ACCESS TO CAREER GUIDANCE THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY BY LEARNERS WITH VISUAL IMPAIRMENTS IN SELECTED SECONDARY SCHOOLS OF ZAMBIA

BY

CHITALU THOMAS CHIPILI

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DECLARATION

I, Chitalu Thomas Chipili, declare that this dissertation represents my own work and that it has not previously been submitted by any other person for a degree at the University of Zambia or any other University and it does not incorporate any published work or material from another dissertation.

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CERTIFICATE OF APPROVAL

This dissertation of **CHITALU THOMAS CHIPILI** has been approved as a partial fulfillment of the requirements for the award of the Degree of Master of Education in Guidance and Counselling of the University of Zambia.

Examiner 1

Name: ……

Signature: ……..Date: ……

Examiner 2

Name: ……

Signature: …….. Date: ……

Examiner 3:

Name:…….

Signature: ……... Date: …….

ABSTRACT

The tenacity of the study was to establish why learners with visual impairments in selected secondary schools of Zambia were more braille inclined in Accessing Career Guidance than through Information and Communication Technology (ICT). Objectives that guided the study were to; establish why learners with visual impairments were more braille inclined in Accessing Career Guidance than through ICT. Explore how accessible career guidance through ICT was among learners with visual impairments. Examine factors that might have influenced access to career guidance through ICT among learners with visual impairments. UTAUT theory guided this study. A descriptive case study design was used in analysing, presenting and discussing the findings. The population was all pupils with visual impairments and their teachers in selected schools, while the sample size was fifty-two (52) segmented as fourty (40) pupils, four (4) head teachers, four (4) career guidance teachers and four (4) grade teachers. Purposive sampling was used to select the participants of the study. Interviews and focused Group discussions were the methods of data collection. The study revealed that due to inadequate or non-availability of ICT facilities, learners with visual impairments did not have access to career information through ICT. There was also inadequate ICT trained teachers, facilities and ICT unclear policy which contributed to learners being more braille inclined than ICT. Instead, learners accessed career information through braille and word of mouth only. For these reasons learners with visual impairments did not often participate in ICT related learning activities and examinations consequently, restricted in their career choices. The study therefore, recommended that the Ministry of General Education through schools should supply ICT facilities, train teachers in ICT, formulate a clear policy on ICT for learners with visual impairments and Examination Council of Zambia (ECZ) should introduce practicals in ICT examination for the visually impaired learners.

DEDICATION

This dissertation is dedicated to my beloved mother Mrs. Theresa Mpundu Swali Chipili, for her unfailing love and care from the time I was born, involved in fire catastrophe and during the process of losing sight. She has been with me in all situations; words cannot express how much I owe her. It is my sincere prayer that God prolongs her life so that she may enjoy from the sweats of her labour.

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ACRONYMS

ABFR:	Abby Fine Reader
ADL:	Daily Living Activities
AFB:	American Federation for the Blind
AFB:	American Foundation for the Blind
CRPD:	Convention on the Rights of Persons with Disabilities
DBIZ:	Defeating Blindness in Zambia
ECZ:	Examination Council of Zambia
GUI:	Graphical User Interface
HOD:	Head of Department
ICT:	Information and Communication Technology
JAWS:	Job Access with speech
MOE:	Ministry Of Education
MOESVTEE:	Ministry of Education, Science, Vocational Training, and Early Education
NVDA:	Nonvisual Desktop Access
OB:	Open Book
PCR:	Pearl Camera Reader
PDA:	Persons with Disability Act
SACHEs:	Southern Africa corporative History in Education
TSR:	Thunder Screen Reader
UNESCO:	United Nations Education Science and Cultural Organisation.
UTAUT:	Unified Theory of Acceptance and Use of Technology

CHAPTER ONE: INTRODUCTION

1.1. Overview

This chapter contains the background to the study, statement of the problem, purpose of the study, research objectives and research questions. It further presents the significance of the study, theoretical framework, definition of terms and ends with a summary.

1.2. Background to the study

The quest to understand why learners with visual impairments in selected secondary schools of Zambia were more braille inclined in Accessing Career Guidance than through Information and Communication Technology (ICT) motivated this study.

ICT is a set of activities that are facilitated by electronic means the processing, transmission and display of information (Selwyn, 2011). It has become a powerful tool in promoting access to information at world, national and individual levels by providing people with an unprecedented opportunity to meet vital life goals especially in academic circles, social life, health matters and occupation. Selwyn (2011) delineates that the broadness of ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form, for instance, personal computers, mobile phones, digital television, internet and robots. Furthermore, today's society shows the ever-growing computer-centric lifestyle, which includes the rapid influx of computers in modern education. Selwyn, Potter, & Cranmer (2008) acclaim that ICT contributes to access to career guidance, universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration. This is why United Nations Education Science and Cultural Organisation (UNESCO) takes a holistic and comprehensive approach to promoting ICT in education. In seeking to address these challenges to some extent the UNESCO's Inter-sectorial Platform for ICT in education focuses on these issues through the joint work of three of its sectors: Communication & Information, Education and Science (Asogwo, 2008). However, access to ICT, inclusion in the education system and quality academics among persons with visual impairments are among the main challenges that still remain to be addressed (American Foundation for the Blind (AFB), 2012.

In modern society ICT is ever-present, with over three billion people having access to the Internet. With approximately eight (8) out of ten (10) internet users owning a smartphone. This rapid growth has led ICT to become a keystone of everyday life, in which life without some facet of ICT renders most of academic, clerical, work and routine tasks dysfunctional. According to Selwyn (2014), from the study conducted in developing and developed countries, shows that Internet use continues to grow steadily, at 6.6% globally in 2014 (3.3% in developed countries, 8.7% in the developing world). It further reveals that the number of internet users in developing countries has doubled in five years (2009-2014), with two thirds of all people online now living in the developing world. Moreover, the internet is the highly pronounced part of ICT and has the largest library the world has ever seen. Therefore, ICT with education, health, economic, career guidance and life as a whole cannot be separated from human life and it remains successful. In this vein, Measuring the Information Society (2015) reported that *from 2000 to 2015, the gap between learners not accessing and those Accessing Career Guidance through Internet and mobile coverage has decreased substantially.* Additionally, Watts & Dent (2008) also affirms that in the relatively time that ICT has been available for career guidance and counselling, it has proven to be of considerable help to everyday activities and will probably continue to grow and become even more intertwined with career guidance and counselling services. Therefore, it is the responsibility of researchers and practitioners alike to find meaningful ways of using ICT without compromising on quality standards and ethics.

Despite the substantial progress made in Accessing Career Guidance information through ICT among the sighted learners worldwide, Zambia inclusive, it was not yet known why learners with visual impairments remained more braille inclined in Accessing Career Guidance information than through ICT. The existence of the knowledge gap was supported by a study done by Mtonga & Musonda (2015) which found that in Zambia, 95 % of learners with visual impairments depended on braille for their education. The remaining 5 % of learners were mostly learners with albinism who use some large print in some schools. Thus, the challenges learners with visual impairments faced in Accessing Career Guidance through ICT in Zambia were not known. Yet Sahfi, Zhou, Smith & Kelley (2009) explicate that it is evident that learners with visual impairments are capable of accessing any kind of information and benefiting from ICT

without any arduous at all, as long as the required support, such as assistive technology, special software (screen readers) and hardware (computers) are availed to them.

Thus, it suffices to point that ICT was also needed by learners with visual impairments, for it has an ability to transform their lives by dealing with primary issues facing individuals with visual impairments in information accessibility, mobility and meaningful life experiences (AFB 2012). For example, reading hard copies of career guidance information is impossible for learners and other persons with blindness. However, if internet is made accessible to them, they can access and read soft copies of job requirements on the labour market. Additionally, if learners with visual impairments are allowed access to ICT they would exchange information with their sighted peers, learning institutions, guidance and counselling institutions and officers, and not forget relatives, by using the electronic mail, messenger, call conference or video conference, Facebook, WhatsApp, E-books. Making access of ICT to learners with visual impairments would further create rapport with their educators. These are a few examples of how ICT can create a great impact in the lives of learners with visual impairments. Unfortunately, most students with visual impairments in Zambian special and inclusive schools seemed to have difficulties in accessing ICT their by became braille inclined in accessing career information than through ICT. If this situation was left unchecked, it would have resulted in low productivity in most parts of their life, limited career choice and promote dependence syndrome. Hence, the reason for conducting this research so as to come up with reasons for learners with visual impairments being more braille inclined in accessing career information than through ICT.

Despite Zambian government through the Ministry of Education, Science, Vocational Training and Early Education (MOESVTEE), introducing ICT in 2013 in all Zambian schools, (MOESVTEE, 2013), learners with visual impairments still remained more braille inclined in Accessing Career Guidance information than through ICT. Therefore, there was a need to investigate why learners with visual impairments were more braille inclined in Accessing Career Guidance than through ICT in selected secondary schools of Zambia.

