THE ROLE OF EDUCATIONAL TECHNOLOGY IN TEACHING READING TO LEARNERS WITH VISUAL IMPAIRMENT IN INCLUSIVE PRIMARY SCHOOLS IN KUMI MUNICIPALITY, KUMI DISTRICT

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DECLARATION

I **ADEKE ANGELLA ROSE,** hereby declare that this is my original work of research report and has never been presented for award of Masters Degree in any other higher institution

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APPROVAL

We certify that this dissertation satisfies the partial fulfillment of the requirement for the award of a degree of master of Special Needs Education, of Kyambogo University.

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Date: _____

DEDICATION

I would like to dedicate this study to my beloved family members who stood by me spiritually, financially and morally till completion, especially the beloved children Kim and Joan who missed the mother's love and care.

Also, to my church members for standing with me in prayers, my brother Charles and sister Jane for their encouragement and material support. Please, I appreciate your support, prayers and endurance throughout the period I have been away from home because of these further studies.

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TABLE OF CONTENT

LIST OF TABLES

ABSTRACT

Educational technology is considered to be playing a great role in the teaching of reading to learners with visual impairment in inclusive primary schools. This study investigates the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. The study further sought to establish the types of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools, the relevancy of using educational technology and challenges teachers face when using educational technology. The study adopted a qualitative case study design in which three schools were investigated. They were eighteen (18) respondents in this study which included three (3) headteachers, six (6) teachers, and nine (9) learners with visual impairment. One on one semi structured interviews were administered to headteachers and teachers, focused group discussions were conducted for the learners. For purposes of corroboration, relevant documents related to educational technology in the schools were analyzed. The findings from this study indicate that, the types of educational technology teachers use include, Brailed educational materials, recorders and magnifying lenses. The study further reveals the relevance of educational technology as: Motivates learners to learn with high interest, builds confidence, promotes positive attitudes in learners, allows sharing, makes learning process real and increases learners' interaction. The challenges experienced by teachers in using educational technology were inadequate knowledge and skills among teacher, high expectations among parents and inadequate parental involvement. The study concluded that the teachers use different types of educational technology which is relevant to the teaching of reading to learners with visual impairment. The study recommends that government should reduce the number of teacher pupil ratio and sensitize different and to give teachers refresher courses on how to teach reading to learners with visual impairment.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This study was to investigate the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools in Kumi Municipality, Kumi District. This chapter constitutes the background of the study, Statement of the problem, the purpose of the study and the objectives of the study. It also has the research questions, the scope of the study, the significance of the study, historical, theoretical, conceptual and contextual background.

1.1 Background of the Study

The right to education is universal and expands to all children, youth and adults with or without disabilities. This right is protected in the Convention on the Rights of the Child (1989) and the Convention on the Rights of Persons with Disability (2008). It is also addressed in several significant, international declarations, including the World Declaration for Education for All (1990), the UNESCO Salamanca Statement and Framework for Action (1994) and the Dakar Framework for Action (2000). Ensuring the right to education for all is at the centre of UNESCO's mission, which is also affirmed and recognized by all its member states. UNESCO is not only interested in the provision of mere education but is very much concerned with the right to qualitative education for all.

The perception of visual impairment is still controversial since ancient times(Pascolini & Mariotti, 2012). More than 600,000 children in the United States live with some degree of visual impairment, of these over 95,000 are unable to read newspaper print and over 50,000 are legally blind, meaning that their visual acuity with corrective lenses is less than 20/200 in their better eye or their better field spans less than 20 degrees which also estimated that more than 1.5

million children in the world are legally blind (Aldajani, 2016). Visual impairment has been stereotyped and labeled by sighted people who have significantly affected the acceptance of persons with visual impairment, the tolerance towards them and their inclusion into societal life (McLinden, Ravenscroft, Douglas, Hewett, & Cobb, 2017). Despite the existence of international policies supporting inclusive education such as the Universal Declaration on Human Rights (UN, 1948) which emphasizes that every person has a right to education (Article, 26), the Convention on the Rights of the child (UN, 1989) which similarly point to rights of every child to get education (Articles, 28 &29), the Convention on the Rights of Persons with Disabilities (UN, 2006) which equally spells out education as a human right at all levels as well as respect for the rights of Persons with Disabilities (PWDs) among others, persons with visual impairment are still treated with some prejudice concerning their disability, education and inclusion into society. Some people however, believe that persons with visual impairment possess some extra powers and abilities such as better sense of things or better judgment abilities (the sixth sense) which enable them to perform different day to day activities but in most times handicapped by the environment.

According to the Asia Pacific Disability Rehabilitation Journal (2009), attitude has been noted to be a vital ingredient for the success or failure of learners with visual impairment in their optimum development, learning and participation. The attitude of teachers, parents and peers therefore, can have a profound effect on the social and educational integration of learners with visual impairment. It makes a great difference to these learners whether the attitude and actions of stakeholders reflect considerations for their real needs or are merely prompted by pity or monetary limitations. The adjustment of learners with visual impairment to society begins with the ability to adjust to their own family members. A learner brought up with affection and care in

the least restrictive environment would be able to cope up better with school, community and entire societal world.

In spite of the ratification of the various international policies by the government of Uganda to promote the inclusion of learners with Disabilities into regular schools, there is still a challenge of accepting them fully due to negative attitudes from their parents, teachers, peers and community in general.

The Government White Paper on Education (1992) spells out government's commitment to provide primary school education to all irrespective of origin, social groups or gender. It also emphasizes among others, integration of Persons with Disabilities into ordinary schools. In a similar development, the Constitution of the Republic of Uganda (1995) clearly states that all persons have a right to education (Article, 30). All these measures put in place by government are not reflected in schools to the required standards to benefit learners with disabilities including those with visual impairment.

In Kumi Municipality, Kumi District, learners with visual impairment seemed not to cope with the teaching process which grossly affects their learning most especially in reading in inclusive primary schools. This is as a result of negative attitude towards them which impact negatively on their development, learning and participation.

Globally, it is reported that the reading skills of learners is devoid of fluency, without fluency in reading, it becomes difficult for such learners to comprehend what they read (National Assessment Of Progress in Education(NAPE) UNEB – 2016)

Educational Technology is the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources https://educationaltechnology.net

Literacy is one area in which well-applied technologies can act as a lifeline to learners with learning difficulties.

As many as 8/10 learners with learning difficulties have reading problems so significant that they cannot read and understand grade level material (Lerner, 2003). Learning difficulties often interfere with learners' ability to grasp principles of phonetics, decode text or comprehend what they read, that is why assistive technology is recommended in inclusive primary schools as it breaks down barriers to full literacy, Educational Leadership, December(2005- January 2006/ Vol 63/number 4 pages 72-75.

Theoretical Frame work

This study was guided by Bandura's Social Cognitive Theory (1986). Bandura is a clinical psychologist born in Canada but has spent his professional life in the United States. Bandura's Social Cognitive Theory started as social learning theory (SLT) in 1960s and later developed into Social Cognitive Theory(SCT) in 1986. The theory posits that learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment and behavior. The theory states that people learn not only through their own experiences, but also by observing the actions of others and the result of those actions. Learners with visual impairment therefore are able to observe using their remaining senses like sense of touch, smell which enables them to explore the environment around them as they play and draw meaning from it. For the learners with low vision, they can be helped to learn using bold letters on charts, chalkboard and in flash cards.

They can also observe various actions of teachers as they use educational technology in teaching them reading and as a result, they get exposed to various reading activities during instructional process which eventually improve on their reading abilities in inclusive primary schools.

The Individuals with Disabilities Education Act (IDEA) in United States of America (USA) defines the term visual impairment as an interference with sight that even with correction, adversely affects a learner's educational performance. IDEA further notes that visual impairment is an umbrella term encompassing low vision and blindness.

In a related development, the international classification of Diseases, 11 (2018) classifies visual impairment into two groups thus distance and near presenting visual impairment. Distance visual impairment in this case includes mild presenting visual acuity worse than 6/12, moderate presenting visual acuity worse than 6/18, severe presenting visual acuity worse than 6/60 and blindness presenting visual acuity worse than 3/60. On the other hand, the education of learners with visual impairment can therefore be enhanced with the use of educational technology. Educational technology is the practice of facilitating learning and improving performance by creating, using and managing different technological processes and resources (Abrani, 2006). In this case, education technology is perceived as technological tools and media that assist in communication of knowledge and skills. It denotes instructional technology as the theory and practice of design, development, utilization, management and evaluation of processes and resources for learning (Dempsey, 2006). As such, educational technology implies all valid and reliable applied education material, equipment as well as processes and procedures.

In a related development, educational technology is the process of integrating technology into education in a positive manner that promotes a more diverse learning environment and a way for a learner to learn how to use technology in their common assignments (Smaldino, 2005).

Generally, it is an inclusive term for both the material tools and the theoretical foundations for supporting learning and teaching processes. Therefore, educational technology is not restricted to high technology. It implies anything that enhances classroom learning in the utilization of blended, face to face or online learning.

In 2010, the Special Education Technology British Columbia (SET-BC), a provincial resource program of the British Columbia under the Ministry of Education divides reading strategies for learners with visual impairment into three thus Paper strategies, auditory strategies and E- Text strategies.

In light of the a above development, a national panel was formed to assess the effectiveness of different approaches used to teach reading to learners with visual impairment with the aim of establishing appropriate and standardized educational technology that teachers would use in schools.

In regard to the use of educational technology strategies, it is the role of a teacher to determine independent reading, instructional reading level and learner's frustration level depending on the application. The reading ability of learners with visual impairment can be enhanced through the application of appropriate educational technology strategies that are differentiated to cater for individual differences among learners with visual impairment.

Teachers should therefore, assess learners with visual impairment in order to determine the appropriate educational technology they need to meet their individual needs in reading.

Reading is essential to learners with visual impairment because it is a foundation for understanding other academic subjects in inclusive primary schools. A learner who cannot read efficiently is most likely not to observe instructions when responding to written assignments in other subject areas. This implies that teachers should promote reading abilities of learners with visual impairment through the appropriate educational technology to enable them acquire proficiency skills in reading which in turn helps them to cope with education in inclusive primary schools.

Learners with visual impairment are capable of improving their reading abilities if appropriate educational technology is applied by the teachers during the teaching and learning process in inclusive primary schools. However, this seems to be the opposite in Kumi-Sub County, Kumi District where educational technology is not applied appropriately in the teaching of reading to learners with visual impairment making them to experience difficulties in reading.

