain their potentials (Alberta 2010). Inclusion starts by first acknowledging that every child as well as their family have the right to get an access to education of high quality. This right cannot be curtailed by having any special needs. The intention of inclusion therefore is to take out anything that bars full acceptance, participation as well as learning for every child. It acknowledges that most of the problems that are associated to special needs are embedded to social and cultural attitudes as well as practices.

2.1.2.2 Historical Development of Inclusive Education

The 1945 universal declaration of human rights required every citizen to get education that is appropriate irrespective of gender, race, color and disability status (UDHR,). In most countries children failed to get education due to their background. According to the Jomtien (1995) Special needs conference appreciated that inclusive education was the only cure to the problem so as to achieve education for all. At first there was institutionalization of persons with disabilities with a view of protecting them from the killings that were going on and brutality against them in Europe. They were put in asylums a place where they could be given food and clothes only without education (Bender, 1970).

By 15th century, learners who were having sensory impairments were being given a chance for special education and by 1950s, they were being grouped according to disability especially in the

Scandinavian countries (Welfaceberge, 1972). However, these institutions were considered to be artificial and counterproductive and hence the need for integration of these learners to the normal community setting (JohnKimson, 1997).

Report from UNESCO (1995) demonstrated that in the 1980s there was many special schools and units which were established all over Africa. These institutions were for all areas of disability despite the countries having purported to have abolished such. At the same time, there was a professional advocacy group in U.S.A that claimed that integration policy did not go far and hence launching a movement known as regular education initiative (REI) movement. This movement championed for bringing together special schools and regular schools (Skritic, 1991).

Author Jenkinson (1997) pointed out that another movement was started by groups of advocacy which includes Association for persons with severe disability (ASD) among others and that promoted the rights of such people. Just as REI was doing ASD advocated for bringing together of regular schools and special schools. Further, they argued that the schools needed to be re-structured in order to accommodate all the learners (Ainscow, 1991, 1994; Jankison, 1997).

Information from UNESCO (1986) illustrated that there was a survey carried out to establish how teacher were being trained in eleven countries from across all the continents revealed that the teachers' willingness to provide educational services for the students who are having special needs was there. However, they had a feeling that they had no knowledge and skills that were required for the same.

Consequently, a project to develop materials and teaching strategies was started under the leadership of Prof Mel Ainscow. Workshops were held in all the continents and culturally acceptable materials were prepared (UNESCO, 1993). Following the success of the materials made by the workshop, a UNESCO conference at Salamanca in Spain was held in 1994 and among other deliberations the conference agreed to eliminate all the practices that were excluding the learners with special needs from their normal counterparts (UNESCO, 1994).

2.1.2.3. Concept of special needs education (SNE)

Despite the differences between individuals (individual differences), most people do not differ too significantly from each other. These differences tend to be near a common average. For instance, most people are not too tall or too short; too fat or too thin; too clever or too slow. When some individuals differ significantly from the norm, they may encounter varying degrees of problems.

Special needs that have a bearing on school work and education are generally referred to as "special educational needs". A student with special educational needs cannot learn properly if the teacher uses teaching methods and aids designed to benefit the average student. Children with special educational needs concerns: Children with learning and/or behavior problems, children with physical disabilities, and children who are intellectually gifted. "... (They) are those whose differences from the norm are large enough to require a specially designed instructional program if they are to benefit fully from education" (Heward and Orlansky, 2002: 52).

It involves looking critically at all those factors that may have a bearing on the education of a child with special educational needs and seeing how these factors can be adapted to the needs of this child. These will include factors in the class, in the school environment, in the family, in the school curriculum, and so on. In short, making it possible for children with special educational needs to benefit fully from educational provision is the concern of Special Needs Education.

UNESCO (2014) refers special education needs as:

"Education designed to facilitate the learning of individuals who, for a wide variety of reasons, require additional support and adaptive pedagogical methods in order to participate and meet learning objectives in an educational programme. Reasons may include (but are not limited to) disadvantages in physical, behavioural, intellectual, emotional and social capacities. Educational programmes in special needs education may follow a similar curriculum as that offered in the parallel regular education system, however they take individuals' particular needs into account by providing specific resources (e.g. specially trained personnel, equipment, or space) and, if appropriate, modified educational content or learning objectives."

Special Needs Education is education for students with disabilities, in consideration of their individual educational needs, which aims at full development of their capabilities and at their

independence and social participation. Special Needs Education is carried out in various forms, including in resource rooms, in special classes (both are in regular schools), and in special schools named “Schools for Special Needs Education”.

Supporting Braille learning and uses by adapting transcription to user’s needs

New technologies are increasingly making digital data access easier, especially considering the use of Content Management System (CMS), of educational platforms and many other communication tools. The amount of online information grows steadily in all fields -school, industry, business. Therefore, the CMS is a very precious publication tool for many especially for e-learning practices. Inclusive education issues are still very active in a lot of scientific domains: assistive technologies, teaching methods, ergonomics...

Concerning visually impaired students, Archambault (2005) notices the numerous and various papers proposed to the International Council for Education of People with Visual Impairment under the topic “Inclusive Educational Practices”. Moreover, he insists on the vocabulary used in English (inclusive education) and French (integration) to underline the difficulties encountered for a real inclusion of students into a class. Visual impairment remains a real problem for both teacher and student, because most teachers are not skilled in Braille and only few solutions are designed to teach Braille inside a classroom. In this section, we focus on Braille user and give an analysis of what a good automatic transcribing tool should propose to be suitable for inclusive education and for Internet contents.

Transcribing into Braille is not, as one should think, just a plain transcoding of characters. Braille users are mainly blind persons and transcribers. However, a transcriber is not necessarily professional - for example, a teacher with a blind student in his class needs to transcribe his documents into Braille. Conversely, a blind student writing in Braille with his computer is not able to make a transcription than his teacher can understand. Many countries, such as France, tend to integrate most blind students into general courses. Different types of Braille codes are mentioned: the literary code (transcribing each character of the initial document), the abbreviated code (reducing the number of characters thanks to complex contraction rules), the mathematical

code (Fred, 2010), the musical code. Each language has its own number of characters (no accents in English but many sorts of accents in other languages). Therefore, each language has its own Braille codes (Heller, 2003), if not each country (British and American codes are different)

2.1.2.4. Concept of inclusion in Rwanda

Most of young Rwandans with Special Needs appear to attend ordinary schools which are increasingly adjusting their teaching/learning approaches and environments to accommodate them. These include over 120 Child-Friendly Schools or Inclusive schools often supported by international organizations such as African Development Relief Agent (ADRA) and Handicap International through their collaboration with UNICEF, European Union (EU) and MINEDUC. It is the practice and services in these settings that actually constitute much of the present reports. (Karangwa & Kabano, 2004).

The Child-Friendly Schools“ (CFS) initiative in Rwanda is clearly an innovative educational strategy that is geared towards ensuring that schools are transformed into centers of effective delivery of quality education for all learners irrespective of their differences, abilities and constraints. The learners with disabilities who are included are those with visual impairment, hearing impaired and those with physical disabilities.

The survey affirmed that by supporting CFS initiatives with Inclusive education inputs, an indirect outreach program to the children at risk is easily accommodated. Besides, the field survey proved beyond any reasonable doubts that the 9 Year Basic Education (9YBE) strategies offers yet more openings for this category of disadvantaged learners by providing improved access to 12 years of basic education in the neighborhood of their communities. However, all the teachers met testified that, because they were obliged to stick to the traditional program and methods of work, they had no room to attend to the needs of learners with severe SEN. This challenge is coupled with other challenges they shared with those in special schools and centres, which is inadequate skills, resources, budget, information and unsupportive infrastructure and culture (Ministry of Education Research 2010).

Adjustment of the School Environment to reinforce Inclusive/ Child-Friendly School Environment (Social & Physical) is a key contributor to ensuring equal and sustained access to learning and teaching for all, also appeared to meet many attitudinal and resource constraints in many schools and centers. Though the Ministry of Education has provided standards for school infrastructural developments, there was hardly evidence that these are known. In other words, developing accessible infrastructure and resources; appropriate attitudes and school policies, rendering all school fully accessible for even those at risk of exclusion still required joint efforts of both the community and government stake holders (Ministry of Education, 2010).

According to studies done in the USA, inclusion has different meanings. The national center on education restriction and inclusion defines inclusion as the provision of services to children (persons) with disabilities including those with severe impairments in the neighborhood school in age appropriate general education class with the necessary support services and supplementary aids to ensure child's success-academic, behavioral and social, and to prepare the child to participate as a full contributing member of the society (Norah & Tony, 2002).

Friend (2008) says that inclusive education is about educating all children so that they reach their potential. He claims that although the physical location of students in schools and classrooms is not about where children sit as much as about how adults and classmates welcome all children took access learning and recognize that the diversity of learners in today's schools dictates that no single approach is appropriate for all. Inclusive education is based on the principle that school should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic, and other conditions.

A survey of the Rwandan educational fields in pursuit of educational developments aroused the following principles, which were perceived as the key fundamentals in educating and supporting children with disabilities and other SNE in Rwanda, basing on both international trends and ongoing socio-political developments that have also greatly shaped the educational strategies. (Karangwa & Kabano 2004)

As revealed by to Karangwa & Kabano (2004), Children and youths of varying disabilities and abilities, cultures, socio-economic backgrounds, languages, gender and religions access and share a learning environment that supports their strengths and responds to their diverse needs. This is apparent in the educational reforms that include the recent 9-year basic Education strategies (9YBE).

Education administration works collaboratively with all stakeholders to ensure that each and every student feels welcome, is learning and thriving, apparent and developing in the growing number of CFS and Inclusive schools around the country. Families are empowered to participate in their children's education, and communities surrounding the school embrace the principles of inclusion among their citizens. This is apparent in the impetus shown in the 9YBE programs, as well as the reinforcements of PTAs in basic education decision making committees, in which the local communities and families have a key role to play in increasing their local school capacities (MINEDUC, 2010)

According to MINEDUC (2007) inclusive schools and CFS which are clearly increasing in Rwanda are leading in shaping the future of its education system. National Policy strategies, legislation, research and social movements do not seem to pay much attention to these important phenomena within the Rwandan education, and the present report insists that they need not ignore their developments and sustainability for they are already instrumental parts and parcel of the educational system.

The foundation of Inclusive schooling and CFS principles is built on the strong philosophical belief that all children can learn and be successful. Culturally responsive educational strategies, differentiated instruction and positive behavioral supports are some of the inclusive practices that must be evident in academic and non-academic settings within the Rwandan education system. It ought to accord all students opportunities and support that will allow them to become self-determined, productive, and socially involved in order to achieve the MINEDUC's ESSP, 2010-2015 objectives (MINEDUC, 2010).

The present report therefore is centered on what it perceived as the key components that constitute appropriate education and support to young people with SNE in Rwandan Schooling, notably: education administrative strategies; School Curriculum, learning and teaching strategies, educational resources used, the Learning and teaching environment, support services jointly availed by the schools, family, communities and the government (MINEDUC, 2010).

A report from the ministry of Education in 2010, mentioned that it is clear that six key factors of inclusive education were considered: the curriculum in schools, the school environment and its accessibility, the teaching approaches and capacities, the parent-community support, the teaching resources, support services and resources. All these consider the learning and teaching process within the Rwandan education contexts, within which the opportunities and impediments emerge, and the practice in school are required to adopt themselves accordingly. The children and young people with Special Educational Needs (SNE) considered in the study were those who usually presented limitations and barriers in the learning and teaching processes, to the extent that the educational system is expected to make adjustments, and/or avail extra support in order to help them access and/or proceed in education attainments. It is for this reason that special schools/centers that accommodated them were surveyed for the special approaches and tools used (MINEDUC, 2010).