1.3. Statement of the Problem

Studies have shown that ICT facilitates smooth and quick access to career guidance services (Watts & Dent, 2008) and (Iacob 2012). Despite ICT being able to promote swift access to career guidance among learners, learners with visual impairments in Zambia's learning institutions still remained more braille inclined in Accessing Career Guidance information than through ICT (Mtonga & Musonda 2015). It was not known why learners with visual impairments were more braille inclined in Accessing Career Guidance than through ICT in Zambia. This study sought to identify why learners with visual impairments were more braille inclined in accessing career guidance information than through ICT in selected secondary schools of Zambia.

1.4. Purpose of the Study

The aim of this study was to establish reasons learners with visual impairments remained more braille inclined in Accessing Career Guidance than through ICT in selected secondary schools of Zambia.

1.5. Study Objectives

The study objectives where:

1. To establish reasons why pupils with visual impairments were more braille inclined in Accessing Career Guidance than through ICT in selected secondary schools of Zambia.
2. To explore how accessible career guidance information through ICT was to pupils with visual impairments in selected secondary schools of Zambia.
3. To examine factors that might have influenced access to career guidance through ICT among pupils with visual impairments.

1.6. Research Questions

Emanating from the aforementioned objectives, the research questions included the following:

1. Why were pupils with visual impairments more braille inclined in Accessing Career Guidance information than through ICT in selected secondary schools of Zambia?
2. How accessible was career guidance information through ICT to pupils with visual impairments in selected secondary schools of Zambia?

3. What factors might have influenced access to career guidance information through ICT among pupils with visual impairments?

1.7. Significance of the Study

At a time when there is a paradigm shift from accessing, dispensing and storing of information through hand tools to electronic means in Zambia, a study that helps to understand why persons with visual impairments remain receiving, dispensing and recording of information through manual devices and braille was important. In addition, findings from this study may enlighten policy makers in education, administrators in special and inclusive institutions and learners with visual impairments on how accessible career guidance information through ICT is in Zambian selected secondary schools.

Above all, the whole of this study may add knowledge to this field. This is so because it has created the basis of more research for other researchers.

1.8. Theoretical Framework

This study was guided by the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh, Morris, Davis & Davis (2003). The theory suggests that four constructs are the main determinants of intention to use an information technology. The four constructs are performance expectancy, effort expectancy, social influence and facilitating conditions. These four concepts can be described as follows:

Performance expectancy is the degree to which the user expects that using the ICT will help him/her attains gains in job performance. It has five origin ideas namely: perceived usefulness, perceived ease of use, subjective norm, outcome expectations and extrinsic motivation. *Extrinsic motivation is the perception that users want to perform an activity using ICT because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself, such as improved job performance, pay, or promotions.* perceived usefulness, perceived ease of use, subjective norm, outcome expectations are examples of intrinsic motivation (Davis & Warshaw 1992). Effort expectancy refers to the degree of ease associated with the use of ICT while social influence covers the degree to which an individual perceives that important others believe he/she should use the new system (ICT) and Facilitating conditions as the degree to

which an individual believes that an organisational and technical infrastructure exists to support use of ICT. This theory also postulates that the influence of facilitating conditions on usage is moderated by age and experience of the individual (Venkatesh et al. 2003).

Basing on this theory, the aforementioned constructs influence the usage of ICT at societal, organisational and individual levels. It is assumed that, the pointed constructs are clearly applicable in access to career guidance through ICT. Therefore, it was worth using it for it smoothly contributed in understanding as to why learners with visual impairments remained more braille inclined in accessing career guidance information than through ICT.

1.9. Definitions of Terms

In line with this study, terms used in this study have been described and specified below:

Assistive technology: a device that enables functional independence in different areas of life for individuals with impairments.

Blindness: Total loss of sight or inability to see.

Braille: an alternative form of reading and writing used by individuals with visual impairments. It has raised dots on a piece of paper called braille paper and fingers are used to feel the dots in order to interpret the characters.

Career Guidance: the specific information aiming at making an individual aware about the specific job requirements and available jobs on the labour market.

Communication: exchange of information through different media.

Computer: is an electronic device, which is used to execute instructions.

Inclusive Education: the kind of education where learners with and without a disability are taught in one class.

ICT: a set of technological tools and resources used to communicate, create, disseminate, store, and manage information. Such tools include, but not limited to: computers, Internet and phones.

Information: distributable or communicable knowledge.

JAWS: A type of screen reader used for smooth operation of the computer by persons with visual impairments

Special schools: the schools exclusive made for learners with disabilities.

Technology: a means of disseminating information electronically

Visual impairments: Vision loss, either partial or total.

1.10. Summary

This chapter gave insight into the topic under research. The problem under investigation has been stated while the objectives and significance of the study are clearly specified. Research questions and definition of terms are all outlined. The study's guiding theory UTAUT is explicated as well. The theory shows why people are influenced to use ICT to access information for their essential life activities. In relation to this study the theory helped understand reasons for learners with visual impairments remained more braille inclined in accessing information on career guidance than ICT. In addition, the theory helped to understand how accessible was career guidance information through ICT to learners with visual impairments in the selected secondary schools. The next chapter is looking at literature review.

CHAPTER TWO: LITERATURE REVIEW

2.1. Overview

This chapter explores relevant literature on career guidance among learners with visual impairments. Research findings and conclusions made by other researchers on the similar topics are presented in line with the following themes: reasons pupils with visual impairment were more braille inclined in accessing career guidance information than through ICT, access to career guidance through ICT and factors that might have influenced access to career guidance through ICT

Historically accessing guidance and counselling services in the case of learners with visual impairments in Zambia have suffered from lack of innovation and purpose built tools. If this area was compared with non-disabled learners, it was clear to see a marked difference in successes achieved through ICT. The advent of ICT has opened the possibility to create and implement numerous new ways of providing career guidance to every client. However, it is not the case in the Zambian context to learners with visual impairments. Therefore, exploring trends in Accessing Career Guidance information through the use of ICT in particular, identifying reasons why blind learners remained more braille inclined than ICT in accessing career information, Suggesting and encouraging a meaningful integration of ICT in career guidance for the benefit of learners with visual impairments was the focus of this research.

2.2 Reasons Pupils with Visual Impairment were more Braille Inclined

In order to present reasons learners with visual impairments remained more braille inclined in accessing career guidance information clearly, reasons have been apportioned in subthemes as: benefits of using braille, existence of resources to support use of ICT, student related reasons, attitude of teachers towards learners with visual impairments' use of ICT and policy on ICT. To start with, below are benefits of using braille:

2.2.1. Benefits of Using Braille

As much as it has been argued that Braille is becoming a less relevant tool and ICT is taking over for blind individual to progress successfully, a survey conducted at Louisiana Tech University by Miller & Rash (2001) found that Braille allows users to learn spelling, punctuation, and gain an understanding of how text is formatted on the page. They further, argue that audio books and voice synthesisers have provided an excellent additional resource for reading comprehension, however, listening is not synonymous with reading and studies show that students who can read Braille tend to acquire higher literacy rates on average.

In addition, the longitudinal study by Mangold (2000), in the USA, on organisations representing blind people, i.e. the national federation of the blind, royal national institute for the blind and American foundation for the blind. The results show that braille gives the palpable experience that is involved in reading and using Braille has endured for almost 200 years and could never be replaced by any kind of assistive technology. However, on the contrary, Braille is being incorporated into modern technological developments. The study further points out that rather than making braille obsolete, today's technology makes Braille even more accessible and portable to its users in the form of Braille Note takers, transcription software, and refreshable Braille displays for computers.

Ross, Scheira & Urick (1999) carried the correlation study on U.K grade 1-2 on benefits of braille and ink print to the blind readers. The study revealed that when blind and partially sighted students use Braille, they can participate in reading lessons with their sighted classmates. They can use the same reading materials as their peers, only in a Braille format. The same study argues that because there is a letter-to-letter correspondence between uncontracted Braille and print, it is easier for sighted peers, parents, siblings, and teachers to learn to read uncontracted letters. Everyone in a Braille reader’s life can be a participant in his literacy.

Wormsley, & D'Andrea, (1997), using the action research, the study advocates that the ability to read and write in Braille opens the door to literacy, intellectual freedom, equal opportunity, and personal security. The study also emphasises that braille is an extremely important gateway to opportunity for the UK's blind or partially sighted people, enabling them to be more independent.

Research taken by Partridge (1978), using the survey research design shows that braille literacy directly correlates with academic achievement and employment. In accordance with the same research, in 1978, of the 26 percent of blind people who are employed, the majority of them were braille readers. On this basis, the study claims that the correlation is clear - braille is an extremely important tool for blind people to become literate, and it is a critical component that supports educational advancement and increases employment prospects.