It is against this background that the researcher is compelled to take initiative to conduct a study on the role of educational technology in improving reading abilities of learners with visual impairment in inclusive primary schools in Kumi- sub county in Kumi District since no authority seems to be concerned with this appalling situation.

1.2 Statement of the Problem

This study focused on the role of educational technology in teaching reading to learners with Visual impairment. Educational technology is reliable in facilitating effective teaching of learners with visual impairment. Teachers in schools where learners with visual impairment are placed do try to use the available educational technology in teaching reading but these learners continue to fail due to learning difficulties. In light of this view, learning difficulties often

interfere with learners' ability to grasp principles of phonetics, decoding text or comprehend what they read, that is why educational technology is recommended in teaching reading as it breaks down barriers to reading (Educational Leadership vol 4, 2006). This study therefore, is to address the gap that exists in teaching reading to learners with visual impairment so as to improve on their reading skills in inclusive primary schools.

1.3 Purpose of the Study

The purpose of the study was to investigate the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools in Kumi Municipality, Kumi District.

1.4 Objectives of the Study

The objectives of the study were to:

1. Find out the types of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools in Kumi Municipality, Kumi District.
2. Examine the relevance of educational technology in teaching reading to learners with visual impairment in inclusive primary school in Kumi Municipality, Kumi District.
3. Establish the challenges experienced by teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools in Kumi Municipality, Kumi District.

1.5 Research Questions

The following were the research questions that guided the study:

i. What types of educational technology are used by teachers in teaching reading to learners with visual impairment in inclusive primary schools in Kumi Municipality Kumi District?

ii. What is the relevance of educational technology in teaching reading to learners with visual impairment in inclusive primary school in Kumi Municipality, Kumi District?

iii. What are the challenges experienced by teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools in Kumi Municipality, Kumi District?

1.6 Scope of the Study

The study was carried out in three inclusive primary schools in Kumi-Municipality, Kumi District. Kumi Municipality is found in Eastern region of Uganda. It is bordered by Kumi sub-county in the North, Ongino sub-county in the East, Atutur sub-county in the South and Kanyum Sub- County in the West

The study concerns the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools in Kumi Municipaty, Kumi District.

This study was conducted from August, 2018 to June, 2019.

1.7 Significance of the Study

The findings of this study are to enable teachers to improve on their methods of teaching reading to learners with visual impairment in inclusive primary schools. As a result, learners with visual impairment would improve on their reading abilities by participating fully in the teaching and learning process. The study findings are to suggest to policy makers the relevance of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. This would influence them to enact Policies that promote the use of educational technology in

teaching learners with visual impairment in inclusive primary schools. The study findings are to further emphasize on parents' roles in supporting their children with visual impairment in inclusive primary schools. This implies that parents would observe the need to provide their children with the most suitable educational materials which enhance learning through the use of appropriate educational technology.

Finally, this study would provide valid literature that other future researchers would use in conducting related studies hence increasing knowledge in the field of special needs Education.

Definition of terms

Inclusive education - is essential programme that enables all learners with or without disability to participate fully in the life and work of mainstreamed settings to meet his or her learning needs.

Educational technology-refers to the strategy in teaching which improves reading abilities of learners with visual impairment in inclusive primary schools

Visual impairment is an umbrella term that encompasses low vision and blindness

Reading is a process of looking at a series of written symbols and getting meaning from them. It is a receptive skill through it we receive information. (**Include the citation)**

1.8 Conceptual Frame Work

According to Maxwell (2009), a conceptual frame work is an analytical tool with different variables and contexts which are used to make conceptual distinctions which organize ideas into a broad concept.

The following is a Conceptual Frame Work illustrating how the variables considered relate to each other basing on social model of disability. In social model of disability, the environment is to blame for limiting learning, participation and development of a person with disability but not disability in itself.

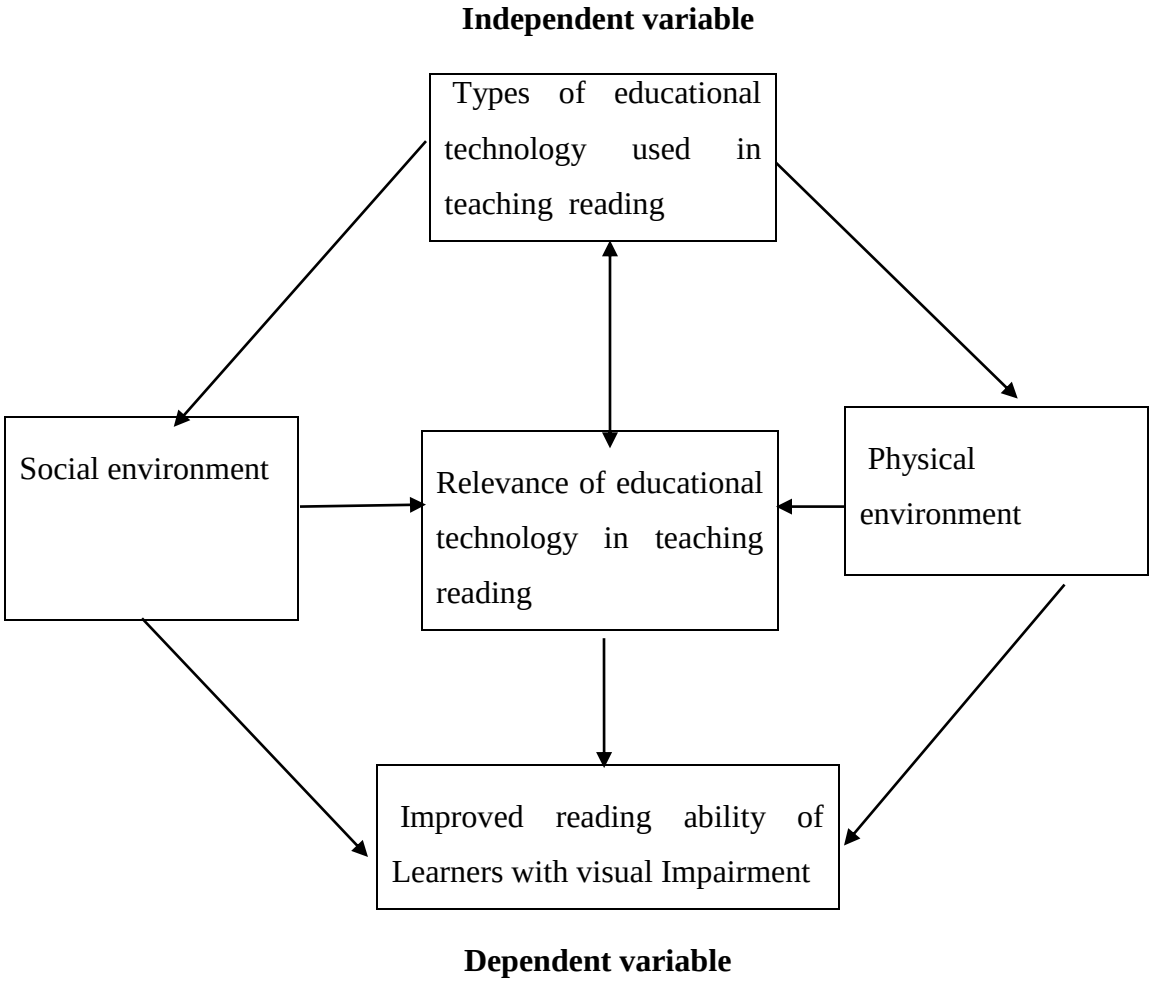

Figure 1: Source: Adapted from the technology integration improvement plan, 2017 (TIIP)

In light of this conceptual frame work, educational technology refers to the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate processes and resources (Oct, 12, 2016, https://educationaltechnology.net) . The use of educational technology is therefore vital in the teaching of reading to learners with visual

impairment and this is most realized when physical and social environments are properly used. Therefore, the teaching of reading is determined by social and physical environment of the school as well as the types of educational technology used by teachers in this regard. The social environment in this case means the influence of teachers, school administration, peers and parents in enhancing reading abilities of learners with visual impairment in inclusive primary schools. On the other hand, the physical environment implies the types of the teaching facilities and educational materials available for learners with visual impairment such as classrooms, chalkboards, resource rooms, lighting systems, furniture, projectors, embossed charts, ground maps among others.

Conclusively, improvement in the reading ability of learners with visual impairment depends on the teachers' competence in using appropriate educational technology and availability of support provisions in and outside school.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

This chapter presents the published works of other authors and researchers in relation to the objectives of the study which included the types of educational technology teachers use in teaching reading to learners with visual impairment, the relevance of educational technology in teaching reading to learners with visual impairment and the challenges experienced by teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools, in Kumi Municipality, Kumi District. The review in this chapter is based on literature from secondary sources including books, published journals and internet.

2.1 The types of Educational Technology teachers use in teaching reading to learners with visual impairment in Inclusive Primary Schools

The literature review in regard to the types of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools is as presented:

Keeffe (2004) has noted that the use of stand and hand held magnification with regular text helps to enhance visual functioning of learners with visual impairment. He further observes that a typical learner who would use a stand and portable magnifier is a learner with low vision who has difficulty in reading regular print and requires immediate enlargement of text and/or graphics.

Enlargement of small amounts of text, pictures, diagrams, charts on photocopier would be significant in increasing the reading ability of learners with visual impairment (Holbrook, 2000). This implies that small amounts of materials are enlarged for the learner with visual impairment

using a photocopier to benefit a learner with low vision who has difficulty in reading regular print and needs quick access to classroom materials.

In a related development, Linden (2009) asserts that provision of large print version of the text is vital for learners with visual impairment since it enables them to read text materials with less difficulty. She added that large print materials such as textbooks or novel that has been prepared in a large font size of 18 or 24 point would promote reading efficiency of learners with visual impairment. This means that a typical learner who would use large print material is a learner with low vision who has difficulty reading regular print.

According to Mason (1997), some learners with visual impairment may require change of background colors to increase their reading abilities. This may involve color alternatives for example use of black, blue and white charts and maps depending on individual learner's needs.

Use of stand- alone video magnification is another level of educational technology teachers use in teaching reading to learners with visual impairment (Ocloo, 2003). A video magnifier is a system that uses a video camera to project a magnified image of printed text, handwriting or photographs onto a video monitor or Television screen. Some video magnifier models for example room viewing systems have the capability to view the blackboard or materials posted on walls around the classroom. In this case, a learner who would use a video magnifier is a low vision learner who has difficulty in reading regular print and requires enlargement of text and/or graphics.