2.1.3. Challenges of Special Needs Learners

Kimani (2003) quotes one of the challenges as teaching methods. Curriculum is defined as a set of plans and that are prepared and adapted depending on the existing learning situations as well as demands that may arise in future. According to Mulyasa (2006) the demand of teacher training and equipping school's affects learning of students with special needs. Further he asserts that there is need for education authorities to arrange their curriculum, improve it, develop and evaluate while considering the social, cultural, financial as well as the local potentials. He also urges that societal needs, results and other aspects affect the schools and the entire learning process. Tedesse et. al. (2007) indicates curriculum for learners with special needs to be facing following problems; supervision of curriculum implementation not being adequate, mismatch of the curriculum with the school calendar and allocated time, finances and support with the

necessary learning materials low opinion among the teachers who are expected to implement the curriculum.

According to USDC (2003) the current curriculums as well as the examination were not flexible to cater for the needs of the learners with special needs. Further they have it that during development of curriculum as well as preparation of exams there is no much attention to the needs of the students who were having special needs.

The curriculum is rigid and does not favor the visually impaired learners. It has not been modified and does not give additional time for teaching the specialized skills such as Braille, reading and writing, mathematical computation, typing orientation, mobility and activities of daily living. The rigid teaching methods do not cater for the needs of the visually impaired learners. Real objects for learners to touch and manipulate are really used. The curriculum does not plan learning activities with the understanding that the same activities may take longer time for learners with visual problems. Due to this learner feel neglected and rejected.

Kimani (2003) finds another challenge which is the environmental adaptation. Environmental adaptation or adjustments are very important for learners with visual problems to make them cope with learning in an inclusive setting. Most of the classes are not arranged in an orderly manner. This hinders safety. The classroom arrangement is also changed without the learners' awareness. This may make learners with visual impairment disoriented in the environment. Teachers do not place learners with visual problems in a position that suits which becomes a barrier to learning. Most of the classrooms in this area have very bright light which is a problem to learners who have light sensitivity. This is a challenge to learners and makes them not to learn effectively. Drawings and charts are not drawn in hold type. Most of them are not displayed at learners' eye level. Most of the schools lack large print books for easier reading. All these problems hinder the learners from coping with learning in an inclusive setting.

Kiburi (2005) says that poverty is also a big challenge to these learners lack of finance hinders learners with visual problems from having visual devices which enhance vision. These include spectacles binoculars, highlighters, Braille machines, brailed textbooks, embossed or tactile

maps, typewriters. Due to lack of money, such learners do not go for medical checkups whereby they are supposed to be treated, guided and counseled. They are not taken for assessment for early intervention and in most cases learners' needs are not established. Hence the factors causing visual impairment are not defined, analyzed and strategies for solving the problems are not decided, this makes the learners to have more problems since the child is not assisted. Kimani (2003) and Kiburi (2005) categorized the challenges affecting learners with low vision. I agree with them. I do so because findings of this study reveal that majority of the learners with visual problems have the same challenges. I support their point of view that such children have high potentials when given enough support and if any these challenges are solved. This is why the researcher has engaged in researching these challenges so as to find possible solutions.

2.1.4. Methods used in teaching learners with visual impairment

Hengarly (2008) cited that joint participation in education activities is the full form of teaching children with special education needs. He further said that most of the schools have failed to teach children with special needs due to teachers who have not acquired knowledge and skills in modifying the materials methods to meet the needs of the children with disabilities fully.

Agganual (2005) explains that, teaching methods are strategies and tactics of showing how to do this so that they will be able to do it themselves the choice of what is to be taught and how to teach it. Danshan (2015) claims that people who teach children with visual impairment before training do not have enough experience about educational methods for teaching those children. However, after training they get correct ways of working with them. This is true because during teacher training one is taken through methods of handling the learners. In the absence of training one doesn't have skills. It is worse for learners with special needs.

Cornett (2012) stated that cued speech method is multisensory approach for teaching communication and language skills to children with visual challenges. Teachers use this method to emphasize the child's use of the visual and auditory sense. The goals of cued speech are for child to receive spoken language clearly both visually and auditory.

Sanders (2008) explains that an effective teacher will present many examples of new concepts and will provide several opportunities to practice new skills. The teacher will help the student's participation in their learning when necessary. The researcher is in agreement with this observation that the modelling of procedures can be acceptable and effective methods of instruction. Sanders goes on and says that teachers who are sensitive to needs of learners should employ a variety of teaching/learning aids to assist the comprehension of abstract concept by providing concrete support e.g. charts, models, books and pupils mode of materials are usually available or easy mode and should be at the age and level appropriate to the child. The researcher concurs with above that manipulative approaches provide concrete aid in developing concepts through discovery methods of teaching.

Kilrz and Wanyard (2013) observed that normally children learn a great deal from what goes on around them that is through playing and learning, imitating. This is true because different ways through which pupils learn and variety of facilities will ensure that all pupils fulfill their potentials and help to make teaching more effective and stimulating for them. The researcher in agreement, further noted that a variety of teaching methods should be used to kill boredom among pupils and more so children with the handicapped for instance guided discovery, child to child, discussion, question and answer, group work, observation among others should be employed to make learning more interesting.

Cox and Dykes (2001) advised that before teaching and learning takes place for students with visual impairment, they should first be familiar with their classroom environment and people to *"subordinate names and faces through related classroom experiences, to help build relationships among all students in a class."* (p. 68). Students should first be leaning to be able to move around the classroom like their peers, with the assistance of their lecturer. Therefore, Orientation and Mobility training (O & M) is necessary to attain this goal (Cox & Dykes, 2001). Koenig (2006) explained that Orientation and Mobility are crucial for people with visual impairment because it encourages safety, efficiency, and independency for individual mobility. Cmar (2015), almost two periods later, explained that Orientation and Mobility mostly prepare students with visual impairment for life beyond their high school life. Orientation and Mobility training support non-visual people to locate themselves and to know their surroundings (Park, Turnbull, & Turnbull III, 2012). The importance of Orientation and Mobility can never be overemphasized for non-visual individuals as it grants them independence and confidence to

move alone without any help. If students are to be trained to move around the class, it leaves a burden on the lecturers to train them. Therefore, this training should twitch with them in order to impart it to their students.

Learning for students without vision trusts on senses such as touch, taste, smell, and hearing other than vision. While reviewing the literature on learning through senses, the sense of touch becomes the most suitable teaching approach for students with visual impairment. The learning that students with visually impaired use are called differently by different scholars. This learning takes place over other senses other than vision. Cox and Dykes (2011) stated to it as kinaesthetic learning, while Downing and Chen (2013) specified it as tactile learning, and lastly, Fraser and Maguvhe (2008) proposed it to be a multi-sensory approach. These authors accord that learning through touch is the most appropriate teaching approach for students with visually impaired. This learning advocate for meaning which is interconnected through a sense of touch, feeling, or body movement.

Teachers who teach blind children in ordinary classrooms need to provide adequate special materials and equipment. There is almost universal agreement that the special materials and equipment needed by a visually impaired student in a regular school are essential to success. Therefore, every creative effort to acquire the necessary materials and equipment should be explored. In addition to, (Hoben & Lindstrom, 2010) Friendly user materials are good teaching materials for the blind children and creative materials which are provided to blind children enhance dialogue and social interaction to complete an assignment.

Since students with visual impairments rely mainly on verbal information for their learning, audio devices should be incorporated to aid the teaching process. These include things like audiocassettes and compact discs. However, lesson contents with diagrams and tables cannot be well explained in an audio format (Salisbury, 2018). Moreover, a lesson can be tape recorded and given to students with visual impairments for later playback at their convenient time (UNESCO, 2001). Moreover, if a videotape for example has to be shown, it is wise to show it to students with visual impairment so that through a specialized teacher's or a classmate's explanation, they understand all the visual concepts in it before the class watch it. For a film with sub titles, a classmate or teacher can read aloud to the class to help those with visual impairment (Spungin, 2012).

Optical devices such as eye glasses, magnifiers and telescopes use lenses to increase a person's residual vision. They are normally prescribed by a medical specialist while nonoptical devices do not incorporate a lens and do not need to be prescribed by a specialist. Things like large prints, Braille and Braille writer, tape recorders, book stands, recorded and talking, books and calculators etc., are examples of non-optical devices (Simon et al., 2010). The role of both optical and non-optical devices is to improve vision and increase functionality of students with visual impairments through the use of other senses. It is the role of a teacher to encourage students with visual impairment to use visual devices and assistive technologies to help them with vision (Spungin, 2012).

2.1.5. Modes of communication used to communicate with visually impaired learners

All children are natural communicators from the moment they make a face, smile and utter their first cry. Children with sight loss will need extra support to develop communication and learn about cues to support them in this. It's never too early to begin exploring ways in which you can support your child's development of the ability to communicate. Communication is not only about learning to talk; there are nonverbal, physical means, such as body language and touch (Keller, 2015).

In America, a case study was carried out by Lilienthal (2009) on a preschooler with autism and blindness in order to unlock the mystery of communication. The objective of the study was to describe how Augmentative Alternative Communication (AAC) strategies were used with this learner. The case study was carried out with an autistic blind child named Paul who was 4 years old, and non-speaking. To help Paul, two treatment methods were used. The first treatment method was the use of tactile communication symbols. This treatment was unsuccessful due to the child's self-stimulating behaviour of flipping objects with his hand. A second treatment method was the use of two handed sign language. By using two handed sign language paired with speech, the method proved successful.

The study found the importance of the AAC strategies because they permit individuals to use every mode possible to communicate. It is notable that learners with autism blindness can use the communication modes used by learners who are deaf and deaf-blind because they share

communication challenges. In America, as published in the Journal of Autism and Developmental Disorders, another case study was carried out by Konstanz (1982) on training a learner with autistic blindness to communicate through signs. The study was done on a 10-year-old girl using tactile kinesthetic and auditory modalities. After 8 months of training, she was able to acquire a function sign vocabulary. The study found the importance of choosing instructional strategies as dictated by the learner's needs. In America, still, a research study was carried out by Shaheen (2009) at the National Federation of the Blind (NFB) at Jernigan Institute in Baltimore on the teaching of skills of blindness to children with autism. The researcher found that teachers have to choose appropriate methods for teaching to meet diverse needs of learners who are autistic blind and their learning needs should be supported systematically.

Hengarly (1988) cited that joint participation in education activities is the full form of teaching children with special education needs. He further said that most of the schools have failed to teach children with special needs due to teachers who have not acquired knowledge and skills in modifying the materials methods to meet the needs of the children with disabilities fully. Holbrook and Koenig (2000) believe students should have a variety of tools that they can use to access the curriculum as independently as possible. Students with severe vision impairment can use a combination of auditory and tactile technologies to assist them accessing the curriculum such as screen readers, touch typing, Braille, and auditory recordings. This toolbox of different technologies allows students to participate in the classroom through the independence to choose which tool will assist them to access the curriculum and engage in the learning environment.

2.2. Empirical Review

This section dealt with three different studies done on learner with visual impairment. One done conducted by Sandra, another one by Baraka as well as Mugambi's, Baraka and Mugambi. These researchers highlighted challenges in teaching learners with visual impairments. They also outlined how their findings were.