Looking closely at the consulted materials above, it is explicit to tell that blind learners could be braille inclined and succeed only when there is an adequate and consistent supply of braille instructional materials. Moreover, it has been mentioned that braille currently is being in cooperated into ICT. Therefore, depending on braille alone without an acceptable and reliable stock of braille material as is the case of Zambian learners is not healthy academically. Mtonga & Musonda (2015), in their presentation at an international conference, Southern Africa corporative History in Education (SACHEs), in South-Africa: Bloemfontein, report that In Zambia, About 62.5% of those who read braille have various difficulties which range from comprehension, understanding, tactile difficulties. To a greater extent, these difficulties are exacerbated by the inadequacy of reading materials. The same study concludes that it is evident that usage of braille cannot help blind learners with visual impairments. Governments and administrators are always hesitant to provide learning materials to learners with visual impairments because of the high costs, scarcity and technical in nature.

Therefore, the outlined reasons for blind people being braille inclined above seemed incompatible with Zambian situation. Hence carrying this research to come up with localized reasons for blind learners being braille inclined in Accessing Career Guidance information than through ICT was highly needed.

2.2.2. Existence of Resources to Support use of ICT

Just as the theory guiding the study points, facilitating conditions has an impact on the degree to which an individual believes that an organisational and technical infrastructure exists to support use of ICT. Additionally, the influence of facilitating conditions on usage is moderated by the availability of the infrastructure, age and experience of the individual (Venkatesh, Morris, Davis

& Davis 2003). Therefore, infrastructure is very significant where Accessing Career Guidance information through ICT is concerned.

The study taken by Kozma (2005) in Nigeria points out that the limitation of ICT use in education is material related. The high cost of the technology and maintenance of the facilities, high cost of spare parts, virus attack of software and the computer, interruptions of internet connections, and poor supply of electric power are among the technology related accessibility limitations of ICT use in education and individual lives.

Tinio (2002) suggests that the other great challenge of accessing ICT was finances. ICT in education programs require large capital investment therefore, individuals and government need to predict the benefit of ICT use to balance the cost relative to the existing alternatives. Potential sources of money and resources for ICT use programs suggested, are grants, public subsidies, fund-raising events, in kind support from volunteers, community support, revenues earned from core business, and revenues earned from ancillary activities.

Olson (2000) points that infrastructure challenges that may exist are absence of appropriate buildings and rooms to house the technology, shortage of electricity supply and telephone lines, and lack of the different types of ICT, because of this, one needs to deal with infrastructure related challenges before the planning of ICT integration into education systems so as to promote equal accessibility.

Kulik (1994) postulates, most challenging condition to implement IC T in developing countries' schools are the inadequacy of existing infrastructures. Most of developing countries only about 20 percent of schools have computers, and most of which are in capital cities, causing a rural-urban divide to equity and access for quality education. Moreover, those schools, which have computers, experience limited or low access to internet connections.

On the other hand, Umunadi (2014) explains that teachers in institutions of learning are expected to adopt computers and the internet as a teaching tool. However, computers, network infrastructures and connections are not compatible to the size of enrolled students and existing demands. There is still little attempt, that is why the number of students in these institutions

using computers and the internet is insignificant. Students' skill of using the technology is also a series challenge that needs the attention of the institutions. Thus, these have implications for the future, to work hard for the benefit of student learning from the use of technologies.
Another serious drawback in accessing ICT in schools is the fact that computers are expensive. Nkokelonye (2008) adds on, in most schools ICT could be the single largest curriculum budget cost. This may be seen as a good thing but on the other hand there can be little money left over for other significant costs.

Jung (2005) in his research in Nigeria found that, inadequate supply of electricity is a hindrance to ICT accessibility. As it may be known, almost all the ICT tools depend on electric power to function. He further says, the power supply is very low, unstable and not available in most parts of the country. The implication of this situation on ICT accessibility is great. Furthermore, low Tele-density; skill in Designing Course Wares/ Software; funding is all pervasive drawbacks to ICT accessibility. The government investment in ICT for educational purposes is very poor as can be observed by the ratio of students per computer and level of internet connectivity.

The expense of ICT facilities, inadequate ICT materials, inadequate ICT infrastructure, lack of ICT accessories, electricity difficulties and inadequate internet facilities were pointed out as the major challenges facing students in accessing ICT. However, all the reviewed literature represented challenges from other countries and not specifically Zambia. Furthermore, the cited challenges were for sighted students and not necessarily the blind people. Therefore, it was not clear if these were the same challenges that caused Zambian learners with visual impairments depend more on braille than on ICT in accessing career information in their high schools. Of course, MOESVTEE, (2013), attests the introduction of ICT in schools, but it does not expose the challenges likely to be encountered in such schools. It is also silent on the part of learners with visual impairments difficulties in accessing career information through ICT. Therefore, conducting a research on why learners with visual impairments were more braille inclined in Accessing Career Guidance than through ICT was unavoidable.

2.2.3. Student Related Reasons

On the student challenges related Kozma (2005), during literature review, in Nigeria, discovered that limitation of ICT use in education is related to student behaviour. Appropriate use of computer and the internet by students have significant positive effects on students' attitude and their achievement. Nonetheless, it is very common to observe limitations related to student behaviour. Students tend to misuse the technology for leisure time activities and have less time to learn and study.

Yousef & Dahmani(2008) described online gaming, use of face book, chat rooms, and other communication channels as perceived drawbacks of ICT use in education, because, students easily switch to these sites at the expense of their study. Internet access at home, for instance, may be a distraction because of chat rooms and online games, reducing the time spent in doing assignments and learning.

The pointed challenges in the usage of ICT facilities above cannot be the reasons for being braille inclined in accessing career information than through ICT by individuals with visual impairments in Zambian secondary schools, because such challenges normally are faced by people who are already using the ICT facilities. Additionally, it is clear to see the challenges above are related to ICT abuse and not the accessibility challenges. Hence, it was prudent to identify actual reasons learners with visual impairments in Zambian secondary schools were more braille inclined in accessing career information than through ICT.

Other researchers argue that students need to have role models to inspire them in learning and making informed decisions. With the thought in this line was Mikre (2011) who revealed that education's reluctance to adopt innovations need to be seen in the context of existing technology and commitments due to lack of models to inspire the learners.

Watson (2001) states that change or improvement can happen in ICT at schools if teachers understand themselves in this area and understood by others. For instance, many teachers are currently not in a position to make informed judgements on ICT to support their teaching goals, Because of this, the influence of ICT does not bring revolutionary encouragements to learners.

Volman (2005) reports that the national ICT survey in the Netherlands shows that most primary-school students use computers less than once a week and there are still many secondary school teachers who do not use ICT at almost often. This makes learners lack motivation and instruction/direction from their teachers.

Lack of role models, scarcity of ICT facilities especially PCs and source of inspiration are a set of challenges normally encountered by learners in most schools when learning. As it is demonstrated above, if learners lack people to inspire, instruct and motivate, no interest in learning of any kind can take place in the area of ICT. Nonetheless, it was not known if this was conspicuous with Zambian learners with visual impairments in special/inclusive schools and units. Hence, field work was still needed, so as to verify this assumption in the Zambian context.

2.2.4. Attitude of Teachers towards Learners with Visual Impairments use of ICT

Educator's attitude plays an important role in the learning process that utilises computers and internet connections. Although educator's attitude towards use of these technologies is vital, many observations reveal that educators do not have intelligibility about how far technology can be beneficial in the learning of students with visual impairments and for the facilitation and enhancement of learning. Of course, some educators may be aware and have positive attitudes to the technology, but refrain from using it in Instructing and helping such learners due to low self-efficacy, tendency to consider themselves not qualified to Work with technology and the students at hand.

In this respect, Bandura, Barbaranelli, Caprara & Pastorelli (2001) describe self-efficacy as *individual's opinion of capabilities to organise and perform courses of actions to achieve particular types of performances.* Moreover, as identified by Brosnan (2001), attitude, motivation, computer anxiety, and computer self-efficacy are factors affecting educators' use of computers in their work with individuals with visual impairments.

Furthermore, Brosnan (2001) suggests that educator resistance and lack of enthusiasm to use ICT in education may also be another limitation. Many educators may not have the required IT skills and feel uncomfortable, nor do they have trainings needed to use the technology in their work.

Unless educators develop some basic skills and willingness to experiment with students, ICT use in education is a challenge.

As earlier alluded to, one of the major barriers for the cause of ICT not reaching its full potential in the education of students with visual impairments is teacher's attitude. Hara (2004) Puts it, within tertiary years education attitudes towards ICT can vary considerably. Some see it as a potential tool to aid learning whereas others seem to disagree with the use of technology in special/inclusive schools.

Blatchford & Whitebread (2003) suggest that the use of ICT in the students with visual impairments is *unhealthy and delays learning*. On the contradictory remark, Blatchford & Whitebread (2003) report that other early years educators who are opposed to offering ICT experiences within the educational settings take a less extreme view than this and suggest that ICT is fine, but there are other more vital experiences such as braille and dictations that young people with visual impairments can benefit from than ICT.