Closely related to the above is the use of video magnification with computer integration (Poel, 2007). He further observed that the computer allows the learner to save the printed text and/or

graphics as a computer file. This enables the learner with visual impairment to retrieve the saved text for reading at time of convenience.

Provision of paper copies in Braille is important in facilitating the reading abilities of learners who are blind or learners who have limited/ no functional vision (Osterhaus, 2003). Braille generally is a tactile reading system for learners who cannot read print. It is therefore, through Braille that such learners can access reading materials to cope with academic demands in schools.

Waldron (2006) has pointed out the provision of electronic text (E-Text) with no enhancements as a suitable means to facilitate reading of learners with visual impairment. This is generally any text based information that is available in a digital format and read by electronic means. A typical learner who uses E-Text requires access to curricular and recreational reading materials in electronic format.

Change of appearance of Text and/or Background is another educational technology used by teachers in teaching reading to learners with visual impairment (Dickinson, 2008). This implies that changing the font size and color of the text and/or background is crucial in this development. A learner who would benefit from changing the appearance is one who requires higher contrast, different font, large print and spacing.

Diana (2004) asserts that magnifying text and/or computer screen is effective strategy in promoting reading skills among learners with visual impairment. This means that the size of the text is changed either by increasing the font size, increasing the zoom or using special screen magnification software. Magnification of the computer screen means that elements such as icons, menus and dialogue boxes are enlarged either by customizing the operating system or by using

screen magnification software. A learner who uses magnification is one who requires enlargement of some or all on-screen elements.

According to Cowan (2005), provision of electronic-text with tracking support is useful educational technology in the teaching of reading to learners with visual impairment. Tracking support means that words or sentences are highlighted on the screen as E-Text is read to the learner. Some programs allow this highlighting to be used with or without speech. A learner who would benefit from tracking support would be one with difficulty in keeping his/her place when reading due to visual acuity loss, eye muscle imbalances, visual field deficits, visual perceptual skill delays and processing problems.

Another form of educational technology for teaching reading to learners with visual impairment involve the use of auditory strategies which include using live readers and auditory books or books on tape, CDs and MP3 players (Brooklen, 2000). This strategy best suits learners with visual impairment who suffer from visual fatigue and those with blindness.

Oppong, (2003)pointed out the need to use refreshable Braille as a measure towards promoting the reading competencies of learners with visual impairment. This educational technology is fit for mostly learners who are blind or those with severe low vision that prohibits them from reading text by use of residual vision.

2.2 The Relevance of Educational Technology in teaching reading to learners with Visual impairment in Inclusive Primary Schools

The review of the related literature in relation to the relevance of educational technology in teaching reading to learners with visual impairment in inclusive primary schools is as stipulated:

Many exciting applications of educational technology in schools indicate that new technology based models of teaching and learning have the potential to improve educational outcomes. This has led to increased demand on instructional technology to facilitate standard educational practices (Schank, 2001). Teachers therefore, are compelled today to employ appropriate methods of teaching based on modern approach which calls for use of education technology to increase reading abilities of learners with visual impairment in inclusive schools.

The use of educational technology in teaching learners with visual impairment results into change of attitude by teachers, peers, parents and other stakeholders towards learners with disabilities Mwane (2000). This implies that creation of awareness to public on the potentials of learners with visual impairment is achieved as they demonstrate their abilities in reading using educational technology.

Integrating technology into the classrooms is an effective way to connect learners with visual impairment to all opportunities around them as they explore the different learning styles (Hartens, 2006). This approach to teaching reading to learners with visual impairment prepares them for various future careers.

Educational technology provides learners with visual impairment the opportunity to increase the interaction with their classmates and teachers hence encouraging collaboration in the process of teaching and learning of reading in inclusive primary schools (Coley, 2007). This means that through the use of educational technology, learners and teachers are motivated to work together during the instructional process.

Improvement in the level of commitment to both the teachers and learners with visual impairment is realised as a result of using educational technology in the teaching of reading in

inclusive classes. This is because educational technology transforms the learning experiences as it encourages creativity during the instructional process (Martta, 2004).

2.3 The Challenges experienced by teachers in using Educational Technology to teach reading to learners with Visual Impairment in Inclusive Primary Schools

The following is the literature review on the challenges experienced by teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools;

Technology based innovations offer special challenges in this scaling-up process. Systemic reform is not possible without utilizing the full power of high performance computing and communications to enhance the reshaping of schools yet the cost of technology, its rapid evolution, and the special knowledge and skills required of its users pose substantial barriers to effective utilization (Coley, 2007).

In a related development, McKinsey (2005) observed that limited knowledge and skills in using educational technology has been noted on several counts as a challenge to many teachers at different levels. This means that schools should establish substantial and extended professional development in the innovative models of teaching as a tool for fostering educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

The teacher –student ratio as cited by Hasley (2003) is a challenge too in using educational technology in teaching learners with visual impairment. He added that teachers find it difficult to prepare adequate educational materials based on technology to cater for individual learners despite the increase in their enrolment in inclusive classes. This therefore, leaves many of these learners unreached by teachers during the teaching and learning process of reading.

According to Engel (2000), time constraints also hinder the use of educational technology in the teaching of reading to learners with visual impairment. He further noted that it requires a teacher to spend a lot of time planning and coming up with appropriate technology which suits individual learner's needs in an inclusive class alongside other responsibilities assigned to him/her by the school hence a challenge affecting teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools.

Inaccessibility to computers is another challenge in implementing the use of educational technology in the teaching of reading to learners with visual impairment (Schank, 2001). This implies that schools without computers are limited in using educational technology in the teaching and learning process.

High expectations from parents and other stakeholders also pose great challenge to teachers when using educational technology in teaching reading to learners with visual impairment, Hunter (2006). Hunter further noted that many people assume that high performance is automatic with application of technology. This prompts stakeholders to set unrealistic demands on teachers and learners hence working under pressure.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the research approach and design that was used in this study. It explains the procedures undertaken during this research process and the plan for data analysis. All these have been discussed under separate subsections which include; research approach and design, the study population and sampling technique employed during data collection, method of data collection and the justification for the use of the method, matters of rigor and trustworthiness of the study process, ethical considerations, and plan for data analysis.

3.1 Qualitative Approach

In this study, a qualitative approach has been adopted in order to have a greater insight into the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. The qualitative approach allowed me to capitalize on analyzing subjective meanings and social production of issues, events by collecting non-standardized data and analysis obtained from semi-structured interviews other than numerical statistics as recommended by (Flick, 2014). The approach has helped in providing results with a deep insight into the of role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools as asserted by (Flick, 2014). According to Gall (2003), qualitative study is an inquiry that is grounded in the assumption that individuals construct social reality in the form of meanings and interpretation in a situational manner. In a related development, Merriam (2002) states that in qualitative approach the focus is more on understanding the meaning the respondents have constructed about their world and their experiences in a particular context and point in time.

It produces a detailed expression of respondents' feelings, beliefs, and opinions through interpreting their actions (Rahman, 2016). This has promoted holistic conceptualization of human behaviors and how it is related to the role of educational technology in teaching reading to learners with visual impairment in inclusive school according to (Flick, 2014).). Denzin and Lincoln (2002) as cited in Rahman (2016) stated that “qualitative research is an interdisciplinary field which encompasses a wider range of epistemological viewpoints, research methods, and interpretive techniques of understanding human experiences”(p.104). The choice of the method employed in this approach has helped me to understand in-depth the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools based on data collected from the sources.

3.2 Case Study Research Design

A research design is a framework or ‘blueprint' that outline the procedure the researcher will use to collect data to answer the initial research question (Aurini, Heath, & Howells, 2016). A research design helps the researcher in logical gathering, analysis, and interpretation of data (Creswell, 2014). Research Design is an overall plan that guides the researcher in conducting a particular study from the beginning to the end (Yin, 2003). The case study design was adapted for this study

It gives a detailed layout of plan and procedures that span the decision from a broad assumption. A case study design was selected to investigate the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools based on my personal experience and the audience of the study as recommended by (Creswell, 2009). A case study "is an in-depth exploration from multiple perspectives of the complexity and uniqueness of the role of educational technology in teaching reading to learners with visual impairment in inclusive

primary schools in a real-life context. It is research-based inclusive of different methods and is evidence-led" as pointed by (Simons, 2009, p.21). This has helped me to critically examine the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools data from multiple sources as recommended by Schwandt and Gates (2017)

3.3 The Population of the Study and Sampling Technique

This study was conducted in Kumi municipality Kumi district in the Eastern part of Uganda (Apendix A); the municipality has four divisions and one town council with a total of 18 governments aided and privately owned primary schools. It is bordered by Kumi Sub-county in the North, Ongino sub-county in the East, Atutur sub-county in the South and Kanyum sub-county in the West. I selected only three schools from municipality that participated in this study, the selection was based on convenience since they can easily be accessed, are located within the same area and have a community with similar socio-economic status.

3.4 Target Population

Target population includes the individuals or group to which the researcher wishes to generalize the study outcomes (Mertens& Wilson, 2012). This study constitutes a population of 111 respondents of which 06 head teachers, 45 teachers and 60 learners with visual impairment (VI) in the inclusive primary schools in Kumi Municipality, Kumi District.

3.5 Sample and the Sampling Technique

Bryman (2012) defines the term sample as a segment of the population that is selected for investigation. It is a sub set of the population selected to establish the reality about the entire population from which it is selected.

The sample for this study involved three (3) out of 06 Head teachers, six (6) out of 45 Teachers and nine (9) out of 60 Learners with visual impairment in inclusive primary schools totaling to eighteen (18) respondents.

Purposive sampling was employed to identify 18 study participants from whom data was collected. These participants included three headteachers, six classroom teachers and nine learners with visual impairment chosen from the three schools.

Table 1: Summary of the Population

Serial Number	Particular	Number per school	Number of schools	Total number
1	Headteacher	1	3	3
2	Teachers	2	3	6
3	Learners	3	3	9
Total		**6**	**3**	**18**

3.5.1 School

Three schools both government and private were selected on the assumption that they have learners with visual impairments and educational technology is used in teaching reading to learners with visual impairment in inclusive setting, besides, children in the three schools come from the same economic background and experiences. The government and private schools in Uganda use the same education policies and guidelines from the directorate of education standards regarding the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

3.5.2 Headteachers

The headteachers were selected because they oversee the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. Their duties are directly related to the topic of the study and therefore they are the key informants during my data collection since they are the custodian of valuable documents such as teachers' professional code of conduct, supervision reports, and individual teacher supervision records. This implies that the head teacher would provide more reliable information on the significance of the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

3.5.3 Teachers

It was essential to get information from the teachers especially those who have been supervised by internal supervisors. These six teachers were selected through snowballing as the headteachers requested the heads of department to select the teachers who have been supervised by each department. These teachers have empirical evidence on how the instructional supervision by the internal supervisors has improved their effectiveness in relation to instructional delivery.