A study that was conducted by Sandra (2012) on the challenges in teaching pupils with visual impairment in inclusive classrooms: the experience of Ghanaian teachers had a purpose of

investigating the teacher's challenges when teaching pupils who were having visual impairment in inclusive classrooms in Ghana. Sandra had the following as her objectives establishing whether there was adequate provision of the necessary teaching and learning materials, establishing the ability of the teachers to work with the relevant educational stakeholders. Third objective was to establish the teachers view on the suitability of the school environment in supporting teaching of learners with visual impairment and lastly was to investigate whether teachers were able to adequately attend to the needs of all pupils.

Sandra's findings as a researcher included the following: unavailability of the appropriate Braille skills among the teachers indicated that 34.5 % felt it was very true they did not have the skills, 24.1% said it was true while 41.4% felt it was not true and that they had the skills. On availability of adequate teaching and learning materials to use in teaching the learners with visual impairment 41.4% felt that it was very true they did not have adequate materials, 43.1% said it was true while 14.0% had it that it was not true and that they had adequate materials.

Another issue of investigation was on the ability to involve other stakeholders in in planning the learner's individual education plan. On this issue 30.4% felt it was very true they did not have the ability while 39.0% said it was true and 30.4% said it was not true. Further 47.4% said it was very true they had difficulties on getting the parents of the pupils with visual impairment to discuss vital information. At the same time 45.6% said it was true and 7.0% said it was not true and that they had no difficulties in getting the parents.

On the question of whether they were getting Braille textbooks 68.4% strongly agreed that they were not getting the books while 24.1 agreed that they were not getting and 7.0% said that they were getting the books. On the issue of class size and ability to offer individual attention the following came out; 45.6% strongly agreed that they were not able to offer individual attention while 28.1% agreed and 25.9% disagreed. On infrastructure and easy mobility among the learner's teachers had the following; 68.5% strongly agreed that the environment and infrastructure was not fit for the learner's movement while 24.1% agreed and 10.3% disagreed.

Another study conducted by Baraka (2012) on teaching students with visual impairment in inclusive setting which was a case study of one secondary school in Tanzania had its purpose as investigating the way general teachers teach students who are having visual impairment and the challenges that those teachers were facing.

Objectives of his study included the following; exploring the knowledge of general teachers on inclusive education. Secondly was to identify the ways that the general teachers were using to assess the learning needs of the learners with visual impairment in inclusive classrooms. Thirdly was to establish the way general teachers adapted their methods of teaching for the learners who were having visual impairment in inclusive classrooms. Finally, was to establish the extent to which the general teachers were collaborating with special needs educators as well as the parents of the students who were having visual impairment in order to provide quality teaching in inclusive classrooms.

In his study the researcher Baraka had following as his finding; on knowledge of teachers on inclusive education he found that most of the teachers had basic knowledge on the concept of inclusivity in education. Further he established that teachers had some theoretical knowledge on strategies for assessment of learners needs. However, he established that implementation of the said strategies posed a challenge to most teachers. Mainly he says that this problem was associated to the classes being too large.

On adaptation of the teaching methods Baraka established that teachers were aware of the need to adapt their teaching methods. However, his study indicated that the same teachers were struggling to make the appropriate adaptation of their teaching methods. This evidenced that they had insufficient knowledge on the adaptation. On the issue of collaboration between general teachers and special needs education stakeholders he established that collaboration was lacking. On this the main challenge was scarcity of the special education teacher as well as absence of commitment among the teachers. Finally, another study conducted by Mercy Mugambi on challenges facing teachers teaching learners with visual impairment in integrated schools. She used a case study of Moi girls' secondary school in Nairobi.

The purpose of her study is that she sorts to find out the challenges that were faced by teachers while teaching children who were having visual impairment in integrated schools. She had five objectives that included; determining whether teachers were having adequate training on teaching students with visual impairment, establishing the challenges that teachers were going through as they adapted syllabus for the students who were having visual impairment. Her third objective was to investigate the problems that the teachers were encountering as they were teaching the students with visual impairment. Fourth objective was establishing whether the teachers were receiving guidance from the ministry of education on matters of teaching students who are visually impaired and lastly was to get suggestions of the teachers on integration of learners with visual impairment.

Further the researcher Mercy established that these teachers sighted the following problems: demands from the school administrators was cited by 82.5% while poor learning facilities was cited by 77%. She had 70% of respondents who felt that there was no adequate provision of specialized materials was not adequate. Extreme expectations by stake holders was also sighted by 52.5%. She established that 35% felt that the time allocated was not adequate.

On the issue of assistance by the school in resolving the existing problems was responded to as follows; she had 25% who felt that special classes were being constructed, 25% had been allocated more time to cater for the learners while 25% were satisfied with the printing of the learning materials. On her last issue mercy established that Kenya institute of curriculum development had provided assistance as follows development of teaching materials was rated at 30% while 25% felt that the relevant teaching materials were being provided.

2.3. Theoretical framework

Different people have come up with different ways of approaching life challenges. Education for students having visual impairment is one of these disciplines faced by these challenges. Therefore, this study was guided by theories in the following two levels so as to handle the problem in question.

2.3.1. Behaviorism Theory

Ivan Petrovich Pavlov, James Watson, B. F. Skinner and Thorndike are the main proponents of this theory, which emphasizes on the environment as a key factor that influences learning. Classical conditioning requires it that a neutral stimulus is paired up with a stimulus that is naturally occurring while the operant conditioning has it that learning occurs through reinforcements and punishment. In this case behavior and consequences of the behavior are key. When there are desirable results on any action then behavior is more likely to recur. On the event that results are viewed not to be desirable then the behavior is less likely to recur (Marc, 2016). It is from that perspective that teacher is perceived to be a key component in influencing learning. If the teacher's actions produce a desirable result, then learning is likely to occur through repetitive actions of the learners. The theory guides in establishing whether there are desirable teaching approaches for learning to occur among the learners with visual impairment.

2.3.2. Social Model of Disability

The model requires a view of persons with special needs by the society to be from the perspectives of human rights and equality. This should be in contrast to focusing on their special needs that challenges them in undertaking some activities (Oliver and Barnes, 2008). Some people make PWDs to have a feeling that their mistakes made them different. However, the social model emphasizes that special needs don't make them lesser people. The PWDs movement holds to a view that problems of the people with special needs can be solved through restructuring the society and not focusing on their impairment.

Schools should therefore be re-adjusted to accommodate the special needs of those learners with visual impairment. Social model acknowledges that students with special needs may face challenges in the education system. These challenges may be so due to curriculum that is rigid, extensive and demanding. Other causes may include inadequacy of learning resources and materials, negative attitude and school environment that is inaccessible among others. The model encourages that such challenges should not be understood from the perspective of the learner's

disability. The view that students were experiencing challenges due to their impairment is discouraged.

Under these circumstances the option of establishing separate schools for learners with special needs is viewed as separating them from their peers and families. Further the approach is not cost effective. Therefore, schools should not be seen as that they are creating learning barriers to learners with special needs by not creating an environment that is enabling. The noble idea here is to identify the barrier and in a systematic manner eliminate the barrier. In this model strengths of the learner are priority as opposed to their challenges. The model advocates for inclusion of students regardless of the severity of their impairment (Diana 2008). This study therefore used social model of disability as an approach of advocating for inclusivity of education for the visually impaired.

2.3.3. Normalization Theory

Theory of normalization has Wolf Wolfensberger (1980) as the main proponent. This theory involves acceptance of the people who are having special needs into the society. Further it requires that they be offered the same conditions that are being offered to the other citizens. It brings in the concept of awareness of the normal rhythm of life. Such are not limited to the issues of attending school, housing, exercise, recreation, housing need and freedom of choice among others. He brings in the issue of dignity of risk instead of emphasizing on protection.

Wilmshurst (2005) has it that the challenge encountered in developing support in the society has been ignorance and resistance on the side of any given typically developed member of society and who has cultural influences that people with special needs are in a way fundamentally different and that it is in every person's best interest that they be removed from the society. However, they point it out that that part of the normalization process has been to bring back these people to the society and support them so that they can attain the normal life as much as they can. Wolf Wolfensberger (1980) puts it that people with special needs should not be seen as being either sick, abnormal, lesser people, or even unformed but instead should be viewed as people who requires significant support in some areas of life (Ndurumo, 1993). This argument brings in an understanding that every single individual requires to be supported at a certain point in life.

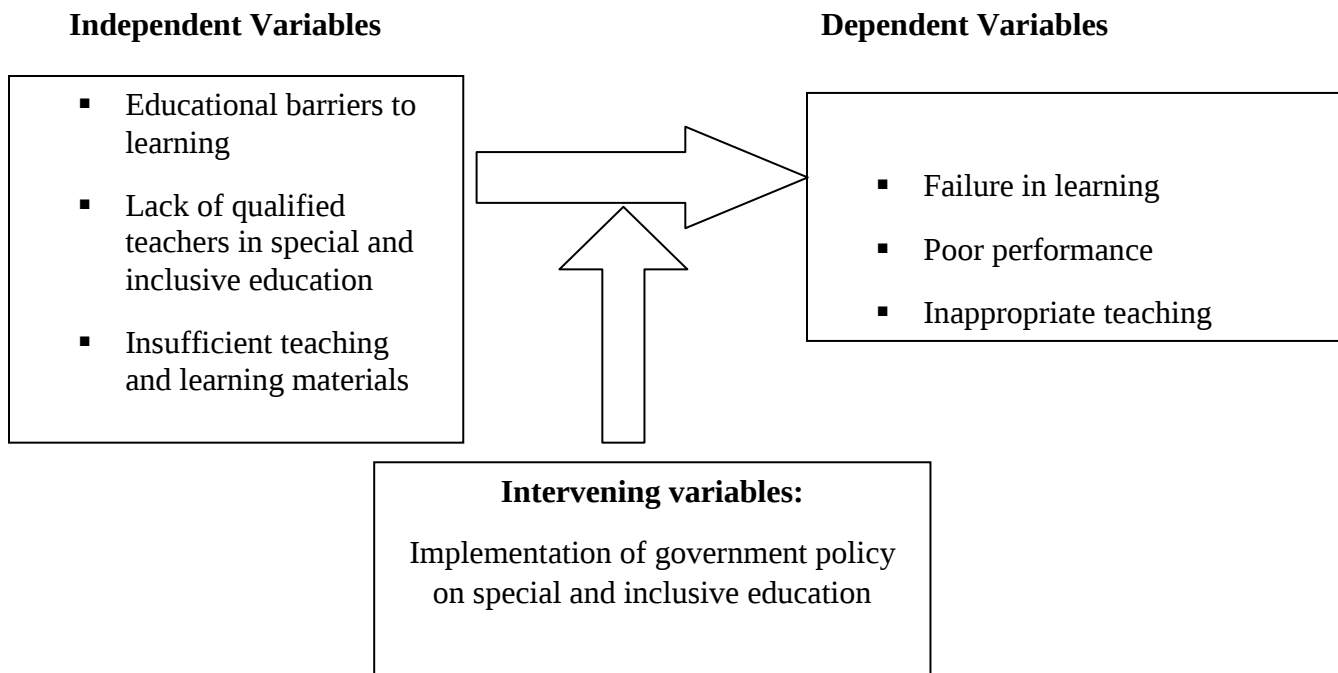
However, most people will get support when needed in an informal manner or through an approach that is socially accepted. This theory is therefore viewed to be important in guiding the study since for century's students who are having visual impairment have been segregated from their peers who are sighted when it comes to education matters.