An International study by Pelgrum & Anderson (1999) in Voogt (2003) shows a major obstacle for ICT integration in the education of learners with visual impairments and that is the difficulty of providing special computer accessories and internet into classroom practices. Teachers' lack of competence and enthusiasm to use computers in the instructional processes also contribute to the difficulty.

In addition Carnoy (2004) points that teachers do lack the required skill to match the technology (e.g. Computers and the internet) with innovative pedagogies that benefit students' learning. Many teachers do not have the necessary IT skills and feel uncomfortable, nor do they have the specific training needed to be able to use the new resources in the education for learners with visual impairments.

Teachers' negative attitude, educators' lack of relevant qualifications or knowledge on ICT and self-efficacy are a set of hindrances pointed involved in the accessibility of ICT. As aforementioned, the government of the republic of Zambia through the MOESVTEE (2013)

introduced ICT in schools without preparing the teachers to implement the vision. However, what was not known were the reasons why Zambian learners in secondary schools remained more braille inclined in accessing career information than through ICT. Moreover, the consulted literature above gave ICT challenges in other countries' ordinary primary and secondary schools and not the special and inclusive Zambian schools. Therefore, there was a serious need to establish reasons learners with visual impairments were more braille inclined in accessing career information than through ICT in selected secondary schools of Zambia.

To move on, the survey conducted in Africa by Hare (2007) argues that the school leadership also plays a key role in the ICT education of students with visual impairments. Lack of support from the school administration is also a big challenge. Thus, for the effectiveness of ICT integration, administrators must be competent and have a broad understanding of the technical, curricular, administrative, financial, and social dimensions of ICT use in education for such learners.

As reviewed above, lack of support from Administration could be one of the obvious challenges in most schools, and normally this leads to difficulties in implementing subject teaching and learning including ICT in schools. However, it was not known if this reason applied to selected secondary schools of Zambia pertaining to Accessing Career Guidance information through ICT. Thus, endeavouring in such a research was certain.

2.2.4. Policy on Information and Communication Technology

Researchers argue that the key reasons of learners with visual impairments being braille inclination in accessing career information may be policy and political will. Brosnan (2001) elucidates that ICT -enhanced accessibility in education requires clearly stated objectives, mobilisation of resources and political commitment of the concerned bodies.

Warschauer (2003) indicates that other challenging points at the level of policy and planning are identification of stakeholders and harmonisation of efforts across different interest groups, the piloting of the chosen ICT -based model, and specification of existing sources of financing and the development of strategies for generating financial resources to support ICT use over the long term.

Surely the absence of political will and unclear, inconsistent policy cannot yield any positive results in access to career guidance through ICT. This is so because ICT facilities are expensive and require direct government intervention in terms of financing and purchasing of technological devices for better implementation of ICT. Therefore political will and clear stable policy are what is required. Nevertheless, it was not yet established if political and policy problems are issues affecting selected secondary schools in helping visually impaired students in the area of accessing career information through ICT.

2.3. Access to Career Guidance through ICT

Despite the aforementioned reasons of learners with visual impairments being braille inclined in accessing career information than through ICT in other countries, it has been confirmed that accessibility to career guidance through ICT by students with visual impairments broadens their job opportunities, improves academic performance and progress and solves other impacts of visual impairments.

A revelation from a longitudinal study taken by American Foundation for the Blind (AFB) (2015) reports that there are three primary issues facing individuals with visual impairments: access to career information, independent travel, and a lack of meaningful experiences. ICT is used by individuals with visual impairments to compensate for these limitations. It also pointed out that ICT through the acquired computer skills can enable students living with visual impairments to achieve educational success and gain competitive employment by providing tools for increased independent access to information and for effective communication.

As earlier argued, this was not the case to people living with visual impairments in Zambia. They were confined to braille in accessing career guidance information. If not checked, this would have resulted in lagging behind on the information pertaining to job requirements on the labour market. therefore, establishing reasons learners with visual impairments remained braille inclined in accessing career information than through ICT and exploring how accessible career guidance through ICT was among learners with visual impairments in selected secondary schools of Zambia was very vital in this era.

Chung (2012) embarked on an experimental study in Georgia on how ICT helped in the learning of students with visual impairments. The study found that as learners used assistive technology, they were provided with more chances of learning and accessing the world as well as career information. For example, the use of computers configured with screen reader software like JAWS, NVD, DS and a lot more others avail information to blind individuals and granted them a wider access to daily living activities (ADL). As a result, they obtain total independence required by everyone in life.

Another survey conducted by AFB (2012) in the United States of America revealed that people with visual impairments can continue to work and pursue a tremendous range of studies because of the use of computers and other ICT devices.

AFB (2012) conducted a study on the use of ICT in a holistic life among learners with visual impairments in New York. The study was based on a reviewed of the literature. The study found that through appropriate training and use of ICT equipment, persons with visual impairments were able to excel in education and access career information that would help them choose their careers in the same way as the sighted peers.

For this reason, Mikre (2011) argues that education policies have to reflect alternate and new teaching paradigms that ICT can offer in terms of providing a more effective, relevant, and flexible mode of learning and access to career guidance for the underprivileged and the general masses.

A case study conducted by Kelly & Smith (2011), concludes that all students with visual impairments are entitled to the independence and efficiency afforded by ICT. Appropriate assistive technology enables students who are visually impaired to access information and to complete tasks efficiently, thereby enabling them to achieve the highest level of independence possible. Furthermore, emerging research suggests that technology promotes the acquisition of literacy, provides an equal access to information required for employment, and for access to information, in general, and facilitates social and community networks.

In the UK, Chowdry et al. (2009) analysed the longitudinal study of young people in England. Which assessed the educational attainment of fifteen thousand students on controlling for socio-economic status, parental education, family background, parental school characteristics and neighbourhood characteristics, found that home access to a computer and/or the internet is positively associated with levels of educational attainment at both secondary and tertiary schools. Further analysis by these researchers showed that internet access plays a greater role as computer access. The further findings do suggest that the lesser likelihood of home access to a computer or, especially, the internet among students from poorer families may contribute to the explanation of why they tend to make less progress from school to the place of work.

A qualitative study carried by Kelly (2008) reports that students with visual impairments must have access to blind and low vision instruction specific ICT tailored to individual unique needs, learning styles, visual abilities, and preferences to maximize lifelong efficiency, interest, and productivity in their education, home, and community lives. The ability to effectively and efficiently use the Internet will allow students to have independent access to a wide variety of information and to participate in online communication. Consequently, leading to sustainable independence needed.

Jackson et al., (2006) point out that the promise of the internet is that it enables most or all technologies previously said to enhance learning information sources, educational software and collaborative learning resources, and so forth. However, he argues that it is as hard to establish that home internet access raises educational attainment as it was, above, to establish that school ICT are beneficial. In one early study, Home-Net Too, low-income, mainly ethnic minority children in the US were provided with a home computer and internet connection, along with technical backup. Just connection improved school achievement over 16 months as a direct function of frequency of internet use. Specifically, this intervention found that increased internet use raised subsequent achievement in reading; high-achieving children get more from gaining internet access than do low-achieving children.

American Life Project (2003) states that the world is changing fast. New ideas, new technologies sand new economic and social imperatives at work are bringing nations and regions closer together both as partners and as competitors in technology and other fields of education.

Therefore, it is prudent that, every learner has an equal access to ICT. For ICT empowerment as a role is likely to influence the products general studies entrepreneurship pathways since it is generally considered to be an essential requirement for access to the desirable labour-market. Not only that, but ICT also affects their learning-to-learn skills, types of jobs they obtain, the international interactions they obtain, the status they attain and the wages they receive.
UNESCO (2003) in this regard calls for knowledge and appropriate skills to be fostered. Among them are; creative and critical thinking, oral and written communication and problem solving and planning using appropriate ICT and practical citizenship.

Furthermore, Wolfe & Spungin (2002) surveyed 102 organisations of persons with visual impairments in 72 countries in Europe to identify what would assist these learners in work related tasks. The study found that the use of technological aids and appliances can help learners a lot to access vital information needed for their education and career development. The study further revealed that these devices would enable them participate in different activities that enhance their academic and professional associated progress.

Basing on a study by Nagel (2001) on the accessibility of ICT and transition from college and universities into careers for learners with visual impairments in the United States of America, that analysed data in the report to the congress and the 21st National Longitudinal Transitional Study, It is clear that through the use of ICT devices, learners were able to access and use printed career information on their own which was particularly important for their academic and vocational success. Above all, they were able to link up with organizations which offered career related services. Consequently, they had an opportunity to access the information pertaining to career development and chose their desired careers.

A study conducted by Reid, Katz & Jacobsen (2005) in Illinois, using survey, it was found that in ICT there is flexibility of anytime, anywhere of access. Furthermore, it was discovered that students who used ICT in school felt more successful in school, were more motivated to learn and have increased self-confidence and self-esteem.