3.5.4 Learners with Visual Impairment

Learners are always referred to as the key beneficiaries in the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. It is, therefore, healthy to find out their experience about the significance of the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. I have involved the three learners with visual impairment in each of the three schools because they can

verify instructional materials as well as support their colleagues in the use of educational technology in learning how reading in inclusive primary schools can be done.

3.6 Data Collection Tools and Procedures

When conducting the case study, the researcher employed a number of methods to collect data from the informants in order to provide a rich repertoire of information on the case under investigation as recommended by (Creswell, 2009). Creswell recommended researchers to read the guide to questions, strategies of inquiry and specific methods prior to data collection. According to Thomas (2016) use of semi-structured interview, document analysis and focused group discussion can help the researcher to get the adequate information required in the study. Basing on the scholarly literature on how to carry out a case study research, the researcher chose semi-structured interview, document analysis and focused group discussion as methods of data collection for this study. Tools for each of the methods chosen were developed and tested during the piloting. After making all the necessary adjustment on the interview guide, focused group discussion protocols and document analysis guides, the researcher employed these tools to obtain the data about the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

3.6.1 Semi-Structured Interview

The interview guide developed for the one-on-one semi-structured interview was used (Appendix B) to gather information from the headteachers and teachers who were interviewed independently using the same interview guide. An interview is a dialogue between the interviewer and the interviewee for the purpose of gathering data about a given research problem (Tadeo, 2011). The researcher used semi-structured interview because responses given by participants may not be adequate in respect to what the research question intends to establish,

therefore this method enabled me to probe for clarification from the respondents and seek additional information that are not in the interview guide but is relevant about the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools as recommended (Wengraf, 2001). During the interview, the responses were recorded to avoid missing out other viable information that has been given by the participants as well as promoting accuracy when reporting the findings of the study as pointed by (Bryman, 2012).

3.6.2 Focused Group Discussion

The researcher conducted focused group discussion with the learners in each school separately. The focused group discussion protocols (Appendix C) for the learners with visual impairment were developed to elicit their experiences on the significance of the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. It was very helpful in collecting information from respondents with similar experiences and the researcher was in position to get divergent views on how each of the participants responds to a given question. All participants were given the opportunity to respond to the question asked before proceeding to the next question. Focused group discussion has enabled me to elicit thought, perception, and ideas about the significance of the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools learners with similar experience as recommended by (Daymon & Holloway, 2011).

3.6.3 Documents Analysis

This involved reviewing the available documents related to the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. This has been done to provide a reference text to verify the information got during the interview and focused

group discussion. Documents consist of public and private records about the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools according to (Creswell, 2014). These documents analyzed included, Education Act 2008 which is still in force, supervision records, schemes of work, and lesson plans. To ensure a systematic review of the documents, a document analysis guide (Appendix D) was developed and used to analyze the documents. This has helped in understanding the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. I was able to obtain authentic information on how the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools when and why it has been done.

3.7 Data Analysis Procedure

Creswell (2009) explains that analysis of qualitative data requires the researcher to develop patterns in which he will organize his data for the clear conceptual understanding of their findings. Flick (2014b) holds that analysis remains a central node around which the researcher's work is organized. In this circumstance "the specific features of data does not so much drive the analysis instead, the analysis drives the search for data in a different format"(Flick, 2014b, p.10). In this study, the analysis of the data collected has been an ongoing process right from the time of data collection. The audio recorded interview and focused group discussion session have been transcribed. After which initial codes were developed to the data obtained from the respondents. This was meant to provide the first label to the responses the participants have given on the activities performed by the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools in relation to lesson preparation and use of instructional materials as observed by (Cohen, Manion, & Morrison, 2000). Focused coding was used to form sub-themes based on construct and literature reviewed about the role of educational

technology in teaching reading to learners with visual impairment in inclusive primary schools from the initial codes that were derived as the first label to the raw data. The researcher particularly made very close reference to the information from documents for corroboration in order to ensure the trustworthiness and rigor of the study findings. Data obtained through interview and focused group discussions have been triangulated to ensure the reliability of the information presented in this report. According to Heale and Forbes (2013), the use of two or more measures to confirm a finding will increase confidence in the rigor and trustworthiness of a qualitative research.

3.8 Trustworthiness and Rigor

This study has been under the close supervision of my supervisor who provided technical support during the whole process. The proposal was defended in the presence of the supervisors after which the researcher incorporated the feedback given by fellow course participants and the members of staff in the defense panel. During the piloting period, the research tools such as interview guide and focused group discussion guide were piloted to ensure consistency and trustworthiness of the data collection instruments. The raw data was submitted to the supervisors for checking and validation and the data matrix was regularly submitted to the supervisor for guidance and support.

3.8 Ethical Considerations

Study of the human subject requires the researcher to take precautionary measures to ensure that participants and the researcher are protected and safeguarded (Creswell, 2014; Rosnow& Rosenthal, 1997). Ethical issues refer to the researcher's respect of the respondent's rights, privacy, dignity and other sensitive aspects (Gall et al, 2003). In this study, the following were observed; a research proposal was written and submitted to the Department of Special Needs

Studies of Kyambogo University for approval before the data was collected. From the research area, the introductory letter from Kyambogo University (Appendix E) was used to obtain permission from the Principal Education Officer (PEO) who introduced me to the schools of study where the headteachers shown up their acceptance and allowed me to conduct the study in their schools. In order to avoid infringement of the informants' rights and freedom during my study as recommended by (Johnson & Christensen, 2012); consent forms (Appendix F-G) and self introductory letter (Appendix H) for the participants were developed and they consented before participating in this study). A summary of this report will be given to the schools that participated in this study and the office of PEO as reciprocation for their valuable contribution during my study. In order to ensure confidentiality, pseudonyms have been used to protect the identity of my research participant right from the raw data to writing the reports.

3.9 Assumption of the Study

The assumption in this study was that, educational technology was used in teaching reading to learners with visual impairment in inclusive primary schools. The researcher also had an assumption that the respondents will honestly provide information without hiding other data that may be vital in this study. All these two assumptions were true because the researcher found the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools was being considered vital in the three schools the researcher selected, and the respondents were willing and honest to sharing with the researcher the information the researcher required from them as well as allowing the researcher to access their documents and personal records.

3.10 Limitation of the Study

The limitations anticipated in this study was a methodological shortcoming of qualitative approach that does not explicitly explain the differences in the quality and quantity of information obtained from different respondents hence, arriving at a consistent conclusion was difficult. The open-ended nature of the approach makes the respondents have more control over the information they give which may be challenging to verify. The case study design takes limited participants; hence the finding from this study may not reflect the general roles of educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

3.11 Delimitation of the Study

This study only focused on the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools which are all geared toward improving the quality of teachers and the teaching-learning process for learners with visual impairments.

3.12 Summary

This chapter has provided a critical explanation of the methodology undertaken in this study. It majorly focused on the research approach and design adopted. The design employed proved relevant in this study because the researcher was able to gather the information required to understand the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. The next chapter will focus on the presentation and discussion of the data collected from the respondents.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS OF FINDINGS

4.0 Introduction

The study concerned the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

The data was presented using tables showing responses and their frequencies. The analysis was based on the three research objectives which included:

- Find out the types of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools in Kumi Municipality, Kumi District.
- Examine the relevance of educational technology in teaching reading to learners with visual impairment in inclusive primary school in Kumi Municipality, Kumi District.
- Establish the challenges experienced by teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools in Kumi Municipality, Kumi District.

4.1 Characteristics of the Key Informants

Understanding the information about the respondents who provided this data is vital. It helps in analyzing and making inferences on the information they have given. Headteachers and teachers are key informants in this study since their instructional responsibilities have a legal provision as stipulated in the Education Act (2008) section 58 and 59 and Part B of the teacher scheme of service (2013). Their professional backgrounds are presented in the table below.

Table 2: Characteristics of Key Informants

Name (pseudo names)	Designation	Age bracket	Experience in teaching learners with VI	Number of learners with VI in class
HT1	Headteacher	Above 40	10-15years	30and above
HT2	Headteacher	35-40	5-9	20-29
HT3	Headteacher	30-34	1-4	15-20
T1	Teacher	Above 40	10-15	Above 30
T2	Teacher	35-40	5-9	20-29
T3	Teacher	20-25	1-4	15-20
T4	Teacher	20-25	5-9	20-29
T5	Teacher	20-25	10-15	20-29
T6	Teacher	35-40	1-4	15-20

The table shown above presented the professional background and demographic information on respondents used during data collection. For issues of confidentiality, they preferred having it presented in that format.

4.1 The types of Educational Technology Teachers use in teaching reading to learners with Visual Impairment in Inclusive Primary Schools

Objective one sought to find out the types of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools. The data presentation for objective one is as shown on table 2:

Table 3: Types of Educational Technology teachers use in teaching reading to learners with Visual Impairment in Inclusive Primary Schools

	Frequencies			
Responses	**Head Teachers (interviews)**	**Teachers (interviews)**	**Learners with Visual impairment (FGD)**	**Total**
Use of recorders	1	3	4	**08**
Use of Computers	2	5	5	**12**
"Large print materials"	3	4	8	**15**
"Tactile Charts with bold writings"	1	3	5	**09**
Use of Brailed educational materials	3	4	7	**14**
Use of enlarged flash cards	3	6	6	**15**
"Hand lenses for magnification"	3	5	8	**16**
Colour contrasts	2	3	4	**09**

Table 3 shows data presentation on the types of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools.

4.1.1 Large print materials.

Basing on the data on the table, 15 out of 18 respondents pointed out the use of large print materials as **major** types of educational technology teachers' use in teaching reading to learners with visual impairment. Here are some supporting statements as they came directly from the field:

This was confirmed by one participant who said;

> *In most cases the teachers have to print their own materials in bold letters such that all the learners with visual impairment will be able to see. (HT1 personal communication).*

Another participant also alluded with the above that,

> *The easiest materials to prepare and to use for teaching learners with visual impairments are written charts, which are either factory made or prepared by the teachers. But they only need to be bold enough for the learners to clearly see and understand on their own. (TR 3, personal communication).*

The field notes that were generated from the analysis of printed materials displayed in the classroom environment, conformed to what the earlier participants alluded that large printed materials was one of the technology used for teaching learners with visual impairment. Large printed materials are not only vital for the teaching of learners with visual impairment but also to the learners with normal sight, most especially the ones seated far from the chalkboard.