2.4. Conceptual Framework

The conceptual model below was designed after examining the available literature in relation to teaching students who are visually impaired in classes that are inclusive. Development of the conceptual model took into account educational barriers faced by learners who are visually impaired, and this may lead to poor performance.

Teaching is the art of intentional planning for and disseminating appropriate knowledge, skills and competencies to the intended learner in a manner that triggers learning. Therefore, the teacher needs to have the prerequisite knowledge and skills on the teaching pedagogies and absence of these may not achieve much in classwork. Further the teacher needs to use appropriate teaching methods that are suitable to the learners with visual impairment. These methods also need to be adapted in a way that may suite an individual learner with visual impairment since the levels of impairment differs from one learner to the other. Some of the facilities and competencies required may not be available among the teachers of visually impaired students and even in the entire school environment and hence the need for collaboration with other educational stakeholders who help in acquisition of the same. If any of these factors are not available, then poor academic performance sets in. The researcher had to establish whether the above factors were put in place before and during learning so as to foster a good and conducive learning environment. Further the intensity of the same was measured to find out the level of which the factors were put in place for effective learning.

Figure 2.1: Conceptual Framework



Source: Researcher, 2022

2.5. Conclusion

This chapter discusses the literature review related to barriers facing by learners with visual impairments. It has reviewed conceptual literature, theoretical framework and views from different researchers on the topic. In this chapter it has been highlighted that children with visual impairments often have limitations of interacting with their environments, less reason to explore interesting objects, and as a result missed opportunities to learn. The main challenges to learning are lack of knowledge about differences, rigid and poor teaching methods, inconvenient learning environment, with lack of identification process, and inadequate assessment procedures. Learners with visual impairments are limited in interaction with the physical and social environment. This can considerably affect social communication and educational achievement of learners with visual impairments.

CHAPTER THREE:

RESEARCH METHODOLOGY

3.0. Introduction

This chapter describes the methodology used in this study, starting with the study design, the sample and the sampling techniques. It discusses the instruments used for data collection. It explains how the instruments are tested. This chapter deals with the study procedures, the way the data will be collected and analysed, and ensuring the ethics of the study.

3.1. Area of the study

Kayonza District is one of the seven districts constituting the Eastern Province of the Republic of Rwanda. The District surface is estimated at 1,954 km². The relief of Kayonza District is made of hills and slopes whose altitude varies between 1400 and 1600 m. The relief is characterized by the plates at broad tops and the hills with soft slopes except in the East where one finds some slopes stiff and stony. It is also situated in the wet tropical climate area with an alternation of two wet seasons and two dry seasons (Kayonza District, 2017).

3.2. Schools in Kayonza District

Regarding, the pre-primary education, currently the district has 8 ECD. Pre-primary education in Kayonza District is still not developed although the number of nursery schools has risen to 78. The District is confronted by insufficient number of schools in relation to the demand. This is largely due to the lack of funds for construction and to cover the running cost. The progress was due on the partnership between parents and schools aiming at enabling children to acquire

required pre-primary knowledge. Moreover, the sensitization and role model schools have been reinforced in last 4 years (ECD policy and strategic plan MINEDUC, 2011).

In primary school, the district reports shown that Kayonza District has 73 primary schools which are geographically equitably distributed in all administrative Sectors with 87,861 pupils. With 1298 teachers (Annual District education report, 2019) however, those schools do not function efficiently as desired for several reasons: most of them have buildings which are in a very bad state and require urgent rehabilitation. The total number of pupils in almost all schools far exceeds the capacity of each classroom; Teaching materials are literally not enough in all schools.

In secondary school, according to district reports, Kayonza District has 45 secondary schools with total number of 17,261 students with 724 teachers. The TVETs are 9 and on College of Education (Rukara college) with 5,505 students. In Kayonza District, the literacy and secondary school attainment rates are lower than the national averages.

The study was carried out Kayonza District. The area was chosen because the researcher teaches in this area and has identified learners with visual impairment and their minimal performance. The sampled school has a large numbers of learners and teachers as well.

3.3. Research Design

Grinnell and Williams (1990) mention that the research design is a total plan they use to aid them in answering their research questions. They also put forward that as a part of their plan, they decide what the research questions should be and what data is required to answer them where data is to be obtained and what the best way to gather the data. The study adopted a descriptive research design. Therefore the questionnaires and interviews were used.

The data was gathered qualitatively using semi structured interviews and data was analyzed qualitatively. According to Hennick (2011), qualitative research is used to provide in-depth understanding of research issues that embraces the perspectives of the study population and the

context in which they live and to explore new topics or understanding complex issues, explaining people's beliefs and behavior.

3.4. Target Population and sample size

Population sample provides the total sum of respondents to whom the results of the study can be generated. In Rwanda, there are very few secondary schools that have fully embraced inclusive education for students who were having visual impairment. Further owing to the fact that the study was a case study and deep and detailed information was necessary. Therefore the total of 28 learners with visual impairment and 38 teachers were targeted. The total sum of the respondents was 66. Due to the fact the population was too small, the researcher used census instead of using sampling.

3.5 Data Collection Tools

According to Johnson and Christensen (2012) it is acceptable for a researcher using case study to employ more than one tool of data collection. Therefore, then both interview guide and observation checklist were used for data collection.

3.4.1 Interview Guide

The interview questions in the guide were derived from the research questions. Interview was used to help the researcher capture all the required information from learners with visual impairment based on the research objectives.

3.5.2 Observation checklist

This instrument was useful in the classroom during instruction where the researcher sat in classes during the teaching and learning process to observe the learner's behavior, manipulation of curriculum, materials, strategies and teachers professionalism in teaching learners with visual

impairments. Observation schedule was considered appropriately because; it yielded data which were used to supplement interviews for relevant information.

3.6. Data Analysis Procedure

Judd, Charles and McClelland (1989) defined data analysis as a process of inspecting, purification, transforming, and modeling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making. In current research data were collected from the study was qualitative in nature following the research questions.

Data were collected through interview was qualitative in nature and it was analyzed by thematic analysis and the dominant themes were captured and presented through narratives. Data collected from observation checklist were analyzed qualitatively and were presented in frequency distribution, tabulation and in narrative to describe methods and materials used to teach learners with visual impairments.

3.7. Validity and Reliability

Validity is the degree to which a test measures what it is supposed to measure (Kothari, 2005). Content validity was tested to ascertain whether the items in the questionnaires were suitable for their task. Questions which brought confusion or misunderstanding to the respondents were identified and modified to ensure clarity of information in the questionnaires (Gerard, 2001). Difficult questions were reframed using appropriate language which could easily be understood by the respondents. Consultation with the experts in the area of special needs education was done and the instruments were modified and redesigned accordingly so as to achieve the intended task during the main study (Gorard, 2008).

3.8. Ethical considerations

The researcher obtained an introductory letter from University of Rwanda-College of Education in the School of Inclusive and Special Needs Education in order to be able to get introduced to the field. While in the field, informed consent was sought of before interviewing respondents and distributing questionnaires. The researcher ensured that the names of respondents do not appear on the questionnaire to ensure their confidentiality as it was part of the ethical procedure to ensure that respondents were protected.

The researcher then assured respondents that the information collected from them was purposely for this study and would not be used for any other purpose. This was done to ensure that they confidently answer all the necessary questions for this research without fear of using it for other purposes other than that of academic research. Also, the researcher ensured the principle of anonymity to be respected so as to guarantee the confidentiality of information that was collected. Anonymity and confidentiality of participants are central to ethical research practice in social research. Where possible, researchers aim to ensure participants that every effort will be made to ensure that the data they provide cannot be traced back to them in reports, presentations and other forms of dissemination” (Crow and Wiles 2008).

For easy acquisition of information, mode of conduct and behavior was considered while approaching people for interviews and in the distribution of questionnaires. The researcher ensured and assured the respondents that all their responses were to be treated with strict confidentiality and was only to be used for the purpose of the study. She also informed them that their participation in the study was voluntary and they were at liberty to refuse to respond to some questions or to participate in the interview.

3.9 Conclusion of this chapter

Chapter three described the methodology that this research used, starting with the research design, the sample and sampling techniques. The instruments were used in data collection were

discussed. The researcher discussed the practice of the research procedure, how the data were collected and analyzed and how research ethics was ensured

CHAPTER FOUR:

PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.0 Introduction

The current research endeavored to study the pertinent issues on content delivery among students who are visually impaired in classes that are inclusive and the obstacles met by the teachers while teaching those students. It sought to assess the various gaps that are likely to be bridged as a result of addressing those factors.

Data was analyzed using of Microsoft excel and thematic content analysis. The present chapter provides the analysis as well as the results of the data collected. It sought to provide a detailed analysis of the qualitative data collected in regard to the perception of the teachers who teach the students with visual impairment. In particular, the study sought to find out challenges faced by children with visual impairment in a regular classroom, to find out teachers' methods used in teaching children with visual impairment in regular schools and to find out the modes of communication that teachers in regular school use to communicate with visually impaired learners.

The chapter presented the data analysis and the presentations of the results of the collected data using interview and observation. The responses were collected from the teachers who teach the learners with visual impairments. The questions in the interview asked about the demographic data of the respondents, open ended questions intended to generate answers regarding issues that face the students with visual impairments; detailed information was generated from the principal in order to generate information on the policy issues in regard to the approaches delivering content among the learners who are visually impaired.

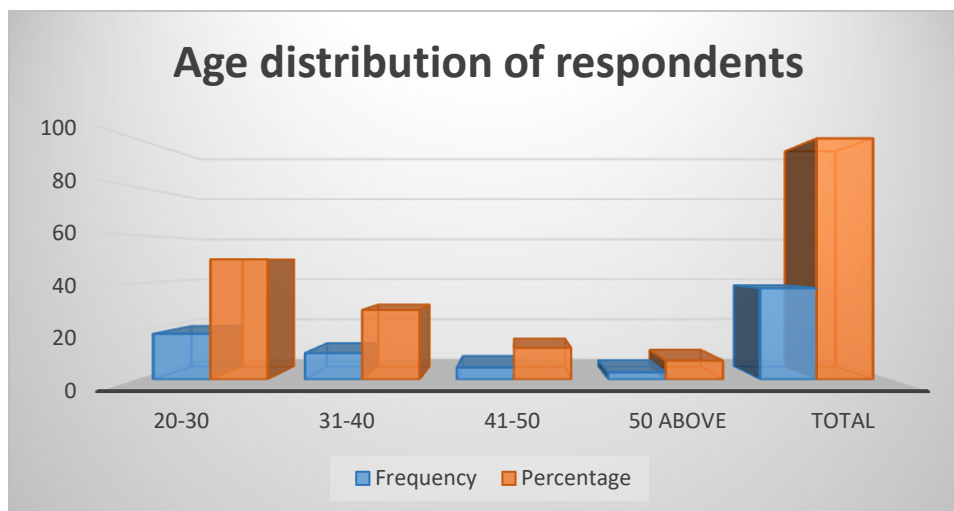
4.1. Social and Demographic Characteristics of the Respondents

This part gives a critical analysis of the demographic characteristics of the respondents in the study. It was important for the researcher to understand the characteristics of the research area in order for them to be able to relate those characteristics with the outcomes of the study. This part analyzed the age, gender, Years of experience, length of stay in the current station, subjects they teach, highest academic qualification and whether they had training in special needs education.