Hatlen (2000) took a research through the review of the literature and discovered that accessibility to ICT can level the playing field, for students with visual impairments and can be a great equalizer. Basing on his findings, he concluded that students who are blind or have low vision need to acquire a range of computer skills that will give them options for gathering and conveying information on career development for them to have a variety of careers to choose from.

Accordingly, a survey by The American Federation of the Blind (1997) on the impact of technological developments such as reading machines, personal computers with speech or Braille output, on-screen magnifications, closed circuit televisions, improved magnifiers of various sizes on education and career development of persons with visual impairments in the United States of America, the study established that the use of such ICT devices was a compensatory skill that helped learners to develop confidence and assertiveness through engagement in different activities. As a result, they were able to move into studies and careers that they could not pursue before.

It is clear from the reviewed literature that access of ICT by learners with visual impairments in other countries has lifted their academic performance. Access to ICT further has widened the career guidance opportunities for these individuals. Additionally, access to ICT has improved their social life. Nevertheless, desire to access career guidance information through ICT as pointed Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al, (2003), has to be in an individual's capacity and interest to succeed in adopting these innovations. Therefore, identifying reasons why learners with visual impairments remained more braille inclined in Accessing Career Guidance information than through ICT in this modern time was essential. Furthermore, establishing how accessible was career guidance information through ICT among learners with visual impairments in selected secondary schools of Zambia was important at this time.

Just as Donald Super (1972) argued in his career developmental theory by stating that career development is a process. He further points out that to the larger extent this process is influenced by skill acquisition. Therefore, ICT skill is needed in the life of every individual today as a way

of job readiness and widening of individual employability. However, this was not the case to Zambian individuals with visual impairments. Chulumanda (2011), Makondo & Akakandelwa (2011), Mulenga (2011) and Mathatha (2013) all report that individuals with visual impairments in Zambia are confined to teaching and telephone operating. They further report that this is as a result of the poor subject combination, lack of inspiration, lack of role models and poor educational provision. However, what was not known is how accessible was ICT to Zambian learners with visual impairments. The researcher further wondered if lack of accessibility to ICT by visual impairment learners in Zambia could have a negative impact on the education, access to career guidance information and social life in general. Additionally, could it be the lack of access to career guidance information through ICT that was the cause of the entire career limitation and academic arduous faced by these individuals in their learning and career development? Therefore, conducting a research to come up with answers in this area was inevitable.

Livingstone (2012) evaluated the implementation of ICT in schools in Nigeria and found that some children lacked access to ICT at home. It further revealed that although many parents did invest in domestic internet access to keep their children ahead or stop them falling behind in their academic performance, many struggled just as much as teachers with the practical difficulties of going online, often lacking the necessary technical resources.

Edozie and Agu (2010) and Umunadi, (2014), through a case study at Delta State University in general university studies in Nigeria, reported that ICT accessibility enhances the abilities of people to use ICT to improve their life-skills and use of ICT strengthens their study capabilities. It also helps the user to have a clear understanding of the potential opportunities of using any new technology, like the internet. They are further Motivated to use ICT as an essential element in all kinds of work, learning and career development process.

Voogt (2003) and Mikre, (2011), state that, as much as Education prepares students for the use of ICT in education, future occupation, and social life. ICT can also be used as an assisting tool. ICT is used as a tool, for example while making assignments, collecting data and documentation,

communicating, and conducting research. Typically, ICT is used independently from the subject matter.

Achugbue (2010), proposes that universities are not only being held accountable for validating the contents of their courses through advisory boards and accrediting bodies but they must also graduate students who are knowledgeable, competent and empowered to meet the over changing needs of different aspects of general studies to assist them in the industry through ICT accessibility.

Although all the reviewed work done in Africa agree with those in western countries above, on how ICT tremendously improves people's lives, they have not focused on people with visual impairments. Additionally, it was not clear on how career guidance information through ICT was accessible to learners with visual impairments in Zambia. Hence launching an investigation on how accessible was career guidance information through ICT to learners living with visual impairments and reasons of being braille inclined in accessing career information than through ICT.

2.4. Factors that might have influenced access to Career Guidance through ICT

There are so many factors that would ensure career information access through ICT becomes a reality to blind individuals and to the nation as a whole. One such factor is pointed by Tinio's (2002) studies who suggest that issues such as analysis of current practices and arrangements, identification of potential drives and barriers, curriculum and pedagogy, infrastructure and capacity building to be considered in the formulation of policy and planning. In addition, it is wise to specify educational goals at different education and training levels as well as the different modalities of ICT use that can facilitate in the pursuit of the goals.

Policy makers, administrators, educators and politicians, then need to know the potentials of ICT in applying different contexts for different purposes in the life for students with visual impairments. So as to come up with the favourable policy and suitable administrative/ management skills and positive attitude towards access to career guidance information through ICT to learners with visual impairments

With respect to challenges of capacity building, there is a need to develop competencies of teachers and school administrators for the successful implementation of ICT in the education system. In fact, one obvious impeding factor of ICT implementation in the education system is the skill gap of people implementing it. Tinio, (2002), For instance, proposes that teachers need professional development to gain skills with particular applications of ICT, integration into existing curricula, curricular changes related to its use, changes in teacher role, and on underpinning educational theories such as constructivism/or student-centred learning. Because of this, any attempt of ICT integration in education should be parallel with teachers' professional development.

Tinio (2002) recommends that schools should profoundly revise present teaching practices and resources to create effective learning environments and improve life-long learning skills and habits in their students. ICT is versatile, and powerful tools that can help in this purpose and should therefore be present in every classroom, library and teacher rooms.

An international study by Pelgrum & Anderson (1999) in Voogt (2003) recommends; in order to improve, and make optimal use of ICT, changes in the pedagogic approaches and classroom strategies as well as integrating ICT in teacher training and staff development practices accompanied by teacher motivation schemes are imperative.

Abner & Lahm 2002; in the survey taken from 72 European countries, Murphy, Hatton, & Erickson (2008) a case study taken in Illinois; acclaim that Schools should ensure that all students have computer skills, equitable access to ICT devices and instruction as documented by the individualised education program. University programs must address the lack of blindness and low vision specific ICT knowledge in future teachers of students with visual impairments. Professional development opportunities must be provided through partnerships with school districts, universities, organisations, and assistive technology vendors to ensure that professionals stay abreast of emerging technologies and have the opportunity to become proficient in the use of the assistive technology that they will be teaching students with visual impairments to use.

Underwood (2009) in his article review, ascertains that the focus of developing countries should be on how they use ICT to compensate for the factors that are lacking in education, namely,

well-trained teachers and the resources to pay for expensive equipment. The task is to concentrate on technological alternatives that, at low cost, bring to students the imagination and creativity of a few excellent teachers.

Announcing a policy of financial support for the Home Access Programme (which provides a computer and a year's broadband access for the poorest fifth of UK families), is the Schools Minister Jim Knight said, at the 2008 BETT conference in DCSF, (2008): *We have to find a way to make access universal, or else it's not fair. More than a million children – and their families – have no access to a computer in the home. I want a home computer to be as important as having a calculator or pencil case is… The so-called 'digital divide' cannot be allowed to reinforce social and academic divisions.*

In accordance with the forgoing ICT arduous, above are suggested factors that would influence career information through ICT. The need to know if these factors are in line with what the blind students in selected secondary schools of Zambia needed to shift from accessing career information through braille to ICT was a goal of this research.

2.5. Knowledge Gap and Summary

The presented literature was sampled across the world, thus, global, African and national perspectives. However, most cited studies focused on challenges sighted pupils faced in using ICT in education and not on reasons learners with visual impairments remain more braille inclined in accessing career guidance information than through ICT. The other few studies focused on how useful was ICT to people with visual impairments in general and not necessarily in access to career guidance information through ICT among learners with visual impairments in secondary schools. Therefore, it was clear to tell that the outlined reasons for blind people being braille inclined in accessing career information above were not conspicuous with Zambian secondary schools. Hence, it was inevitable to establish reasons learners with visual impairments were more braille inclined in accessing career information than through ICT in selected secondary schools of Zambia.

Furthermore, it was clear from the reviewed literature that access to career information through ICT among learners with visual impairments in other countries has elicited academic performance. Access to career information through ICT further has widened the career

opportunities for these individuals. Additionally, access to career information through ICT has improved their social life. Nevertheless, this was not the case with Zambian people with visual impairments. The majority was seen not doing well academically, they were confined to Teaching and Telephone Operating and they were restricted in social activities. Thus, it was prudent to explore how accessible career guidance information was among learners with visual impairments in selected secondary schools of Zambia.