4.1.2 Use of Brailed Educational Materials

The table indicated that 14 respondents put emphasis on the use of Brailed educational materials for teaching learners with visual impairment.

One participant said that,

> *The most common materials that we normally use here are the brailed educational materials. This is because the government sends these materials to schools and other stakeholders sometimes donate them to us. (HT3 personal communication).*

Another participant also said,

> *Brailed materials were the easiest to use since most teachers have learnt how to use and it is most helpful for the learner that cannot completely see. The brailed machine was also available for teachers to prepare their work. (Tr.2 personal communication).*

The participants in the focused group discussion also confirmed when one participant in the group said that;

> *We normally use brailed materials to help us read and write what the teacher has given us, and the materials are available in plenty as you see us even having some right now. We feel the brail dots by touching and then we recognize the letters or words according to the brail writing style. (FGD, learner 2, personal communication).*

When the field notes were taken from the analysis of Brailed educational materials that were available and others presented by the learners, it was evident that the schools were using such technology for the teaching of learners with visual impairment in schools. Brailed educational materials are vital because they assist learners who alternatively cannot see characters from other technologies.

4.1.3 Use of Enlarged Flash Cards

Basing on the table 2 above, 15 respondents said that teachers use enlarged flash cards as educational technology in teaching reading to learners with visual impairment. This was evident when one participant said,

> *Some learners with visual impairment can partially see, so when using flash cards and number cards we normally make them when they are enlarged such that they can clearly read and comprehend what they have read.(TR 3, personal communication)*

This was also confirmed by another respondent who said that;

> *Whenever we are making flash cards we ensure that, we write in bold and large letters that can help learners with visual impairment to get interest in reading because there are some learners who can slightly see but needed to be helped by making the materials to appear bold and large. (TR2, personal communication)*

During the discussion one participant said that;

> *When the teachers write bold letter on the charts and on chalkboard we are able to see clearly and read. Some of us when we sit far from chalkboard we shall not be able to see but when we sit nearer and closer our sight improves and we shall be able to read what the teacher has written. (FGD, Learner 2, personal communication).*

When materials were analyzed, the size of lettering used was big enough for the visually impaired learners to see clearly. It therefore contributes to peaceful, conducive classroom environment that motivates learners to take part in reading, and paying attention in class. Consequently, although the ideal would be getting the Braille to help in reading of learners with visual impairment enlarged flash cards can play the major role.

4.1.4 Hand lenses for Magnification

The participants in the study confirmed that using lenses for magnifying the words and letters was one of the technology used by teachers for teaching reading to learners with visual impairment. Be it class session or outside reading activities organized by subject teacher or school administration.

According to table 2, 16 respondents mentioned that, Hand lenses are used for magnification of both letters and words. One of the participants said that;

> *and also we have hand lenses that help the children to enlarge words as they carry out reading and checking what they have written. (HT1 personal communication)*

Another respondent also agreed and said;

> *Teachers use magnifying hand lenses because they are readily available and learners can use them freely on their own with minimum guidance from the teacher. (Tr.6 personal communication).*

On the other hand, one respondent disagreed and said that,

> *In our school here, we don't have hand lenses and we don't use them when teaching learners with visual impairment. If they are there then the Headteacher might be keeping them in his office. . (Tr.4 personal communication).*

During a focused group discussion with the learners, it was confirmed that, the teachers use Hand lenses when teaching learners with visual impairment as a very useful instructional material. It has also been found that not all the teachers do use hand lenses all the time; one participant said,

> *We yarn to carry out regular use of hand lenses for reading throughout our lessons but we have not been able to do it because teachers have different commitment. As a learner I feel am missing the regular use of lenses but the problem is that we do not come up together to see what* to do in order to improve the performance in reading (FGD Learner1, personal communication).

This indicates that though lenses were available in school for learners with visual impairment the level at which they are being used is still minimal.

4.1.5 Use of Recorders

The findings revealed that schools did not have adequate recorders in place as one of the educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools. In table 2 above only one head teacher agreed that there was a recorder in the school for teaching learners with visual impairment. This was among the 08 participants where 04 were the learner and 03 being teachers. Apart from one school that had some recorders as confirmed by this participant;

> *The teacher does that by recording the lesson and later on play for the learners such that they can master what they have read or studied. The school has some few recorders that were donated by sight savers international but there is a problem sustaining their usage. (HT1, Personal communications)*

During the interview, one respondent said:

> *The first things that I look at are, what do I need to record which is normally done before the lesson starts during preparation. The scheme of work is where I always which instructional material can use to present that lesson. However the recorders have some implications when using them that is they dry cells that school may not be able to afford all the time (Tr1, Personal communication).*

Recorders are the instruments used to record what is being taught and later on replayed. This requires adequate preparation. It is a basis upon which teacher preparation is grounded. When the personal notes were taken the recorders were only available in one school but the other schools

were using different forms of educational technologies for teaching reading to children with visual impairment in their schools.

4.1.6 Use of Computers

In Table 2, the findings of the study further revealed the Use of Computers as of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools. This impacted on the schools as in the comments where 12 respondents mentioned the use of computers in inclusive primary schools as another type of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools. This was confirmed by one respondent who said;

> *And computers are one of the instructional materials that we use for teaching learners with visual impairment in our school. Some learners can slightly see while others just listen to the sound from the audios being played. (Tr1, Personal communications)*

Another participant also said:

> *I always supervise my staff; when the teacher is teaching, I, first of all, have the lesson plan made by the teacher to see whether the resource they have planned to use cater for both learners including those with visual impairment. I expect the teacher to use instructional materials like computers since we have some of them here in the school, so during the process, we keep on noting down areas that they might have gone wrong and areas that they have done well while they are teaching using computers (HT3, Personal communication).*

Participants in the study also suggested use of computers for teaching reading to learners with visual impairment in inclusive primary schools as a key technology that prepares to meet the requirements of the 21st century for learners with visual impairment. During the FGD one participant said;

> *Sometimes I think parents and teachers think that computers are not very good for learners like us such that the parents don't pay an important visit to the school to go and see how the child is fairing at school because parent would be the ones to motivate us .. They will say your child is like this and this he does this and that but in most cases you find that parents do not bother to go and check on their children at school to see the child's recommendations, instead they leave the children in the hands of the teachers yet they need to encourage us to use computers since we have them here at school. (FDG, Learner 3 Personal communication).*

Basing on the data obtained from the respondents, the Use of Computers as of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools is very important for both learners to move at the current phase.

4.1.7 Color Contrasts

Basing on the data as presented on table 2, respondents said that teachers use color contrasts as a type of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. This was confirmed when one participant said,

> *Our teachers use black markers on white manila papers when teaching us, they also use chalk on chalk board which is clearly seen by learners with visual impairment.(FGD learner 3 personal communication)*

This was agreed by one respondent who said that;

> *My teachers use appropriate colors on materials they use since I purchase them myself (HTR3 personal communication)*

However, one learner disagreed and said;

> *Teachers from our school really use any color contrast on materials since they just teach without instructional materials (FGD learner 3 personal communication)*

4.2 The Relevance of Educational Technology in Teaching reading to learners with Visual Impairment in Inclusive Primary Schools

Objective two sought to examine the relevance of educational technology in teaching reading to learners with visual impairment in inclusive primary schools. The data presentation for objective two is as indicated on table 3:

Table 4:The Relevance of Educational Technology in Teaching Reading to learners with Visual Impairment in Inclusive Primary Schools

	Frequencies			
Responses	**Head Teachers (interviews)**	**Teachers (interview)**	**Learners with VI**	**Total**
Motivates learners to learn with high interest	3	6	8	**17**
Promotes positive attitudes towards learners with VI	2	4	6	**12**
Builds confidence in learners	2	5	5	**12**
Leads to incidental learning	3	6	4	**13**
Promotes sharing among learners	2	5	7	**14**
Makes learning process real	3	5	6	**14**
Increases teacher-pupil interaction	2	4	5	**11**
Builds teacher's confidence	3	4	-	**07**

Table 4 shows data presentation in regard to the relevance of educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

4.2.1 Motivation of Learners to learn with High Interest

Following the data presented in table 3, 17 out of 18 respondents noted that the use of educational technology in teaching reading motivates learners with visual impairment to learn with high interest in inclusive primary schools. One respondent said,

> *The technology excites both learners in the inclusive setting but more so it gives learners with visual impairment to have high interest in learning how to read and to be regular at school since some of the technology is not available in their homes, (T 2Personal communication).*

Another teacher confessed during an interview that the use of educational technology in teaching reading motivates learners with visual impairment to learn with high interest in inclusive primary schools. He said:

> *When I teach using any of the available educational technology and after I assess my learners with visual impairment I have realized that the use of instructional materials motivates my learners to read and participates actively in class. (T1-R3, personal communication).*

The use of educational technology in teaching reading motivates learners with visual impairment to learn with high interest in inclusive primary schools and document teachers had indicates that there was adequate use instructional material in order to plan for intervention that can bring effectiveness in their instruction for reading of learners with visual impairment.

4.2.2 Promotes positive attitudes towards learners with Visual Impairment.

It became clear from the participant's views that the use of educational technology in teaching reading motivates learners with visual impairment to learn and develop positive attitude in inclusive primary schools. It also played a significant role in molding and shaping the students behavior by making them positive in whatever they read. For instance being active in class and monitor children as they come from home and they are seen as unable to read as confirmed by these participants.

> *For instance in the class when recorded material is played the learners with visual impairment gain a positive attitude to read like any other child. (T3, Personal communications)*

Although the participants agreed to the fact that the use of educational technology in teaching reading Promotes positive attitudes in learners with Visual Impairment to learn how to read in inclusive primary schools. Another participant had this to add.

> *What I have observed today you will realize that the teacher, the parent and the learners themselves have that these children are not only for the house hold but they will benefit us is no longer there. You get that children are not reading or doing wrong, in the open when an elder member of the community like takes the initiative of reprimanding it even becomes a problem. They is learners may fail to develop a positive attitude. (T4, Personal communication)*

Also another respondent said;

> *Both stake holders needed to monitors learners with visual impairment who are in school, guide and advice such children so that they develop positive attitudes towards reading (HT3, Personal Communication)*

A similar response was given by a respondent during a focused group discussion that; some teachers and learners fears to associate with us and we have not been interacting well. He said, "when I am reading the teacher or my colleagues do not appreciate when he or she tells me something I will look at that person as being my brother who is advising me to do something good and I will begin to change and be happy" (FGD L1-L3, personal communication).