4.1.1 Age of the Respondents

In the graph below the researcher interviewed 38 respondents. According to the graph most of the respondents were between ages 20-30 years followed by those that were between ages 31-40 years. The least number of years were 50-60 years. This data translates to the experience earned by the teachers handling the students who have visual impairments. The younger the teacher the less experienced the teacher is in terms of the general teaching of the learners

Figure 4.2: Age distribution of the respondents

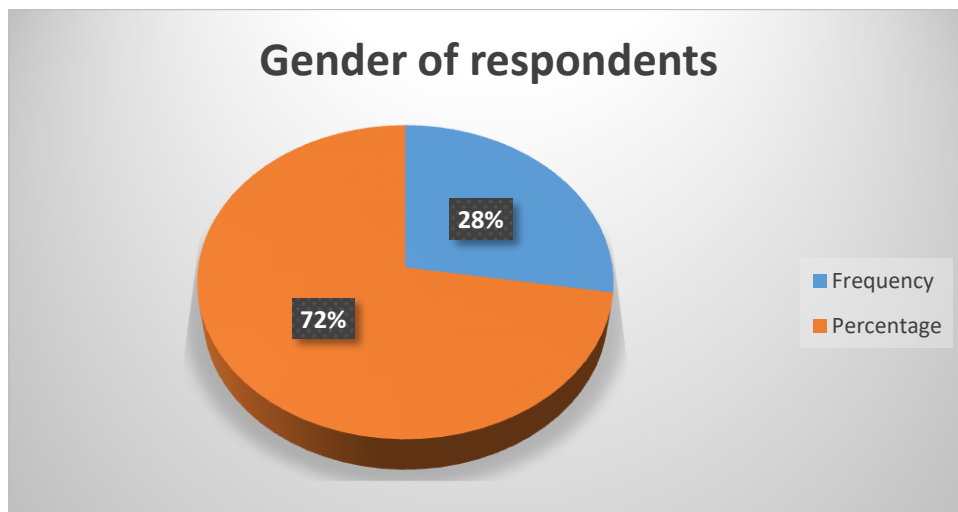


4.1.2 Gender of the respondents

The pie chart below shows the gender distribution among the respondents. It is evident that there were more female respondents than their counterparts who are the males in the school. This is translated in their general attitude in handling the visually impaired learners. The female gender

is generally seen to be more motherly and having a general concern of the welfare of the children compared to their male counterparts. This can contribute to the general learning of the learners in terms of the attitude they will pose towards the teachers and hence contributing to the learning of the students.

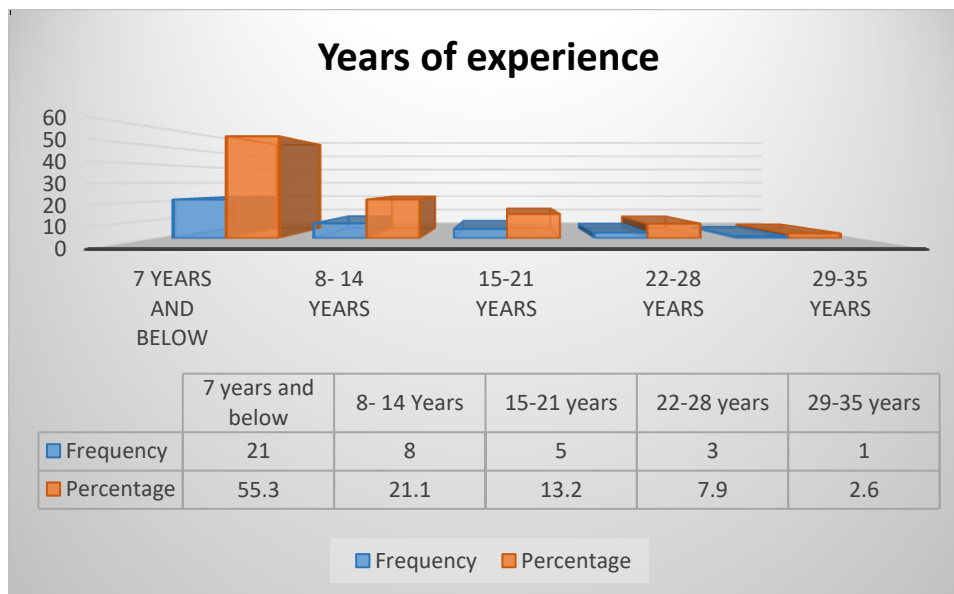
Figure 4.3. Gender of the respondents



4.1.3 Years of Experience

The graph below shows the years of experience the respondents had in handling general curriculum. It was evident that a high number of respondents had experience of 7 years and below followed by those with between 8 and 14 years, the next was between 15 and 21 years while the least was 22 to 28 years and 29 to 35 years respectively. The lower the experience the less knowledge the teacher had and hence inappropriate to handle the learners.

Figure 4.4: Experience of the teachers in their job



4.1.4 Highest Qualification

Among the 38 respondent teachers interviewed, 36 teachers had a Bachelor's degree of education while one had a diploma in education; one respondent had a bachelor of science and a post graduate diploma in education. The higher the academic qualification in education the more suitable the respondent was in handling the general curriculum. It is therefore notable that majority of the teachers had adequate knowledge of the curriculum issues.

4.1.5 Training on Special Needs Education

Among the respondents only two had training on special needs education, one had training in Kenya in sign language while the other had been trained on handling the mentally impaired students. Training in special needs education is crucial in ensuring that students who are disabled are engaged in a manner that is adequate. It is therefore notable that none of the respondents had specialized training in handling the students who have visual impairment and therefore inappropriate in handling these learners whether in special schools or in inclusive schools. It implies that the teachers despite handling the students with visual impairment they were ineffectively to handling to learners and hence not able to effectively address all the issues that affect the visually impaired learners and hence ineffective in delivery.

Regarding the general knowledge of respondents on Special Needs Education a question was paused among the respondents on how they understood inclusive education. The majority of the respondents viewed inclusive education as an educational approach giving opportunity to all in a manner that is uniform and no special treatment of any student either based on ethnicity, religion or physical challenges but instead incorporates all the learners into their classrooms. This includes those that have special needs among those who are regular. This is a key aspect in ensuring that these learners feel accepted by the immediate society and therefore they will be able to develop positive emotions among themselves. A person with positive emotions is relatively stable and can approach the various live challenges with much ease.

4.2 Challenges faced while teaching Learners with Visual Impairment

The respondents were questioned the obstacles met when teaching the learners with visual impairment. The responses were as follows;

Application of different teaching methods for one class seemed to be hectic and demanding. This was so because the teacher would keep on changing from one approach to another. This was expected to happen within one period of forty minutes. This consumed a lot of time and hence covering of the syllabus was a serious challenge. According to Dick et al. (2001), asserted that instructional strategy is used generally to cover the various aspects of sequencing and organizing the content, specifying learning activities, and deciding how to deliver the content and activities. Schneider (2010) observed that pedagogic strategies refer to a general abstract teaching method. They can influence instructional design models. Instructional design models refer to more precise instructional designs (based on some more explicit teaching and learning goals). A model can (but must not) implement several kinds of pedagogic strategies and methods.

Secondly the learners were taking a lot of time when copying notes as well as doing assignments. This was so because they could not see properly whatever they were copying. These learners could strain to see and write hence take a bit longer to complete the task at their disposal. These findings are in agreement with Terry (2017) who stated that good notes can take different forms and may vary from learner to learner—or even from text to text. One of the key ideas of good

note taking is that it is not necessary to copy down loads of information from the text. Copying down information does not engage your brain and is not a strong strategy for learning and remembering content. It also takes a lot of time and energy. In contrast, simply highlighting loads of information is simpler but does not do much to actively engage the brain.

Poor spelling and hand writing was also noted. The legibility of learner's work was a challenge. This was so since the learners were ever complaining that they could not see properly the writing on the board as well as the other writings. Consequently, the teacher could take a lot of time when interacting with the learners' work.

Hulstijn (2011) noted that handwriting is a functional yet complex task in which lower-level, perceptual-motor processes and higher-level cognitive processes interact, allowing for communication of thoughts using a written code. It is a skill that is required for full participation in school activities since children spend up to half of their classroom time engaged in paper and pencil tasks daily. Thus, graphomotor (handwriting) difficulties have a profound impact on a child's academic success and self-esteem (Feder, 2007). Proficiency in handwriting is significantly correlated with academic achievement and is a predictor of general learning.

Further the teachers argued that they always required attending to the learners independently in order for them to be able to grasp the content. This was so because vision is crucial in sending the observed stimuli to the brain for processing. In case of visual challenges this process takes place slowly and hence low learning pace. This was yet another aspect that spends a bit teacher's time. Another issue raised was that the learners never concentrated till the end of the lesson. This implied that they needed their own system that provided for shorter periods. This was a challenge on the side of the teacher since they were required to teach little content.

These findings concur with Depountis (2015) who stated that the technology boom of the last decades has produced an abundance of devices to assist in learning and teaching, including those useful to teachers of students who are visually impaired. The innovations in assistive technology support the accessibility of higher education and may serve as an equalizer in the lives of people with disabilities (Michaels & McDermott, 2003), but also have an impact on the role and

responsibilities of their teachers. Zhou et al. (2011) did a survey of 165 teachers of students with visual impairments to investigate their perceptions of their knowledge of assistive technology. The results showed, in particular, low ratings of the competences related to mathematics and science.

Although the importance of assistive technology for the success of students with visual impairments is no longer subject to debate, there remains a strong concern as to whether these students receive adequate instruction and training in this area (Zhou et al., 2011). This is particularly the case for visually impaired students whose primary reading medium is Braille (from here on Braille readers). They need assistive devices, such as the Braille display, tactile drawings, and tangible models, to get access to and explore mathematical representations.

The learners were reported to have had constant complains of either being intimidated or laughed after by other learners. This was triggered by the mistakes that they could do in class. According to their sighted peers such mistakes were too obvious to be made by learners of their level. This put the teachers at a task of cancelling the learners as well as disciplining the offenders which is also involving as well as time consuming.

These findings concur with. Hodges and Keller (1999) who stated that made recognizing the extent to which students perceive the process of inclusion of handicapped students in the university. The results indicated that there were many problems that faced the visually impaired students, especially in the area of transport and developing social relationships with their peers.

Hougann (1999) conducted a study aimed at identifying the challenges faced by visually handicapped students in higher education institutions. The results indicated many problems. For example, the absence of counseling services, few Braille printed books, lack of visual readers, the difficulty of adjustment with university life, teachers' neglect of their special needs, and the problem of taking exams and transport in were the most important. Fuller et al. (2004) also studied obstacles that faced the handicapped at university. The results of the study indicated there were many obstacles such as the fast rate of the teachers' speech during the lectures, as well as difficulty in participating in the discussion and answering the questions. Also some

lectures resented allowing disabled students to tape the lectures, and it was hard to access the educational centres. There was a lack of suitable computer programs. Masaedeh's (1995) study aimed at identifying the problems of handicapped students in Jordanian universities. The results indicated that the most obvious problems were those which were related to the services. In addition, there were many concerns about the future of disabled students, and their psychological, social and health issues. On the other hand, the study did not show any significant differences due to the gender of the disabled grade level type of disability.