Trained teachers, provision of ICTs facilities, adequate funding were raised as factors among afore cited literature from other countries that influenced access to career information through ICT. However, there was a need to confirm if these were the same and only factors that might have influenced access to career information among learners with visual impairment in Zambian selected secondary schools. Therefore, to address these concerns, conducting a research was the only solution.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Overview

The previous chapter gave an insight of what different researchers found in their studies, their conclusions and their recommendations. In this chapter, the different methods, approaches and strategies used by the researcher to execute the study are explained. The methodology of the study is presented under the headings: research design, the population of the study, study sample, sampling procedure and instruments for data collection. It further presents data collection procedures, data analysis, limitations of the study, ethical considerations and finally a summary of the chapter.

3.2. Methodology

In conducting research, there are two universal research methodologies that can be used to direct a study. The two paradigms are quantitative and qualitative. Eric (2009) states that the two terms were often used to describe the major research approaches to management or organisational research approaches. Other terms used for quantitative research paradigm include functionalist, objectivist or positivist. On the other hand, the interpretive or subjectivist approaches describe the qualitative paradigm. Cohen & Manion (2006) further explain that within management and organisational studies, the quantitative approach is seen as objective as it relates to phenomenon or conditions independent of individual thought and perceptible to all observers, and relying heavily on statistics and figures. On the other hand, the qualitative approach is seen as subjective, relating to experience or knowledge as experienced by personal mental characteristics or states, and preferring language and description. Burke & Christenson (2004) referred to the qualitative mode as an attempt to reduce the distance between context and action through interaction between the researcher and the participants. This approach involves the examination of perceptions in order to gain an understanding of social and human activities.

In order to understand why learners with visual impairments remained more braille inclined in Accessing Career Guidance information than through ICT, a qualitative method was used. This means that the kind of information collected was not numerical but words that expressed feelings, perceptions and attitudes of the respondents.

3.3. Research Design

As Creswell (2009) promulgates, a research design is the process that involves the overall assumptions of research up to the method of data collection and analysis. The research design helps to plan in detail how to answer the research questions. In the case of this study, the researcher employed a descriptive case study design. Kombo & Tromp (2006) record that a descriptive case study seeks to describe a unit in detail, in context and holistically. Therefore, the researcher chose a descriptive case study design because the study focused on a relatively small sample of the population. In addition, the design was chosen because it is appropriate when a study intends to provide a narrative account of the lived experiences in this case of learners with visual impairments in relation to why they were more braille inclined in accessing career guidance than through ICT.

3.4. Population

Kombo & Tromp (2006) contend that a population is an entire group of persons that have at least one thing in common. This study, therefore, targeted all learners with visual impairments, grade teachers, all career guidance teachers and head teachers in four selected secondary schools of Zambia. They came from three provinces. Thus, two from Lusaka, one from copper-belt and one from Luapula.

3.5. Sample Size

Mugenda & Mugenda (2008) disseminate that a sample is a small group obtained from the population. This sub group is carefully selected so as to be representative of the whole population. The sample for this study was fifty-two respondents, segmented as fourty pupils with visual impairments, four grade teachers of learners with visual impairments, four career guidance teachers and four head teachers. Thus, ten learners were gotten from each of the selected secondary school. Four grade teachers as specified above (one from each school), one career guidance teacher and one head teacher were selected from each of afore pointed sites.

In most cases, learners with visual impairments are not many in these schools (Mtonga & Musonda 2015). Thus, having this number of pupils was suitable with this study. In addition, learners with visual impairments were chosen for the study because they were the ones who were more braille inclined in accessing career information than through ICT. Therefore, they ably

gave reasons of being braille inclined in Accessing Career Guidance information than through ICT and answered on how accessible career guidance information through ICT was in their schools. The grade teachers, career guidance teachers and head teachers were included in the study because of their experience and to provide data which was to help verify the truth of what the learners were saying. Furthermore, the researcher reached on these numbers mainly because of limited numbers of the respondents with characteristics the study was looking for. Finally, schools were picked from three provinces of Zambia for proper data representation. The next paragraph provides characteristics of the respondents.

3.5.1. Pupils' Characteristics:

The characteristics of pupils who participated in the study were: fifteen were pupils with albinism, twenty were pupils with total blindness and five were pupils with partial blindness. In terms of gender, twenty-five were girls and fifteen were boys. Therefore, the total number of pupils who participated in the study was fourty.

3.5.2. Teachers' characteristics

The total number of teachers who participated in the study was twelve, segmented as: One male and three female head teachers. That means four head teachers took part in the study. Career guidance teachers were four one female and three males, the total also was four. On the part of grade teachers two were females and two were males, the total was four.

3.6. Sampling Procedure

Biklen & Bogden (1982) stated that non-probability sampling refers to a method of selecting the study participants with a bias towards certain individuals within the population. The individuals may be selected because of their unique characteristics in the study. This non-probability sampling is also referred to as purposive sampling.

This study employed purposive sampling procedure to select all the participants. Purposive sampling was mainly chosen because learners with visual impairments were quite few in those schools as the head teacher it was because there is only one head teacher and one career guidance teacher in each school at a given time, hence the reason for picking on these officers. On the part of the grade teacher, purposive sampling was used because there was only one teacher per grade. That is why only one grade teacher was chosen.

3.6.1. Research Instruments

Research instruments are tools for data collection. Thus, this study used two research tools: semi structured interview schedules and focus group discussion guides.

3.6.2. Semi Structured Interview Schedules

Interview schedules were chosen as the instruments for this study because they are one of the qualitative research tools, they demand close interaction between the researcher and the respondent and further provide an opportunity for a researcher to discuss with selected respondents. This is in line with Cohen & Manion (2006) who indicated that during face to face interviews, a researcher asks the participants questions. As they provide answers, the researcher can make follow up the question in order to clarify a point. Furthermore, the researcher makes observations in order to determine whether the respondent is telling the truth or not. Therefore this study, sixteen pupils with visual impairments and four head teachers, four career guidance teachers and four grade teachers were interviewed at different times.

3.6.3. Focus Group Discussion Guide

While focus group discussion guide was chosen mainly because of the interaction they promote between the researcher and respondents. It was used too due to the opportunity it accords respondents to argue in order to come up with the right conclusion on the topic at hand. Focus group discussion was picked as well because of its flexibility to both the researcher and respondents. In line with the afore articulated reasons, are Burke & Christenson (2004) who explained that focus group discussions are important in researches because the researcher interacts with the respondents. The researcher identifies some participants in the study, he/she asks the discussants questions. The respondents, as a group, are free to argue and share their independent views about the subject matter. The researcher can also clarify a number of other issues during the discussion. The researcher guides the discussions. That is why in this study, focus group discussions were held with twenty-four pupils (six from each of the four schools). Focus group discussion was also chosen as an instrument for the study because it helped to verify the truth of the data collected through interviews.

3.6.4. Triangulation

This study used triangulation to strengthen the depth, validity, and reliability of its results. Keeves (1997) defines triangulation as *the application and combination of several research methods in the study of the same phenomenon*. It was found that triangulation in this study worked effectively in that data from focused group discussions was supported by data from semi structured interviews

3.6.5. Pilot Test.

In order to verify the validity and reliability of the research tools, the tools were tested at Mano Basic School. The school was chosen for pilot testing of instruments because it had learners with visual impairments who had depended more on braille in accessing career guidance information than through ICT. It was further because the school was one of the public schools which were obliged to offer ICT to learners with visual impairments. Kombo & Tromp (2006) defended the practice of pre-testing research tools. Arguing that pilot testing research tools helps the researcher to redesign his/her tools in case the researcher does not seem to be getting the correct information from the respondents. Pilot testing would also provide an opportunity to the researcher to learn what would be the possible outcome of his-her study if the tools were able to elicit the correct responses.

After focus group discussions with pupils and interviews with head teacher, career guidance teacher and grade teacher, a number of findings emerged. It was observed that certain questions needed to be adjusted. There was also need to include a question on the type of visual impairments for learners and gender in the case of all respondents.

The information collected during pilot testing showed that despite introducing ICT as a subject in schools by the Ministry of Education in 2013, access to career guidance through ICT among learners with visual impairments was not in existence even at lower grades. It further revealed that learners with visual impairments have not even touched the computer in-spite the school having a few computers.

3.7. Data Collection Procedures

This section of data collection procedure explains on how the researcher collected information in four schools. Kombo & Tromp (2006) explained that under this subsection, a researcher needs to show what happened in the process of collecting information. It is important to explain the procedure because it helps anyone evaluating the study to understand what difficulties could have arisen during the research process and whether the challenges could have an effect on the results.

The researcher decided to start with the collection of data from the secondary school in Luapula province.

Three weeks before travelling to Luapula province, a letter was sent to the head teacher. A follow up phone call was made to confirm receipt of the letter by the administration. On arrival, the researcher was welcomed by the head teacher. Just after interviewing the head teacher, the researcher was subsequently introduced to the deputy head teacher who assisted in organizing teachers and learners for the meetings. Grade teacher and career guidance teacher were brought into the deputy head teachers' office for face to face interviews. However, the grade teacher was not comfortable in the office; he opted to use his class during lunch time.