4.2.3 Builds Confidence in Learners

Basing on table 3, 12 respondents said that educational technology builds confidence in learners during the teaching and learning process of reading, It is clear from the interview that educational technology in teaching reading to learners with visual impairment in inclusive primary schools builds confidence as confirmed by these statements in the interview;

> *Learners with visual impairment when taught by the use of instructional material and being influenced by their peers, teachers listen more to what their peers tell them than what we the and teachers might tell them will be useful when supported by some technology in teaching.(T1, Personal communication)*

Another participant said;

> *The positive effect manifests itself when peers and teachers encourage learners with visual impairment reading, social decision making and values. On the other hand where families' have work together to encourage learners with have inferior relationships, have poor interaction styles and are influenced and become connected to their peers and to their families such learners develop confidence in reading. (HT1, Personal communication, 22nd April, 2019)*

In such a circumstance the learner's peers may take over the role of the family and teachers to help their friends with visual impairment to gain confidence with educational technology used by a teacher in learning how to read.

4.2.4 Leads to Incidental Learning

Incidental learning is attributed to the educational technology in teaching reading to learners with visual impairment in inclusive primary schools. The instructional material is a media through which learners are facilitated to develop the concept about the content being taught. The findings from the study reveal that, educational technology support teachers in improving instructional materials they use in the teaching and learning process.

The educational technology is all about the use of instructional materials during the teaching and learning process to facilitate reading for learners with visual impairment. In an interview, one respondent said;

> *we also ensure that the teachers have instructional materials, we check on that and it is stamped before going to class to ensure that what they are going to deliver is effective (HT1, Personal communication).*

This was supported by another respondent who said;

> *I have designed instructional materials that I use during the lesson, and also those very instructional materials for learners to continue reading on their own once they have been displayed in the classroom to promote incidental learning (Tr1, Personal communication).*

The emphasis for the educational technology is all about the use of instructional materials during the teaching and learning process to facilitate reading for learners with visual impairment. This gives the teachers to use instructional materials to encourage them to develop incident learning and use instructional materials recommended by NCDC in teaching a particular aspect of reading to learners with visual impairments. Use of suitable instructional materials facilitates concept development and makes learning real and interesting. Learners are capable of comprehending lesson content when teachers use learning aids in their lesson.

Additionally, the data reveals that educational technology is all about the use of instructional materials during the teaching and learning process to facilitate reading for learners with visual impairment and enables the teachers identify the challenges learners face when carrying reading by the use different educational technology.

Basing on this data presentation and analysis, motivation of learners to learn with high interest, promotion of sharing among learners with visual impairment, making learning process real and promotion of incidental learning were the main relevance of using educational technology in teaching reading to learners with visual impairment in inclusive primary schools

12 respondents observed that educational technology is relevant in teaching reading because it promotes positive attitudes towards learners with visual impairment, other 12 respondents said that educational technology builds confidence in learners during the teaching and learning process of reading, 13 respondents pointed out that educational technology is important in teaching reading since it leads to incidental learning, 14 respondents stated that educational technology promotes sharing among learners with visual impairment during reading lessons, other 14 respondents said it makes learning process real for learners with visual impairment, 11 respondents noted that educational technology increases teacher-pupil interaction during the teaching and learning of reading. Only 07 respondents mentioned building of teacher's confidence as being one of the relevance of using educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

4.3 The Challenges Experienced by teachers in using Educational Technology to teach reading to learners with Visual Impairment in Inclusive Primary Schools

Objective three sought to establish the challenges experienced by teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools. The data presentation for objective three is as stipulated on table 4:

Table 5: The Challenges experienced by teachers in using Educational Technology to teach reading to learners with Visual Impairment in Inclusive Primary schools

	Frequencies			
Responses	**Head Teachers**	**Teachers**	**Learners with VI**	**Total**
"Inadequate knowledge and skills among teachers"	3	5	7	**15**
High expectations among parents	3	4	6	**13**
Limited time	1	5	8	**14**
"High enrolment in classes"	3	6	9	**18**
Shortage of teaching facilities	2	4	6	**12**
Lack of parental involvement	2	5	5	**12**
Negative attitudes towards learners with VI	3	4	8	**15**
Limited funding to schools	3	6	5	**14**

Table 5 indicates data presentation on the challenges experienced by teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools.

4.3.1 Inadequate Knowledge and Skills among Teachers

Basing on the data presented on table 4, 15 out of 18 respondents mentioned "inadequate knowledge and skills among teachers" as one of the challenges teachers experience in using educational technology to teach reading to learners with visual impairment in inclusive primary schools. Participants in the study attributed the low level of skill attainment for teaching reading to visually impaired learners among the teachers of the inclusive setting to lack of knowledge and skills for handling such learners.

> *Some teachers have never stepped in class to teach reading to visually impaired learners using educational technology, instead they have remained as themselves teaching without using relevant educational technology that can specifically help children with visual impairment to read. This is simply because some teachers do not know what to do in regard to teaching reading to learners with visual impairment. (TR1-TR3, Personal communication)*

In schools, resources refer to materials that are required to facilitate the teaching and learning process. These materials include manila cards, lesson plan books, scheme books, pens, masking tapes, glue, etc. The findings from this study reveal that, teachers do not have enough skills and knowledge to provide such resources that may help learners with visual impairment to effectively learn how to read. From the data, one respondent said,

> *When we find things are lacking, we offer to buy some manilas and papers to prepare reading books but my challenge is handwriting and drawing. (TR2, Personal communication).*

Another respondent said,

> *we have some instructional materials; we could tell them to come for them such as charts, manulas, markers, etc. but most of the teachers do not know how to prepare good materials for teaching reading to learners with visual impairment so sometimes we help them organize their instructional materials and at times we could even buy those that they cannot make them locally (HT2, Personal communication).*

This was confirmed during focused group discussion where one respondent said:

> *Teachers are lacking instructional materials. The manilas are there but sometimes the marker pens are not there. They teach us like any other ordinary children because they fail to prepare specific material for us who cannot see well. Sometimes the teachers are teaching without the instructional materials making us to develop problems in reading. (L1-L3 Personal communication*).

Provision of resources to teachers facilitates their preparation for effective teaching and learning. It enhances teacher capabilities to make adequate instructional materials for their lesson.

4.3.2 High Expectations among Parents

It became evident from the findings of the study that parents seemed to be having high expectation from the school authorities in the using educational technology in teaching reading to learners with visual impairment in inclusive primary schools as confirmed in the findings;

> *But you will realize parents when a child is sent to school they expect that child to learn how to read within a short time, yet materials for teaching reading to learners with visual impairment may be inadequate. (T3, Personal Communication)*

In the same line, one of the administrators further said;

> *But these parents sometimes don't support their children, so as people working directly with the children, we get it a challenge and it is a stumbling block for an easy teaching of reading to children with visual impairment in inclusive schools (T3,Personal communication)*

This was also confirmed by a learner who took part in the focus group discussion

> *Our parents try as much as possible to protect us their children even when they do wrong during reading at home yet they don't have materials for teaching us reading, this makes it hard for the teachers to help such students. (FGD, L.1 Personal communication)*

The lack of co-operation from the parent of the child is one big challenge which the school faces in using education technology for teaching learners with visual impairment. This makes it hard for the teachers to help such learners because some reading materials need to be brought from home since they may not be easily accessible at school. As portrayed in this statement of one of the participants

> *So as people working directly with the children we get it a challenge and it is a stumbling block because parents have high expectations for their children with visual impairment in reading and academic, generally to balance the two becomes now a stumbling block for the teacher, the teacher in a way feels a lot of pressure and disrespected. The parents always are on their necks '' (HT2, Personal communication)*

There is need for the parents to support the teachers in the use of technology in teaching of reading to learners with visual impairments as in this confirmation

> *As parents we need to support the teachers for instance providing reading materials it is good that you go and find out from the teachers in a good way instead of supporting the child its better you ask the teachers what the children need to help the learn how to read. (T2 Personal communication)*

4.3.3 Lack of Parental Involvement

The findings revealed the school did not have adequate structures in place for involving parents in the use of educational technology in teaching learners with visual impairment in the inclusive schools. Apart from the annual program like prefectural inauguration and PTA general meetings held once in a year the school did not possess any structures for involvement as confirmed by this participant;

> *The school does that through PTA meetings which are organized once a year. That is the time parents take part in the decision making process of the school like in the passing of the budget but there is no specific time the parents are invited to come and discuss on the educational technology used for teaching their learners.(T1, Personal communications)*

This was confirmed by another participant who said;

> *Those programs normally come in the normal routine programs like the prefectural inauguration this is a chance where we call on parents to come and represent other parents then we also call other stake holders like parents' representatives, OBs, some community members, from the sub county particularly the security personnel, we also sometimes tried to call the reverend for the moral life, we also called the area counselor. During PTA meetings we have student representatives who attend the meetings but the meeting is not directly towards the use of educational technology for teaching learners with visual impairments (HT2, Personal communication)*

Similarly, schools that carried out more activities to help children learners to read by involving parents understand school goals for children with visual impairment like parenting skills, behavior, and how the home surroundings may have an impact on pupils reading ability.

Generally, "high enrolment in classes", negative attitudes towards learners with visual impairment, "inadequate knowledge and skills among teachers", limited funding to schools, and limited time were the main challenges teachers face in teaching reading to learners with visual impairment in inclusive primary schools.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

In this chapter, the focus is on discussion of findings, conclusions and recommendations based on the set objectives of the study which included:

- The types of educational technology teachers' use in teaching reading to learners with visual impairment in inclusive primary schools.
- The relevance of educational technology in teaching reading to learners with visual impairment in inclusive primary schools.
- The challenges experienced by teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools.

5.2 Discussion of findings on the types of Educational Technology Teachers use in Teaching reading to learners with Visual Impairment in Inclusive Primary Schools

Objective one aimed at finding out the types of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools.

The findings of the study on objective one revealed that the major used educational technology was " large print material" having 15 out of 18 responses with others namely, "hand held lenses for magnification", use of enlarged flash cards, use of and use of Brailed educational materials were the major types of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools.