Ibrahim (2001) studied the problems of visually handicapped students in the University of Jordan. The results of the study revealed the existence of problems such as using the library, transport, difficulties in teachers' understanding about their needs. The study did not show any significant differences due to the handicapped gender, the degree of disability, level of education. He further asserts that it is because of several reasons which included lack of interaction between special needs and regular students, teachers do not have sufficient skills in teaching techniques required to handle the inclusive programme. Therefore, in order for inclusive programme to take place successfully, it requires a regular classroom that is sensitive and attended to the students' needs and abilities

Another question was interviewed on assessment of the learners with visual impairment and their learning needs. This question comes to identify the various approaches that the teachers of learners with visual impairment in classes that are inclusive employ when assessing the learners with visual impairment. This enables the teacher to understand the type and level of need the learner has. With this knowledge the teacher is able to prepare the various teaching methods as well as their appropriate adaptations.

4.2.1. Techniques used in identifying the Learning needs of the Learners with Visual Impairment

On pausing the question on how teachers were assessing the needs of the learners with visual impairment following responses came out.

Observation was used. In this teachers observed whether the learner was straining when reading from the board, books or even when writing. This was a sign that these learners had a problem in vision. When such signs are identified the learner should be referred to the education assessment and resource centers (EARC) for further assessment. This confirms whether the learner had the needs or not.

Assessment of how the learners respond to questions concerning observation was regularly mentioned by the science and technical teachers. For instance, chemistry teachers said that these learners were commonly making obvious mistakes when identifying colors changes. Such arguments sentiments were also shared by biology and agriculture teachers.

Gane (2013) highlighted that the use of individual tasks by science teachers especially the physics and agriculture teachers. He said that when these learners were given individual tasks to handle during practical lessons mistakes were also evident. This was also associated with the same problem of being unable to see properly.

Complains related to eye problems was also mentioned to be another thing that a sign of visual impairment. Some of these learners complained that their eyes were aching while others complained that they were unable to see the board properly while in some areas in class. This should be addressed by providing large prints or having them seating in front of the class or at the back depending on complains that had been raised.

Handwriting was said to be another method that was being used in identifying the needs of the learners with visual impairment. It was reported that most of the learners with visual impairment had very poor handwriting and with very many spelling mistakes.

4.2.2. Assessing the needs of Learners with Visual Impairment

On raising questions on the challenges that are faced when assessing the students who are having visual impairments the respondents raised the following issues;

Inadequacy of the required assessment facilities and materials. If these are not available a learner can be identified and placed as a learner with visual impairment while not and vice versa. It is therefore crucial to have these facilities in every school for proper inclusion.

The level of impairment varies from one individual to the other. In this case since the teachers have no training on special needs education they are likely to expect the learner behave exactly the way the one they know behaved or show the exact characteristics they know with aim of placing them as learners with visual impairment. If the level is different from the one they know there is likelihood of erroneously place them as visually impaired while not and vice versa since they will not behave or show the exact traits that they expected to be shown. Such will have adverse effects to their process of learning

Inadequate time was seen to be a challenge. This is because the teacher is expected to be in any class for a period of forty minutes. This period is only adequate for the normal class presentation without necessarily engaging in issues of special needs. Due to this the teacher is likely to ignore the traits that they see in these learners so as to concentrate on class delivery to the majority who are the sighted. This may affect the learner since their issue may not be addressed and if so it may be done very late when damage has already been done which may be irreversible.

Low self-esteem among these learners was seen to be a challenge. When in such a situation they may feel to be weak and hence not able to make any achievement. In case of such the learner is likely to perform below their ability during assessment. If this occurs, then they are likely to give the wrong perception of themselves and hence wrong placement and access to some erroneous services that may not help them much.

Lack of proper training to assess the learners' needs was sighted. This was so because the teachers did not have training in special needs and the two who had it was irrelevant to education and assessment of students who are having visual impairment. It was argued that in this situation the teachers were not in position to offer professional and appropriate evaluation of the educational needs of the learners who are visually impaired.

Identification of genuine learners for further assessment was said to be a challenge. This was due to the fact that many times the lazy and cheeky learners could pretend to be having visual problems so as to avoid doing the assignments given or even with an intention of being given a chance to move out of school for further assessments. This at times makes the teachers uneasy to trust any learner who may complain of such including the genuine ones. Further it may deny or delay access to assessment services among the learners who are deserving.

4.2.3. Adaptation Techniques Employed by Teachers in Teaching the Visually Impaired Learners

This part aims at outlining the various teaching methods that teachers employ in classes that are inclusive of students who are having visual impairment. Further the part shows the adaptation techniques that are put in place so as to address the needs of the learners with visual impairment in this setting. Further it will outline the challenges the teachers face when adapting the teaching methods so as to make them suitable to these learners.

4.3. Methods used in teaching learners with visual impairment

During the data collection the following teaching methods were observed as well as being mentioned in the interview process.

All the twenty-six classes observed use of the question and answer was common. Questions were paused for those who are sighted or regular as well as those who are visually impaired. However, the frequency in which questions was high in mathematics, sciences and languages compared to humanities and technical. Further it was noted that most sciences especially physics and chemistry was asked in a manner that never gave the visually impaired learners to synthesise the question even where observation was required.

Although during interview it was highly mentioned to be a teaching method used by the teachers it was only three teachers who were observed using the same approach out of the twenty-six classes observed. This was seen in two English classes and one in a history and government class. However, in the three cases the discussion was done for a short period of time that may not

give the visually impaired learners chance to contemplate the issues discussed and participate effectively.

Lecture and explanation method was used by all the twenty-six classes observed. Further it was highly mentioned by the respondents interviewed. Voice projection during this method was seen to be adequate for the learners with visual impairment among all the teachers teaching humanities and languages. However, there were two cases one in physics and the other in chemistry that sound was fast and low for a learner with visual impairment.

Experimentation was a common method employed in sciences. It was not just mentioned during interview but also observed in class however the rate at which it was mentioned during interview was very high compared to the rate at which it was observed in class. Further in some experiments especially in chemistry the learners with visual impairment were straining much in order to identify the color changes that occurred during chemical reactions.

Demonstration method was also mentioned as well as being observed during interview and observation methods respectively. This was mainly observed in science subjects especially in chemistry where the teacher demonstrated the various experiments before instructing the learners to carry out some experiments. However, just as it was with experimentation learners with visual impairment were straining to observe the color changes that were occurring.

4.3.1. Adaptations done for the various Teaching Methods

During data collection process the following adaptations were either mentioned in the interview or observed in class as the teachers were teaching.

Among all the teachers observed the learners with visual impairment were given extra time to perform the various tasks that included doing assignments, performing experiments as well as during the reading of set books in languages.

Sound projection was also evident. This was also necessary since the learners with visual impairment majorly depend on voice than writing. With majority of the teachers observed as

well as those interviewed audibility was confirmed to be key. Further among those observed there was tonal variation and sound that was appealing to the learners. Such voice is crucial since it helps the learners to concentrate in classwork hence better understanding of the content that was being delivered by the teacher.

Adaptation of text was also evident in a number of ways. In those observed the writing was large enough and used contrasting colors that were crucial for the learner to see the text being written. Even those using projectors ensured that the font was large enough for learners with visual impairment to see properly. Further those interviewed confirmed that even the diagrams they used in teaching were large enough.

Strategic positioning and movement of the teacher was also mentioned to be crucial in the process of teaching in order to assist the learner to hear properly as well as seeing the practical that were being demonstrated from time to time.

Sitting arrangement was also said to be another adaptation used. This was so in ensuring that they were sited in a strategic place where they could see the board properly as well as hearing from the teacher and other learners with much ease. This was so to help the learner benefit maximum from the learning process.

4.3.1.1. Challenges learners faced during Adaptation of the Teaching Methods

Teachers sighted the following to be the challenges they face when trying to adapt their teaching methods so as to address the special needs of learners with visual impairment in their classes that are inclusive;

Preparations were said to be tedious and involving. This was a challenge to the teachers since they get tired and exhausted during preparations which may affect the teachers' overall performance in school activities as well as their family and private matters. Naturally human beings hate being engaged in activities that are too demanding. Most people like using shortcuts, these teachers may not be an exception to this.

Insufficiency of resources as well as the teaching and learning materials was sighted. For instance, since most of the visually impaired in the sample site had low vision electric gadgets such as projectors and laptops were required in order for the teacher to adjust the font appropriately as the need arises. There were only three projectors in such a school that had five streams which translates to twenty classes.

Low rate of syllabus coverage was also sighted. This was so because some of the adaptation techniques employed such as use of projectors and other electronic gadgets as well as extra time allowance was said to be time consuming. This time being spent would have been used in handling other syllabus content. This further impacts negatively on the overall performance of learners including those who are sighted.

Time wastage for the sighted counterpart was highly mentioned. Some of the sighted learners who felt that their time was being wasted could engage in indiscipline issue such as noise making and playing during class time. Further this was sighted to be the cause bullying and nicknaming during the time that they were free from class activities.

These findings are in line with Ceaser (1996) who stresses that teachers are faced with the task of delivering content to learners which require effective communication that involves sitting arrangement, class control and use of pupil-centered learning. Therefore, for effective teaching and full participation of learners, teachers should always be equipped with methods, education materials, subject matter, teaching techniques and means of communication in handling children with special learning needs.

4.3.1.2. Collaboration with Relevant Education stakeholders for Provision of Quality Education

This part explores how teachers teaching in classes that are inclusive of learners who are visually impaired collaborate with various relevant stake holders in order to provide quality education to the learners who are visually impaired as well as their sighted counterpart in those classes.

Co-teaching

This part examines the understanding of teachers on the concept of co-teaching. It further looks into how co teaching is implemented in classes that are inclusive so as to improve the quality of learning delivered to the learners with visual impairment as well as the sighted peers.

Majority of the teachers agreed that co-teaching involved having two or more teachers teaching one class concurrently. They said that in this kind of teaching two or more educators work together in organizing and planning for learning, instructing as well as assessment of the learners.

Implementation of Co-Teaching in Classes that have Learners with Visual Impairment

During class observation no evidence of co-teaching was found. However, during interview, a number of ways were mentioned in which the teachers were doing co-teaching. These included the following:

Bringing in other teachers who were able to address specific issues that could affect learning of the learners with visual impairment. For instance, the issue of integrating information technology was mentioned. In this a teacher said she was unable to assemble the projector so as to use the PowerPoint and adjust the font appropriately. She therefore said that she was inviting her colleagues to do it for her.

Interchanging of classes also came out. This involved one teaching the class of their colleague while the one was teaching that of the former. This was said to be necessitated by the purpose of delivering better what their colleague could not do due to issues related to age, gender, religion and even the knowledge itself.

Other teachers reported to be using this approach when they were unable attend their lessons. This was said to be necessitated by too much work they could be having. It was also said to be necessitated by absence where a teacher goes to handle either official matters but outside the school or even attending to personal issues.

On assessing the above mentioned approaches it is notable that rarely was co teaching used in these classes. Further it is notable that when used it was too general and had very little or no help to the learners who were having visual impairment.

4.3.2.1. Challenges facing Collaboration with Parents of Learners with Visual Impairment

Teachers who reported to be collaborating with the parents of the affected students complained that they were facing challenges. Among those faced challenges included ignorance among the parents. With this, parents were said not to be reporting to school as require when invited. Further when called via the school official numbers they could ignore the calls and never to call back or do it very late. Further when advised to buy some supportive materials they were either not buying or buying very late when their children were no longer in need of such materials.

Absence of knowledge about special educational needs among the teachers was also mentioned. Having mentioned earlier that none of the teachers who had relevant training they felt that they were not adequate to handle these learners. They said that whenever they called upon parents they were being required to give answers and advises on matters that they felt to be beyond what they were able.