After lunch, the researcher was taken to the resource room. The researcher explained clearly to the pupils the purpose of the study. However, only two pupils were interviewed out of four due to time. The next day, after lunch, the remaining two were interviewed. A focus group discussion was held with the selected learners. After which, the researcher spent two more days compiling and verifying the responses given by the teachers and learners.

The researcher went to copper-belt province. The school administrators were already aware of this trip. Though the head teacher was on leave, the deputy head teacher was interviewed in place of the head teacher. Afterwards, the deputy head teacher handed over the researcher to the senior teachers who in turn helped him to do his work.

The researcher interviewed the grade teacher and career guidance teacher in the morning. The next day in the afternoon, all the ten learners gathered in a grade eleven class. The researcher in the company of the senior teacher explained the purpose of his visit. The researcher then interviewed four pupils one by one and the remaining six were reserved for a focus group

discussion. On the third day, the researcher had a focus group discussion with six pupils. The researcher remained for an extra one day to verify and clarify certain responses.

After a week the researcher went to one of the Schools in Lusaka province, welcomed by the head teacher. After an interview with the head, the researcher was handed over to the Head of Department (HOD) special education that organised interviews with the grade teacher and the career guidance teacher. The grade teacher and the career guidance teacher were then interviewed. In the afternoon, four pupils were interviewed as well. The following day, the focus group discussion was held.

Finally, the researcher went to the last school in Lusaka province; he was welcomed by the deputy head teacher because the head was not in school. Therefore, the deputy head teacher introduced the researcher to a grade teacher and career guidance teacher and the researcher later interviewed them. During break time, the deputy head teacher organised the interviews with the pupils. Then later in the day, a focus group discussion was held with the remaining six pupils. The head was interviewed at last.

3.8. Data Analysis

Based on the study objectives and questions, the qualitative data collected from the research tools were grouped into meaningful patterns that revealed how the themes were related. Thematic analysis was used to analyze the data. Thus, themes categorization and narrations were made. The major themes were derived from the objectives of the study. Description of each theme was done, analysed and interpreted critically and objectively. The researcher carefully examined the data to ensure uniformity, accuracy and completeness.

The interpretation of data from interview guides and focus group discussions were represented by the use of italics and descriptions of respondents' views. Italics denoted the actual voices of respondents. Therefore, the analysed data was presented descriptively and verbatively. The responses from the two instruments were coded and grouped to establish the merging themes. The similarities and differences were identified and presented in form of a detailed description of the observed situation in the study sites.

3.9. Limitation of the Study

In line with Cohen et al (2006), limitation is an aspect of a research that may negatively affect the results but over which the researcher may have or no control. Therefore, during collection of data, pupils were overjoyed to participate in interviews and focus group discussions. They initially considered the study as a way of telling their grade teachers, career guidance teachers and their head teachers to start offering ICT practical lessons to them immediately. Thus, most of the responses were exaggerated probably to win favour from the researcher. However, the researcher took time to reinstate clearly the purpose of the study.

Another limitation was that during interviews with head teachers, career guidance teachers and grade teachers, there was hyperbole responses pertaining to the difficulties they encountered in offering ICT practical lessons to pupils with visual impairments. Possibly this was done with the view of justification of their decision of not offering ICT to such pupils.

The other limitation was that this study was qualitative in nature and that it targeted few respondents, its findings may not represent the views of all persons with visual impairments in Zambia. The results should therefore, not be generalized.

3.10. Ethical Consideration

The study took into account all possible and potential ethical considerations. The measures taken to ensure compliance with ethics included: keeping the identity of the respondents confidential. As rightly identified by Eric (2009), the principle of confidentiality and respect are the most important ethical issues requiring compliance on the part of the researcher. Therefore, in ensuring that confidentiality was up held, roman numerals (i.e.: I, II, III and IV) were used to represent names of the schools. Furthermore, the ethical requirements demand that the researcher respects the rights, values and decisions of the respondents. As a result, during research, respondents' responses were neither interfered nor contested by the researcher. Informed consent was sought and obtained from both the respondents and the people in charge of the places where the research was carried out. All respondents received equal treatment. Above all, no any derogative action or remark was used against any respondent.

3.11. Summary

This chapter looked at the methodology on how the research was carried out, the design and the instruments used in the study. The researcher explained the research design and why it was chosen for the study. It also looked at the population and sample size. The chapter further established the method that was used to collect and analyze data. The following chapter presents findings of the study.

CHAPTER FOUR: PRESENTATION OF FINDINGS

4.1. Overview

This chapter presents the findings on access to career guidance through ICT among learners with visual impairments in selected secondary schools of Zambia. The chapter comprises the views of the respondents in the focus group discussions and in-depth interviews. The findings have been portioned according to the diverse categories the respondents participated in. This chapter unveils the findings of this study with regards to the issues expressed by: forty pupils, four head teachers, four career guidance teachers and four grade teachers. A total of fifty-two participants were available for the study. The presentation of the findings therefore is guided by the following research questions:

1. Why were learners with visual impairments more braille inclined in Accessing Career Guidance Information than through ICT?
2. How accessible was career guidance information through ICT to learners with visual impairments in selected secondary schools of Zambia?
3. What factors might have influenced access to career guidance information through ICT among learners with visual impairments?

Thus, the aforementioned research questions were used systematically in eliciting required data from respondents.

4.2. Research Findings

The research findings were analysed so that comprehensive meanings from the data were obtained. Verbatives helped to represent the views of head teachers, career guidance teachers, grade teachers and pupils with visual impairments in the selected schools. therefore, the four schools where data was collected have been represented by roman numeral numbers as I, II, III and IV.

4.2.1. Why were Learners with Visual Impairments more Braille inclined

4.2.2. Pupils' Views from Interview

In order to come up with reasons for learners with visual impairments remaining braille inclined than ICT in accessing career information, pupils were subjected to the following questions in focus group discussions.

1. Why are you more braille inclined in Accessing Career Guidance information than through ICT? Kindly discuss
2. Do you agree with the assertion that Braille can be a limiting factor to your smooth career development and job management in Zambia? Give reasons to your answer
3. Basing on your own knowledge, which one is more advantageous between Braille and ICT to you in terms of information sharing and why do you say so? Give reasons

In response to question 1, the following were their answers:

> *Teku temwafye ukukana bonfya ama computer, mukukwata ilyashi lya pamibombele. Lelo nimukutila bakafundisha batufunda fye braille epela. Bateacher abengafunda ICT tatwakwata.*

Meaning: it is not our wish that we do not use computers in accessing career information, but teachers only teach us braille and not ICT. We do not have teachers who can teach us ICT for us to be accessing career information through ICT said one of the pupil from school III.

A pupil from school I also indicated that:

> *We do not have special computers except Perkins braillers.*
> *Hence, making it hard for us to access career information from internet*

Another pupil from school II said:

> *We do not even have a safe room where special computers can be used nicely and kept*

A pupil from school IV mentioned that:

> *We have fourty computers in this school, but only our sighted friends use them.*

Another pupil from school III indicated that:

> *In our case we have the computer lab and computers with JAWS,*

donated by ZICT A. However, no teacher is conversant in orienting us on how to use them in accessing information from the internet.

Another pupil from school III, revealed that:

We do not take part even in ICT practical lessons and practical examinations, but only learn theory ICT lessons and we write two examination theory papers

The other pupil from school I bemoaned that:

As much as we would want to use ICT in accessing career information, we are hindered by the fact that ICT facilities are extremely expensive.

Another pupil from school III pointed that:

The Ministry of Education has no policy to force our teachers to teach us how to use ICT facilities in accessing information.

The other one from school IV, expressed shock as how can a blind person use ICT facilities in accessing information. She said:

Muuuuuuuu! nga kuti umuntu ushilemona abonfya shani computer, aya shani pa internet. Awe, ine kwena shamonapo nokumfwpo nakalya.

Meaning how can a person who is not seeing use a computer and go on internet. No, I have never seen nor heard such a thing.

Reacting to the second question the following were their responses:

A pupil from school I said:

People who know Braille are very few in Zambia. Moreover, they are only found in the ministry of education. That is why most blind people go for education in terms of jobs.

Another pupil from school III pointed that:

Braille is quite voluminous; this makes it difficult to carry material wherever you go. Therefore, jobs like law that requires being with a number of literature becomes impossible

for us.

The other pupil from school III also said:

Braille production is very expensive, leading to inadequate supply of braille literature in our school.

Those respondents who disagreed to the assertion also had this to say:

Without braille no blind person can know how to read and write, You cannot know the spelling of words through listening only.

Said a pupil from school IV.

There are so many blind people in Zambia and other countries who have succeeded as a result of braille.

Said another pupil from school I.