The use of large print leaning materials being more used in the teaching of reading is supported by head teachers who said that in most cases teachers has to print their own materials in bold

letters such that all the learners with visual impermanent will be able to see. Its true in that to all schools the researcher went to collect data all had large printed walls printed on the walls and they claimed that it's the least expensive. On the use of hand held lenses for magnification, Keefe (2004) similarly notes that the use of stand and hand held magnification with regular text helps to enhance visual functioning of learners with visual impairment. He further observes that a typical learner who would use a stand and portable magnifier is a learner with low vision who has difficulty in reading regular print and requires immediate enlargement of text and/or graphics. This implies that learners with low vision require magnifiers as a form of educational technology to be able to read given texts more clearly hence achieving improved reading ability.

Regarding the use of enlarged flash cards, this is in line with Holbrook, (2000) who also asserts that enlargement of small amounts of text, pictures, diagrams, charts on photocopier would be significant in increasing the reading ability of learners with visual impairment. This means that teachers should use enlarged flash cards in teaching reading to allow clear viewing of letters, words and sentences by learners with visual impairment most especially those with low vision.

Concerning the use of "large print materials, Linden (2009) in a related development asserts that provision of large print version of the text is vital for learners with visual impairment since it enables them to read text materials with less difficulty. She added that large print materials such as textbooks or novels that have been prepared in a large font size of 18 or 24 point would promote reading efficiency of learners with visual impairment. This means that a typical learner who would use large print material is a learner with low vision who has difficulty reading regular print. Therefore, teachers should endeavor to carry out the assessment of learners with visual impairment in order to determine the actual font size of text that suits the needs of individual learners in an inclusive class hence appreciating individual differences among learners.

The use of Brailed educational materials was another type of educational technology revealed by the findings. In support of this assertion, Osterhaus (2003) notes that Provision of paper copies in Braille is important in facilitating the reading abilities of learners who are blind or learners who have limited or no functional vision. Alexander (2003) also pointed out the need to use refreshable Braille as a measure towards promoting the reading competencies of learners with visual impairment. Braille is a tactile reading system for learners who cannot read print. This educational technology is fit for mostly learners who are blind or those with severe low vision that prohibits them from reading text by use of residual vision. It is therefore, through Braille that learners who are blind can read and derive meaning out of the subject matter given during the teaching and learning process of reading among other subject areas taught to learners with visual impairment in inclusive primary schools.

The findings further revealed that teachers use computers as educational technology in teaching reading to learners with visual impairment. In light of this perception, Diana (2004) also observed that magnifying text and/or computer screen is effective strategy in promoting reading skills among learners with visual impairment. This means that the size of the text is changed either by increasing the font size, increasing the zoom or using special screen magnification software. Magnification of the computer screen means that elements such as icons, menus and dialogue boxes are enlarged either by customizing the operating system or by using screen magnification software. A learner who uses magnification is one who requires enlargement of some or all on-screen element. This therefore means that teachers need to be computer literates to cope with the various computer applications to benefit learners with visual impairment during the instructional process.

Closely related to the above is Waldron (2006) who points out the provision of electronic text (E-Text) with no enhancements as a suitable means to facilitate reading of learners with visual impairment. This is generally any text based information that is available in a digital format and read by electronic means. A typical learner who uses E-Text requires access to curricular and recreational reading materials in electronic format.

The results also showed that the use of color contrasts is an important educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools. Dickinson, (2008) similarly observed that change of appearance of Text and/or Background is another educational technology used by teachers in teaching reading to learners with visual impairment. This implies that changing the font size and color of the text and/or background is crucial in supporting learners with visual impairment to cope with reading. A learner who would benefit from changing the appearance is one who requires higher contrast, different font, large print and spacing. Furthermore, Mason (1997), reveals that some learners with visual impairment may require change of background colors to increase their reading abilities. This may involve color alternatives for example use of black, blue and white charts and maps depending on individual learner's needs.

The study findings further revealed "Tactile Charts with bold writings" as being vital in teaching reading to learners with visual impairment. The researcher is in total agreement with this finding since learners with visual impairment depend largely on the sense of touch for learning. However, those with low vision may require large and bold writings as observed by Linden (2009) who puts emphasis on the use of large print materials in teaching reading to learners with visual impairment.

Use of recorders was another result on the type of educational technology used by teachers in teaching reading to learners with visual impairment in inclusive primary schools. In conformity with this observation, Brooklen (2000) also noted that educational technology for teaching reading to learners with visual impairment involve the use of auditory strategies which include using live readers and auditory books or books on tape, CDs and MP3 players. This strategy best suits learners with visual impairment who suffer from visual fatigue and those with blindness. The researcher similarly encourages teachers to use recorders or audio visual devices that can be played back to reflect on the instructional process hence giving chance to learners with visual impairment to share experiences during the revision of reading.

5.3 Discussion of findings on the relevance of Educational Technology in Teaching Reading to Learners with Visual Impairment in Inclusive Primary Schools

Objective two aimed at examining the relevance of educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

The results on objective two revealed that motivation of learners to learn with high interest, promotion of sharing among learners with visual impairment, making learning process real and promotion of incidental learning were the main relevance of using educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

On motivation of learners to learn with high interest, Martta (2004) also urges that improvement in the level of commitment to both the teachers and learners with visual impairment is realised as a result of using educational technology in the teaching of reading in inclusive classes. This is because educational technology transforms the learning experiences as it encourages creativity during the instructional process. Teachers therefore, should be creative enough in designing

appropriate educational technology to promote maximum participation in reading among learners with visual impairment in inclusive schools.

Promotion of sharing among learners was another finding in relation to the relevance of educational technology in teaching reading to learners with visual impairment. In conformity with this observation, Coley (2007) affirms that educational technology provides learners with visual impairment the opportunity to increase the interaction with their classmates and teachers hence encouraging collaboration in the process of teaching and learning of reading in inclusive primary schools. This means that through the use of educational technology, learners and teachers are encouraged to work together as they share knowledge and skills during the instructional process in inclusive primary schools. This leads to supporting of each other in the learning process of reading.

In regard to making learning process real, Hartens (2006) conquers with this opinion citing integration of educational technology into the classrooms as an effective way to connect learners with visual impairment to all opportunities around them as they explore the different learning styles which makes learning a reality. This approach to teaching reading to learners with visual impairment promotes concrete learning geared towards improved performance in reading in inclusive schools.

The findings further revealed that promotion of incidental learning was another relevance of using educational technology in teaching reading to learners with visual impairment. This conforms to Schank (2001) who asserts that many exciting applications of educational technology in schools indicate that new technology based models of teaching and learning have the potential to improve educational outcomes. This has led to increased demand on instructional

technology to facilitate standard educational practices which include promotion of incidental learning in reading. Teachers therefore, are compelled today to employ appropriate methods of teaching based on modern approach which calls for use of education technology to increase reading abilities of learners with visual impairment in inclusive schools.

The findings also revealed that educational technology promotes positive attitudes towards learners with visual impairment. This is in line with Mwane (2000) who urges that the use of educational technology in teaching learners with visual impairment results into change of attitude by teachers, peers, parents and other stakeholders towards learners with disabilities. This implies that creation of awareness to public on the potentials of learners with visual impairment is achieved as they demonstrate their abilities in reading using educational technology.

The results also revealed that educational technology builds confidence in learners with visual impairment. The researcher is in agreement with this development since these learners are supported to learn effectively which makes them gain confidence during the teaching and learning process of reading.

The results of the study further showed that using educational technology increases teacher-pupil interaction. In line with this development, Coley (2007) observed that educational technology provides learners with visual impairment the opportunity to increase the interaction with their classmates and teachers hence encouraging collaboration in the process of teaching and learning of reading in inclusive primary schools. This implies that teachers should always create a conducive learning environment using educational technology in the process of teaching reading to learners with visual impairment.

5.4 Discussion of findings on the Challenges experienced by teachers in using Educational Technology to teach reading to learners with Visual Impairment in Inclusive Primary Schools

Objective three focused on the establishment of the challenges experienced by teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools. The findings revealed that "high enrolment in classes", negative attitudes towards learners with visual impairment, "inadequate knowledge and skills among teachers", limited funding to schools, and limited time were the major challenges experienced by teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools.

Concerning high enrolment in classes, Hasley (2003) also affirms that teacher –student ratio is a challenge too in using educational technology in teaching learners with visual impairment. He added that teachers find it difficult to prepare adequate educational materials based on technology to cater for individual learners despite the increase in their enrolment in inclusive classes. This therefore, leaves many of these learners unreached by teachers during the teaching and learning process of reading. It is therefore vital for relevant authorities to check on teacher-pupil ratio in order to enable teachers teach manageable number of learners with visual impairment hence meeting their needs more effectively.

About negative attitudes towards learners with visual impairment as a challenge, this is a typical barrier to teaching and learning of reading as teachers, parents and peers tend to think that learners with visual impairment are less capable in academics which make them hinder their process in learning reading. As a result, these learners feel isolated and therefore, demotivated and withdrawn from the instructional process.

Regarding inadequate knowledge and skills in using educational technology, Coley (2007) similarly stated that technology based innovations offer special challenges in this scaling-up process. This was similarly confirmed by Aldajani (2016) that,maximum learning outcome expected of the children with visual impairment in an inclusive educational setting can be achieved if the classroom teacher should observe the use of assistive technology devices necessary for classroom teaching/learning processes. Systemic reform is not possible without utilizing the full power of high performance computing and communications to enhance the reshaping of schools yet the cost of technology, its rapid evolution, and the special knowledge and skills required of its users pose substantial barriers to effective utilization. In a related development, McKinsey (2005) observed that limited knowledge and skills in using educational technology has been noted on several counts as a challenge to many teachers at different levels. This means that schools should establish substantial and extended professional development in the innovative models of teaching as a tool for fostering educational technology.

The results further revealed that limited time was a potential challenge in using educational technology to teach reading to learners with visual impairment. In a similar perspective, Engel (

2000), also asserts that time constraints hinder the use of educational technology in the teaching of reading to learners with visual impairment. He further noted that it requires a teacher to spend a lot of time planning and coming up with appropriate technology which suits individual learner's needs in an inclusive class alongside other responsibilities assigned to him/her by the school hence a challenge affecting teachers in using educational technology to teach reading to learners with visual impairment in inclusive primary schools.

On high expectations among parents, Hunter (2006) similarly pointed out that high expectations from parents and other stakeholders also pose great challenge to teachers when using educational

technology in teaching reading to learners with visual impairment. He further noted that many people assume that high performance is automatic with application of technology. This prompts stakeholders most especially parents to set unrealistic demands on teachers and learners with visual impairment hence working under pressure.