Poverty was also sighted. Some parents were not following advises given especially those that had financial implications on their side. For instance, when they were required to come to school or take their children for specialized checkup they failed to do so. The teachers felt that some of these situations were so because some parents were financially unstable and therefore could not meet the financial obligations involved.

Some parents were reported to be either without knowledge of the issues their children were undergoing or not willing to disclose. This was so because when probed on some matters they were not giving adequate information which teachers felt was important in handling some learning challenges that were being faced by their children.

4.4. Mode of communication used to instruct visually impaired learners

From the teacher's responses of the respondents, the majority of respondents asserted that the teachers use demonstration, teacher centered and chalk methods while teaching. They added it was revealed that demonstration, teacher centered and chalk methods were commonly used.

4.4.1. Ways of improving the performance of children with visual impairment

During the interview, on this point, different respondents stated that the best way to improve the performance of children with visual impairment is to sensitize all the stakeholders on the importance of educating these children. This is aimed at creating positive attitude towards visually impaired children, readiness to assist them and eventually improve their performance. Findings further reveal that sensitizing parents about the importance of educating their children and also sensitizing children themselves to overcome the challenges imposed on them by the handicap would help improve their academic performance. Parents, teachers and community as a whole need to create conducive environment for these children to learn.

From the findings, it is important to note that a teacher is an important person in the growth and development of a child. Therefore, teachers need to be equipped with the necessary skills and knowledge to assist all children despite the handicap that the child may have.

These findings are in agreement with researchers who have noted that teachers who have had more special education coursework develop more positive perceptions of inclusion than those with less of that specific coursework (Ajuwon et al., 2012; Jobe, Rust, & Brissie, 1996; Stoler, 1992). In Canadian research, wall (2002) found that teachers with the least amount of experience with children with visual impairments tended to place those children in more restrictive placements, to have less confidence in their own abilities to work effectively with those children, and to be less inclined to include such children in general education classrooms. Among the ideas to enhance positive attitudes toward inclusion, as noted by Wall, are: increasing the amount of positive contact teachers have with children with visual impairments before the teacher is expected to teach such children, and providing novice teachers with informational visits, reading materials, meetings, and workshops prior to the children entering the classroom.

4.5. Conclusion of the chapter

This chapter four is dedicated to the presentation of the data from GS Gahini. The research data were analyzed and interpreted using other previous research. Interpretations of the results with discussion used other previous research according to barriers to learning faced by students with visual impairments in G.S. Gahini inclusive school Kayonza district as well as the opportunities were seen in this chapter.

CHAPTER FIVE:

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0. Introduction

The purpose of chapter five was to present a brief and clear summary of the data, followed by presentations of comprehensive set of conclusions and recommendations based on the data discussed in chapter four.

5.1. Summary of Findings

This study examined barriers to learning faced by students with visual impairments in G.S. Gahini inclusive school Kayonza district. The study was guided by three specific objectives, those were to find out challenges faced by children with visual impairment in a regular classroom, to find out teachers' attitudes towards teaching children with visual impairment in mainstream schools and to find out the modes of communication that teachers in mainstream schools use to communicate with visually impaired learners.

This study concerned of learners with visual impairment and teachers taken as target population. The study involved a total of 28 learners with visual impairment and 38 teachers

5.1.1 Challenges faced by children with visual impairment

The first objective was to find out challenges faced by children with visual impairment in a regular classroom. From the study, findings revealed that the learners with visual impairment as

illustrated in chapter 4 indicated that these learners face a number of challenges in an inclusive class/school. The major challenge seems to stem from communication barriers between the learners and teachers. As revealed by the findings, most children with visual impairment fail to understand visual explanations. Moreover, most of these children revealed that fear to seek help for fear of disturbing others perhaps this is from the past experience/responses they have suffered whenever they tried to seek assistance. This is made worse by the fact that teachers are reluctant to reach out for these children whenever they needed help. This elaborates how lack of communication techniques as a result of failure to use total communication to meet the needs of all children in class. It should be noted that effective learning/teaching requires active participation of both the teacher and learners. Where this participation is dominated by one party, learning may not take place.

Kizito and Sakwa (194) further argue that the most effective way of fulfilling those basic needs is the ability to communicate with people around us. A person's failure to make interactions with other people and the environment may result into social problems like stereotypic behavior patterns not good for society and the child itself. In order to avoid such behaviors, teachers and parents as well should be committed to learning communication skills to be able to bridge the communication gaps between them and children.

5.1.2. Methods used in teaching learners with visual impairment

The second objective was to find out the methods teachers use when teaching children with visual impairment. Findings of this study revealed different methods such as the use of question and answer methods. All the twenty-six classes observed use of question and answer was common. Questions were posed for those who are sighted or regular as well as those who are visually impaired. However, the frequency in which questions were asked was high in mathematics, sciences and languages compared to humanities and technical. Further it was noted that most sciences especially physics and chemistry were asked in a manner that never gave the visually impaired learners to synthesize the question even where observation was required. Furthermore, the use of group discussions is another method. Although during interview it was highly mentioned to be a teaching method used by the teachers it was only three teachers who were observed using the same approach out of the twenty-six classes observed. This was seen in two English classes and

one in a history and government class. However, in the three cases the discussion was done for a short period of time that may not give the visually impaired learners chance to contemplate the issues discussed and participate effectively. Besides, lecture and explanation method was used by all the twenty-six classes observed. Further it was highly mentioned by the respondents interviewed. Voice projection during this method was seen to be adequate for the learners with visual impairment among all the teachers teaching humanities and languages. However, there were two case one in physics and the other in chemistry that sound was fast and low for a learner with visual impairment and experimentation was a common method employed in sciences. Further in some experiments especially in chemistry the learners with visual impairment were straining much in order to identify the color changes that occurred during chemical reactions. In addition, demonstration method was also mentioned as well as being observed and observation methods respectively. This was mainly observed in science subjects especially in chemistry where the teacher demonstrated the various experiments before instructing the learners to carry out some experiments.

Since students with visual impairments rely mainly on verbal information for their learning, audio devices should be incorporated to aid the teaching process. These include things like audiocassettes and compact discs. However, lesson contents with diagrams and tables cannot be well explained in an audio format (Salisbury, 2018). Moreover, a lesson can be tape recorded and given to students with visual impairments for later playback at their convenient time (UNESCO, 2001).

5.1.3. Mode of communication used to instruct visually impaired learners

The third objective was to find out the modes of communication that teachers in regular school use to communicate with visually impaired learners. From the findings, the study revealed that all respondents accepted that demonstration, teacher centered, talk and chalk methods are common methods used when teaching learners with visual impairment. Another group of some respondents also revealed that total communication is second common method used. The findings on this objective established that most teachers use methods of teaching that are not all appropriate to the level and understanding of learners. Teaching requires teachers to develop

sensitivity and skills in teaching to assist learners in psychological and educational adjustments. Appropriate methods of teaching result into successful teaching and learning. Besides, the frequency uses of chalk and teacher centered methods do not only demotivate learning but also makes visually impaired learners to lose a lot due to the fact that they do not have chance to follow teacher's writings on the chalk board. Also some few respondents said they use group work during while teaching. Therefore, there is inadequate use of group work in the teaching process. This deprives pupils of opportunities of learning by doing, discussing and experience leading to lack of motivation and denies deaf children chance to interact with their sighted peers. Children with special needs should receive additional support (remedial teaching) in the contents of the regular curriculum. Different methods should therefore be used to get them understand and be understood. These include demonstration, childcentered, experimentation, demonstration, child-to-child teaching.

Hengarly (1988) cited that joint participation in education activities is the full form of teaching children with special education needs. He further said that most of the schools have failed to teach children with special needs due to teachers who have not acquired knowledge and skills in modifying the materials methods to meet the needs of the children with disabilities fully. Holbrook and Koenig (2000) believe students should have a variety of tools that they can use to access the curriculum as independently as possible. Students with severe vision impairment can use a combination of auditory and tactile technologies to assist them accessing the curriculum such as screen readers, touch typing, Braille, and auditory recordings

5.2. Conclusions

From the general objective that was to investigate educational barriers to learning of the learners with visual impairments in inclusive schools, the researcher formulated specific objectives that helped him to know the educational barriers for the said category of learners. The study had to explore the various methods that the teachers could use to remove the barriers of not using appropriate methods and how the communication between teachers and learners was viewed by learners.

The researcher used the conceptual framework in which the variables were so important, thus: independent, dependent and intervening. Based on these variables, the researcher verified whether some of the educational barriers were not due to the lack of having not enough qualified teachers in special and inclusive education and insufficient teaching and learning materials that would lead to failure and poor performance. Having done the research about all educational barriers, the researcher found out that the major barrier was the communication between learners and teachers as the teachers use teacher centered and chalk method. In most cases there is a use of visual explanations which is a hindrance for learners with visual impairments. Briefly the methods used are appropriate

The recommendations to school, teachers and the Ministry of education and other stakeholders were made.

5.3. Recommendations

This part provides the recommendations that the government and other education stakeholders need to implement so as to ensure quality education among learners with visual impairment. Further the part suggests areas of interest that more research is required so as to provide relevant information for improving learning for the students who have visual impairment and other special educational needs.

5.3.1. Recommendation for teachers and school administration

- i. All educational barriers should be removed by the means of having qualified teachers in special needs education
- ii. As it has been found out that some of the teachers use the inappropriate ways of teaching due to the lack of variation of methods; the school and the all concerned organs such as Ministry of education, it is better to equip teachers with more trainings on how to teach inclusive classes

- iii. Teachers should endeavor to get more knowledge the learning needs of children with special needs by going for further studies, attending refresher courses and workshops on Special Needs Education.
- iv. The government and other education stakeholders should provide inclusive schools with various adequate adaptive materials and facilities for effective content delivery to learners with visual impairment.
- v. Seminars for teachers to learn to make and use educational materials from local materials should be organized locally by districts. Local manpower should be utilized to train and other people who are more experienced be in case there are areas where competence seems to be limited. This will increase the number of teachers with skills and eliminate the problem of teachers depending on the already made teaching/ learning materials which are expensive and scarce
- vi. Teachers handling children with visual impairment should have compassion and love for assisting these children to learn and accept them as they are, freely interact with them, coming down to their level, building good rapport and knowing their likes and dislikes.
- vii. The physical environment has to be taken into consideration, therefore the school administration should remove all physical barriers

5.3.2 Recommendations for Further Research

- i. Research should be carried out on causes of poor implementation of inclusive education in Rwandan schools.
- ii. There is need for a study on causes of poor transition of learners with visual impairment from primary to secondary schools and beyond.
- iii. Researchers need to look at the strategies of adaptation teaching and learning materials for students who are having visual impairments.

References

- Ainscow, M. (1995). *Education for All Making it happen in keynote press presented at international special conference, Birmingham UK.* .
- Ainscow, M., & Unesco. (1994). *Special needs in the classroom: A teacher education guide.* Unesco.
- Ary D, Jacobs L and Sorensen C (2010) Introduction to research in education, USA Wadsworth, engage learning.
- Bender, R. E. (1970). *The conquest of deafness.* Western Reserve University.
- Bender, R. E. (1970). *The conquest of deafness; a history of the long struggle to make possible normal living to those Hadicapped.*
- Best, A. B. (1992). *Teaching children with visual impairments.*
- Bishop, V. (1996). *Teaching visually impaired children . USA Charles C Thomas publishers* (2nd ed.).
- Bogdan, R. C., & Biklen, S. K. (1992). *Qualitative research for education: an introduction to theory and methods* (2nd ed.).
- Bowring-carr, C. (1997). *Effective learning in schools: How to integrate Learning and Leadership for Successful Schools.*
- Braun Clarke. (2006). *Qualitative Research in Psychology: Using Thematic Analysis in Psychology.*
- Bromell, D., & Hyland, .: M. (2007). *Social Inclusion & Participation: A guide for Policy and Planning .*
- Brym, N, A. (2004) Social Research Methods (2nd Ed). New York: Oxford University Press.