The results further indicated that limited funding to schools affects the use of educational technology in teaching reading to learners with visual impairment. This makes it difficult to purchase essential equipments such as computers and other assistive devices for learners with visual impairment to use in reading. In support of this view, Schank(2001) noted that inaccessibility to computers is a challenge in implementing the use of educational technology in the teaching of reading to learners with visual impairment. This implies that schools without computers lack funds to buy them and are limited in using educational technology in the teaching and learning process of reading.

5.5 Conclusions

The conclusions were based on the three objectives of the study as stated:

The findings revealed that the use of ‘Large print materials’ was the major educational technology, others were hand held lenses for magnification, use of enlarged flash cards, use of Brailed educational materials were other types of educational technology teachers use in teaching reading to learners with visual impairment in inclusive primary schools.

The findings also showed that motivation of learners to learn with high interest, promotion of sharing among learners with visual impairment, making learning process real and promotion of incidental learning were the main relevance of using educational technology in teaching reading to learners with visual impairment in inclusive primary schools.

The findings further indicated that “high enrolment in classes”, negative attitudes towards learners with visual impairment, “inadequate knowledge and skills among teachers”, limited funding to schools, and limited time were the main challenges teachers face in teaching reading to learners with visual impairment in inclusive primary schools.

5.6 Recommendations

The recommendations of this study were based on the areas of gap and these included the following:

- The government should improve on teacher-pupil ratio to reduce on high enrolment in classes in order to have quality teaching of reading to learners with visual impairment in inclusive primary schools.
- Sensitization of all the stakeholders in the education of learners with visual impairment should be observed by the relevant authorities in order to change attitude towards learners with visual impairment in inclusive primary schools.
- Government should increase on funding to inclusive primary schools to enable them meet adequately the needs of learners with visual impairment.
- Government should develop a program to train teachers in making, designing and using educational technology for teaching reading to learners with visual impairment in inclusive primary schools. This is because the teachers have inadequate knowledge and skills on making, designing and using appropriate educational technology for teaching reading to learners with visual impairment in inclusive primary schools.
- Government should construct more standard teaching facilities that suit the needs of learners with visual impairment in inclusive primary schools. This is because the ones in place are inadequate and are not in good standard to these learners with visual impairment.

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APPENDICES

APPENDIX A: MAP SHOWING THE LOCATION OF KUMI MUNICIPALITY

APPENDIX B: SEMI – STRUCTURED INTERVIEW GUIDE FOR HEADTEACHERS

A. BACKGROUND INFORMATION

Tick the right box e.g ☐ ✓

1. Age

a) Above 40 year ☐

b) 35-40years ☐

c) 30-34 years ☐

2. Experience in teaching learners with special needs

a) 10-15 years ☐

b) 5-9 years ☐

c) 1-4 years ☐

3. Numbers of learners with visual impairment in the school

a) 30and above ☐

b) 20-29 ☐

c) 15-20 ☐

B. Types of educational technology teachers use

4. What type of educational technology do teachers use to teach reading to learners with visual impairment?

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5. Which are the commonly used educational technologies in the teaching of reading to learners with visual impairment in your school?

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6. How do teachers use the mentioned types of educational technologies in your school?

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7. What is your view on using the mentioned types of educational technology to teach reading to learners with visual impairment in your school?

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C. Relevance of educational technology in teaching reading

8. In which ways has educational technology benefited teachers in the teaching of reading to learners with visual impairment in your school?

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9. How has the use of educational technology benefited learners with visual impairment in reading in your school?

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D. Challenges faced by teachers when using educational technology

10. What challenges do teachers face when using educational technology to teach reading to learners with visual impairment?

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…….

11. Do you have more information on the use of educational technology in the teaching of reading to learners with visual impairment? if yes, give details.

……

……

Thank you for your responses.

APPENDIX B: SEMI – STRUCTURED INTERVIEW GUIDE FOR TEACHERS

A. BACKGROUND INFORMATION

Tick the right box for example; ☐ ✓

1. Age a) 35-40 years ☐

   b) 20-25 years ☐

   c) 40 and above ☐

2. Experience in teaching learners with special needs

   a) 10-15 years ☐

   b) 5-9 years ☐

   c) 1-4 years ☐

3. Numbers of learners with visual impairment in the school

   a)20 and above ☐

   b) 10-19 years ☐

   c) 5-10years ☐

B. Types of educational technology teachers use

4. What type of educational technology do you use to teach reading to learners with visual impairment in your class?

.....

.....

5. Which are the commonly used educational technologies in the teaching of reading to learners with visual impairment in your class?

……

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…….

6. How do you use the mentioned types of educational technologies in your class?

……

……

…….

7. What is your view on using the mentioned types of educational technology to teach reading to learners with visual impairment in your class?

……

C. Relevance of educational technology in teaching reading

8. In which ways has educational technology benefited you in the teaching of reading to learners with visual impairment?

……

……

……..

9. How has the use of educational technology benefited learners with visual impairment in reading in your class?

……

……

……

D. Challenges faced by teachers when using educational technology

10. What challenges do you face when using educational technology to teach reading to learners with visual impairment in your class?

……

……

……..

11. Do you have more information on the use of Educational Technology in the teaching of reading to learners with visual impairment in your class? If yes, give details.

……

……

…….

Thank you for your responses

APPENDIX C: SEMI – STRUCTURED INTERVIE GUIDE FOR LEARNERS WITH VISUAL IMPAIRMENT

A. BACKGROUND INFORMATION

Tick the right box

1. Age a) 35-40 years ☐

   b) 20-25 years ☐

   c) 15-19 years ☐

2. Experience in teaching learners with special needs

   a) 10-15 years ☐

   b) 5-9 years ☐

   c) 1-4 years ☐

3. Numbers of learners with visual impairment in the school

   a) 15-20 ☐

   b) 10-15 ☐

   c) 5-10 ☐

B. Types of educational technology teachers use

4. What type of educational technology do teachers use to teach you reading in your class?

.....

.....

5. Which are the commonly used educational technologies in the teaching of reading to you?

……

……

……

6. How do teachers use the mentioned types of educational technologies to teach you reading in your class?

……

……

C. Relevance of educational technology in teaching reading

7. In which ways has educational technology benefited you in reading?

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……

……

D. Challenges faced by teachers when using educational technology

8. What challenges do you face when using educational technology in reading?

……

……

……..

9. Do you have more information on the use of educational technology? if yes, give details

……

……

Thank you for your responses.

APPENDIX D: INTRODUCTORY LETTER FROM KYAMBOGO

KYAMBOGO UNIVERSITY

P. O. BOX 1, KAMPALA
FACULTY OF SPECIAL NEEDS & REHABILITATION
Tel: 0414-286237/285001/2 Fax: 0414-220464
DEPARTMENT OF SPECIAL NEEDS STUDIES

15th January, 2019

The DEO/DIS/Head teacher/Teacher/Community/Opinion Leader/Church Leader

THE MEO

PRINCIPAL EDUCATION OFFICER 09 APR 2019 Kumi Municipal Council

Permission is hereby granted
Please accord her the necessary support

9/4/2019

Dear Sir/Madam,

RE: INTRODUCTION OF RESEARCH STUDENT ON DATA COLLECTION

This is to introduce the bearer Rev/Dr/Sr/Mr/Mrs/Ms. ADEKE ANGELLA ROSE
Reg.No: 17/U/14277/GMSN/PE who is a bonafide student of Kyambogo University in the Faculty of Special Needs and Rehabilitation, Department of Special Needs Studies. As partial fulfillment of the requirement for the award of the Master in Special Needs Education (MSNE), he/she is required to undertake a research on the approved area of study.

The purpose of this letter is to request you to allow him/her have access to information from your office, school or area of operation necessary for the study.

Kyambogo University will be grateful for any assistance rendered to the student.

Yours faithfully,

20 FEB 2019

for Dr. Okwaput Stackus
HEAD OF DEPARTMENT

OS/aj

A SELF FORMULATED INTRODUCTORY LETTER BY THE RESEARCHER TO THE RESPONDENTS

Dear respondent,

RE: Request to have an audience with you on data collection

I am Adeke Angella Rose, a student of Kyambogo University pursuing Master of Special Needs Education. Research is one of the requirements for the award of this Masters. This semi – structured interview guide is designed for use in the study entitled; The role of Educational Technology in teaching reading to learners with visual impairment in inclusive primary schools in Kumi Municipality. You have been identified as one of the respondents to participate in this study. Your responses will be kept confidential and used only for purposes of the study. I therefore, request you to answer the questions provided

Thank you,

Yours Sincerely

AdekeAngella Rose

REG. NO. 17/U14277/GMSN/PE

ETHICAL CONSENT FORM FOR TEACHERS/HEAD TEACHER

Research Topic: **The role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools, Kumi municipality, Kumi district.**

I have been informed of the requirements of the study and fully understand what will be expected of me as a participant. It is my understanding that:

- This study focuses on **the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools.**
- The purpose of the study is to examine the role of educational technology in teaching reading to learners with visual impairment in inclusive primary schools.
- My identity as a research participant will remain confidential and my name and my responsibility/role in the school and the name of the school will not be use at any point in the research or in reporting the findings.
- I maintain the right to withdraw from the study at any point in time.
- My voice can be recorded during my interview.
- I hold the right to refuse to answer any question.
- I will receive the summary of the final report of the study.
- Findings of this study may be used in conference presentations and in academic publications

I express willingness to participate in this study by signing this form.

Name: ……Designation: ……

Signature: …… Date: ……

Name of school: ……

Researcher's Name: Adeke Angella Rose

Researcher's Contact: P.O. Box 963, Mbale.

Name of Institution: Kyambogo University

Thank you.

ASSENT FORM FOR LEARNERS

I have been given full information on the aim, the purpose and my participation in the study by the researcher from Kyambogo University, Department of Special Needs Education- Uganda. I therefore agree to be amongst the participants in this study with the following conditions.

Put a tick (✓) as appropriate against each statement;

- ☐ The purpose of the study is to examine the role of educational technology in teaching reading to learners with visual impairment.
- ☐ I will not be judged of any answer that I give.
- ☐ My identity will not be disclosed in the research findings.
- ☐ I will participate in a focus group discussion
- ☐ I have been briefed verbally and in writing about the purpose and duration of the study.
- ☐ My parent/guardian has given consent on my behalf

By my signature I agree to be a participant in this study.

Name: _____

Name of institution: _____

Signature of participant:_____

Date:_____