- Creswell (2009) Research Design. Qualitative, Quantitative and Mixed Methods Approaches 93rd Ed). U. K: SAGE Publications.
- Creswell. (2009). *Qualitative, Quantitative and Mixed Methods Approaches 9*.
- Dalen. (1982). *Focus on Co-Teaching as a Special Educational Provision*.
- Eklindh K. & Van den Brule-Balescut. (2006). The Right to Education for Persons with Disabilities: Reflecting on UNESCO's Role from Salamanca to the Convention on the Rights of Persons with Disabilities.
- Everett. (2009). *Belonging: Social Exclusion, Social Inclusion, Personal Safety and the Experience of Mental Illness*.
- Fraser, & Mauve, M. (2008). *Teaching Life Sciences to Blind and Visually Impaired Learners. South Africa: University of Pretoria. .*
- Gal, M., Gall, J., & Borg, W. (n.d.). Educational Research: An introduction Research.
- Garner, P., & Davies, J. D. (2001). *Introducing Special Needs*. David Fulton.
- Gay, R. L., Mills, G. E., & Airasian, P. (2009). *Educational Research: Competence for Analysis and Application* (9th ed.). Pearson Education Limited.
- Gay, L.R., Mills, G.E. & Airasian, P. (2009). Educational Research: Competence for Analysis and Application (9th Ed., L. R., Mills, G. E., & Airasian, P. (2009).
- Giddens, A. (1984). The constitution of society, outline of the theory of structuration.
- Grace, S., & Grave stock, P. (2009). Grace, S. & Grave stock, P. (2009). Inclusion and Diversity: Meeting the Needs of All students. New York: Rutledge: Taylor & Francis group.
- Grinnel, R., & Williams, M. (1990). *Research in social research*. Peacock publishes.
- Gronlund, A., Lim, N., & Larsson, H. (2010). *Effective Use of Assistive Technologies for Inclusive Education in Developing Countries: Issues and challenges from two case*

studies. International Journal of Education and Development using Information and Communication Technology.

Hannell, G. (2007). Success with Inclusion: 1001 Teaching Strategies Activities That Really Work.

Hearty, S. (1993). Meeting Special Needs in Ordinary schools: An Overview. London: Cassel Education.

Hegarty, J. (1987). Hegarty, J. (1987) Meeting special needs in ordinary schools; London: Cassel.

International Conference Centre (ICC) Research in the Stakeholder Dialogue on Education, Gender and Inclusion. Dar-es-Salaam. (2008).

(2008). *International Conference Centre (ICC) Research in the Stakeholder Dialogue on Education, Gender and Inclusion.*

Israel, M., & Hay, I. (2006). Research Ethics for social Scientists: Between Ethical Conduct and Regulatory Compliances.

Johnson B. Christiansen. (2012). *Educational Research: Quantitative, Qualitative & Mixed Approaches* .

Johnson, B. H., & Skjorten, M. D. (2001). *Curricula for the plurality of individual Learning Needs: Some Thoughts concerning Practical Innovation towards an Inclusive Class and School* .

Karangwa, E., Iyamuremye, D., & Muhindakazi, A. (2016). Plights of learners with Visual Impairments in Rwandan science classes: Evidencing teachers' practice in HVP Gatagara. *Rwandan Journal of Education*, 1(2), 2-3.

- Kesiktaş, A. D., & Akcamete, A. G. (2011). *The relationship of personnel preparation to the competence of Teachers of students with Visual impairments in Turkey*.
- Lipsky, D. K., & Gartner, A. (1997). *Inclusion and School Reform: Transforming America 's Classrooms* . Paul Brookes Publishing.
- Liu, A. (1995). Full Inclusive and Deaf Education: Redefining Equality. *Journal of Law and Education*.
- McLaughlin, J. A., & Lewis, R. B. (2005). *Assessing students with special needs* (6th ed.). Pearson Education.
- McLaughlin, J. A., & Lewis, R. B. (2005). *McLaughlin, J A, & Lewis, R.B. (2005) Assessing students with special needs (6th ed). New Jersey*.
- Meder, & Butry Mowicz. (n.d.). *A report on non-profit independent new organization on equality innovation on education Nov 11 2017*.
- Meder, J., & Butry, M. (2017). *A report on non-profit independent new organization on equality innovation on education*.
- Mercy, K. M. (2011). *Challenges Facing Teachers in Teaching Students with Visual Impairment in an Integrated School: A Study of Moi Girls' School* [Master's thesis]. <https://ir-library.ku.ac.ke/bitstream/handle/123456789/5967/Mercy%20Mutonga.pdf?sequence=3&isAllowed=y>
- Miles, M. B., & Huberman, A. B. (1994). *Qualitative Data Analysis: An Expanded Source Book* (2nd ed.). SAGE.
- Miles, S. (2022, June 12). *Learning from Differences: Understanding Community Initiatives to improve Access to Education*. www.eenet.org.uk. Mitchell, D. (2008). *What really works*

- in special and Inclusive Education: Using Evidence Based Teaching Strategies*. Taylor & Francis Group.
- Mmari, T., Mzee, O., & Frankenberg, A. (2008). *Education for children with disabilities and the use of ICT for inclusive education in Tanzania*. Embassy of Sweden.
- Mmbaga, D. R. (2002). *The Inclusive Classroom in Tanzania: Dream or Reality?* Stockholm University.
- Mwakyaenja, B. (2013). *Teaching students with visual impairment in inclusive classrooms: a case study of one secondary school in Tanzania* [Unpublished master's thesis]. university of Oslo.
- Mwoma. (2017). Education for children with special needs in Kenya. *Journal publication*.
- Nasiforo, B. (2015). *Academic impediments students with visual impairments encounter in the colleges of university of Rwanda* [Unpublished doctoral dissertation]. Kenyatta University.
- Patton, M. (2002). *Qualitative Research & Evaluation Methods* (3rd ed.). Publications.
- Pauline, D. (2003). *Including children with visual impairment in mainstream Schools: A practical Guide*. David Fulton Publishers.
- Peters, S. J. (2003). *Peters, S. J. (2003). Achieving Education for all by including those with Disability and special Educational Needs*. World Bank.
- Polat. (n.d.). Polat, F. & Kisanji, J. (2009). *Inclusive Education: A Step towards Social Justice*. United Kingdom: Edual RPC.
- Sacks, S. Z., & Subernan, R. K. (n.d.). Sacks, S. Z. & Silberman, R. K. (1998). *Educating Students Who Have Visual Impairments with other Disabilities*.

- Salisbury. (2008). *Salisbury. (2008). Teaching Pupils with Visual Impairment: A Guide to making the school Curriculum Accessible .*
- Savolainen, M., H., Matero, M., & Kokkali, H. (n.d.). *When all means all. Experiences in three African countries with EFA and children with disabilities.*
- Scruggs, E., Mastropieri,, M. A., M C., & Duffie, K. T. (n.d.). *Scruggs. E., Mastropieri, M.A. & M.C. Duffie, K.A. (2007). Co-teaching in Inclusive Classrooms.*
- Simon, C., & Echeita, G. (2010). *Simon, C., Echeita, G., Sandoval, M. & Lopez, M. (2010). The inclusive educational process of students with visual Impairments in Spain: An Analysis from the perspective of Organization .*
- Spungin, S. J. (n.d.). *Spungin, S.J. (2002). When you have a visual impaired student in your classroom: A Guide for Teachers. New York: AFB Press. .*
- Stakes, R & Hornby, G. (2000). *Meeting Special Needs in mainstream schools: Practical Guide for Teachers (2nd Ed), R. (n.d.). Stakes, R & Hornby, G. (2000). Meeting Special Needs in mainstream schools: Practical Guide for Teachers (2nd Ed) , R & Hornby, G. (2000). Meeting Special Needs in mainstream schools: Practical Guide for Teachers (2nd Ed) .*
- UNESCO. (1999). *Salamanca: Five years on : a review of UNESCO activities in the light of the Salamanca statement and framework for action.*
- UNESCO. (2022, June 15). *Incheon Declaration, world Education Forum 2015 Towards Inclusive and equitable quality Education and lifelong learning for all. UNESCO-UNEVOC.*
- Wade, S. E. (2000). *Inclusive education: A casebook and readings for prospective and practicing teachers. Routledge.*

Webster, A., & Roe, J. (n.d.). *Webster, A. & Roe, J. (1998). Children with Visual Impairment: Social Interaction, Language and Learning .*

Westwood, P. (1995). *Effective Teaching. Paper presented at the North West Region Inaugural Special Education Conference: Priorities, Partnerships.*

Wolfensberger, W. (1979). *The principle of normalization in human services.* Toronto National institute on mental retardation.

Yin, R. K. (2003). *Case study research: Design and methods.* SAGE.

APPENDICES

1:INTERVIEW GUIDE FOR TEACHERS

SECTION A: BACKGROUND INFORMATION

- a) Age.....
- b) Gender
- c) Years of experience.....
- d) For you long have you been in your current station.....
- e) What subjects do you teach?
- f) What is your highest qualification?
- g) Do you have any training in special needs education.....If yes state?

SECTION B: INTERVIEW QUESTIONS

- 1) How do you understand inclusive education?
- 2) What challenges do you face when teaching in an inclusive classroom?
- 3) How do you assess the learning needs of learners with visual impairments in inclusive classrooms?
- 4) What teaching methods do you use to teach students in inclusive classrooms?
- 5) What challenges do you face in using and adapting teaching methods for students with visual impairments in an inclusive classroom?

THANK YOU FOR YOUR PARTICIPATION!!

APPENDIX 2: OBSERVATION CHECKLIST

S/N	STATEMENT	YES	NO	COMMENT
I. TEACHING METHODS				
1	Teacher centered method			
2	Learner Centered method			
II. THE TECHNOLOGICAL RESOURCES WHICH ARE AT THE DISPOSAL OF LEARNERS WITH VISUAL IMPAIRMENTS.				
3	Availability of a resource room equipped with specialized resources, various learning materials and support services			
4	Computers			
5	Orbit readers			
6	Braille Embosser			
9	Cubarithm			
10	Talking calculators			
12	Perkins Brailier			
13	Voice recorder			
14	Slate and stylus			

15	Smart Brailier			
16	Swell Pro Graphic Machine			
III. BARRIERS OF ACCESSIBILITY AND SAFETY OF THE PHYSICAL ENVIRONMENT				
17	Moving in the school independently without any physical obstacles			
18	Availability of special toilets			
19	Availability of ramps			
IV. TEACHING/LEARNING BARRIERS ENCOUNTERED BY TEACHERS				
20	Approaches used while teaching learners with visual impairments			
21	Barriers to Inclusive Education encountered by teachers while teaching			
22	Plan for regular training on Special Needs Education and Inclusive Education			
V. ATTITUDINAL BARRIERS FOR PEOPLE WITH DISABILITIES ON INCLUSIVE EDUCATION				
23	Attitudinal barrier in sighted learners			
24	Attitudinal barriers noticed in Inclusive Education implementation			

B/C