On question number three a pupil from school III had this to say:

Jobs like law become difficult to join and subjects like literature become impossible to take due to volumes of braille, but ICT can give us higher chances of having jobs like law and take subjects such as literature successfully.

In their view ICT was advantageous in accessing career guidance information than braille. They mainly sighted the braille material shortage in their schools, limited users and its limitations.

4.2.3. Pupils' Views from Interviews

During interviews, pupils gave the following reasons as to why they were more braille inclined in accessing career information than through ICT. Their responses were to the following questions.

1. Why are you more braille inclined in Accessing Career Guidance information than through ICT?
2. Do you agree with the assertion that Braille can be a limiting factor to your smooth career development and job management in Zambia?
3. Basing on your own knowledge, which one is more advantageous between Braille and ICT to you in terms of information sharing?

A pupil from school I said:

> *We have no any other option apart from accessing career information through word of mouth and braille. For we are introduced to braille only and not ICT. We do not even take part in ICT practical lessons and examinations.*

Another pupil from school IV said:

> *We are told that our ICT facilities are very expensive than braille facilities, Hence, going for cheaper way of accessing information.*

One pupil from school III complained that:

> *We have no teachers who can help us know how to use computers in accessing career information from the internet.*

Pupils from school I, II and IV indicated that the schools had no special computers, making it impossible for them to learn how to access career information through ICT. They were only taught braille and that was the only way of accessing career information they knew suitable. They further indicated that ICT was just introduced recently; it was not yet serious in all Zambian public schools. Pupil's also revealed that there was no policy in place to direct teachers to start teaching ICT in their schools.

On the limitations of braille, pupils indicated the following:

One pupil from school II said:

> *Very few people are able to read and write braille in our country except those teachers who have done special education from ZAMISE. That means, as blind people we can only access career information from other people who do not read braille with the help of those teachers. So, in the absence of those teachers, it becomes difficult to access career information.*

A pupil who refused the assertion said:

> *It is not true because I have seen a lot of blind people who have progressed as a result of braille. The best example I can give is our teachers here. They are totally blind and have succeeded as result of braille.*

When asked on which one was more advantageous between braille and ICT in terms of information sharing, the majority went for ICT and gave the following reasons: ICT was needed

to find a meaningful job. They further pointed that braille in Zambia was read by blind people only.

A pupil from school IV said:

> *ICT is more advantageous than braille for it makes it possible for us to communicate with anyone in the world while braille enables as to communicate with only those who know it.*

In the case of pupils who said braille was more advantageous than ICT, one of them had this to say:

> *It is not all about ICT or braille that can make someone to get a good job, but teachers who know how to teach can make us have good jobs.*

The aforementioned explanations from pupils were reasons why pupils with visual impairments in selected secondary schools of Zambia were more braille inclined in accessing career information than through ICT.

4.2.3.1. Head Teachers', Career Guidance Teachers' and Grade Teachers' Views

For clarity reasons in data presentation, each category of respondents as outlined above is presented separately. To start with, next are the head teachers' responses:

4.2.3.2. Views of Head Teachers from interviews

In responding to the following questions:

1. Why do your pupils remain braille inclined in Accessing Career Guidance information than through ICT ?
2. Do you agree with the assertion that Braille can be a limiting factor to your pupils' smooth career development and job management in Zambia?
3. Basing on your own knowledge, which one is more advantageous between Braille and ICT to your pupils in terms of information sharing?

Head teacher views were:

> *It is a well-known fact that learners with visual impairments have visual problems, thus they are brought to this school to learn how to read and write by means of braille. There is no any other suitable medium of communication for them than braille at the moment.*

Said head teacher from school IV

The head teacher from school I stated that:

> *Although the government introduced ICT in all Zambian public schools, teachers for special pupils are not yet trained. Hence, no teachers to help them access information through ICT.*

Head teacher school III stated:

> *In my case here, ZICT A donated computers fitted with JAWS, Wi-Fi, constructed a modern computer Lab. The only problem I am engulfed with is lack of trained teachers in handling learners in using computers fitted with JAWS.*

The other head teacher from school II also had this to say:

> *Assistive technology equipment needed for them to learn on how to access information through ICT than braille as it is today are very expensive. We cannot afford to purchase them as a school.*

In controversy, Head teacher from school IV indicated that:

> *We have no special ICT facilities for them in school. However, we provide braille technology to them.*

Trying to find out as to which one was more advantageous between Braille AND ICT to pupils with visual impairments in Zambia, the following were the responses:

Head teacher from school III said:

> *ICT is more advantageous to pupils with visual impairments in accessing career information in the sense that it is potable, promotes easy communication to both braille and non-braille readers and ICT supports career diversification for visually impaired learners than braille.*

The other head teacher from school II had this to say:

> *few people read and write braille, while ICT is almost used by everyone. ICT enables learners with visual impairment communicate to anybody without any limitations, ICT brings the largest library and that is the internet closer to them, ICT is not a disability indicator*

as the case of braille.

Basing on aforementioned expressions from head teachers, it means ICT was more ideal than braille to learners with visual impairments in secondary schools of Zambia.

4.2.3.3. Views of Career Guidance Teachers from Interviews

Career guidance teachers' views to the following questions:

1. Why do your pupils remain braille inclined in Accessing Career Guidance information than through ICT?
2. Do you agree with the assertion that Braille can be a limiting factor to your pupils' smooth career development and job management in Zambia?
3. Basing on your own knowledge, which one is more advantageous between Braille and ICT to your pupils in terms of information sharing?

Were as follows:

. *How can they access career information through ICT and yet the school has even no infrastructure to host their special ICT machinery.*

Said a career guidance teacher from school I.

The other career guidance teacher from school II pointed to the lack of special computers to promote career information accessibility through ICT as a reason of braille dependence syndrome. He said:

This school has neither special computers nor any special ICT gadget, the situation making it impossible for blind learners to access career information through ICT.

Lack of interest on the part of learners themselves in using ICT to access career information was brought out by a career guidance teacher from school II as a reason for them to remain braille inclined.

I think blind learners have less interest in ICT activities. This is because; their sighted friends use their own means to access information online even before starting offering ICT to them in this school. However, this is not the case with these blind learners.

Lack of trained teachers was alluded to, by career guidance teacher from school III as a major cause of braille dependence. He said:

> *We have no teachers to teach ICT to blind learners in this school. Instead, they are only taught braille and assisted by reading for them very important information, especially academic related information.*

One career teacher from school IV said:

> *These learners have been exempted from ICT practical examination. Thus, it is not possible for learners to learn something which has no examination at the end of it all. or else, they can be dodging it.*

The other career guidance teacher from school I pointed to lack of clear guiding policy on ICT provision to learners with visual impairments. He indicated as follows:

> *There is no policy guiding the provision of ICT to such learners in schools so far. This situation makes us lack support from the government in terms of ICT materials and teaching staff.*

When career guidance teachers where asked whether they agree to the assertion that Braille can be a limiting factor to pupils with visual impairments' smooth career development and job management in Zambia, every career guidance teacher agreed and pointed that braille was a hindrance to career information accessibility to visually impaired individuals in Zambia. They further pointed that this was caused by the fact that braille materials were scarce in Zambian secondary schools. The actual reasons given were as follows:

A career guidance teacher from school II said:

> *Academic braille literature were not available in all schools where visually impaired learners are found. Therefore, depending on braille in this case means no provision of what to read, as a current situation in schools where blind learners are found.*

Addressing question three all career guidance pointed to ICT as the most advantageous way of sharing information among learners with visual impairments and those without.

Career guidance teacher from school I mentioned that.

> *Very few know braille, yet almost everyone is capable of communicating*

using ICT facilities. therefore, ICT is advantageous, for it enables blind individuals to communicate with anybody without limitation. It also widens knowledge level for individuals with blindness holistically.

Career guidance teacher from school II had this to say:

Braille requires expertise which is not the case with ICT. ICT is better than braille because ICT is portable and ICT facilities are also cheaper compared to braille production

A career guidance teacher from school III also said that:

Braille is very expensive in production for it is bulky while ICT is not. ICT requires less expertise and almost everyone can communicate by using ICT which is not the case with braille. ICT is far much better than braille and braille is a disability indicator.

ICT is advantageous in the sense that a lot of people are able to communicate effectively by using ICT facilities and very few can communicate effectively using braille. ICT facilities have a worldwide unlimited library while Braille literature is scant throughout Zambian special schools.

Said a career guidance teacher from school IV.

The other justifications career guidance teachers gave were: With ICT, research was easy to conduct while braille posed a challenge in research. With the availability of ICT facilities, it was easy for a blind learner to access all literature whether on hard copy or soft copy which was not the case with braille.

Lack of WIFI and wired internet made it difficult to provide career information through ICT. Therefore, learners were left without any option, but only to use braille and word of mouth. Electrical failure was another cited reason for learners not accessing career information through ICT.

4.2.3.4. Views of Grade Teachers from Interviews

In answering the following questions:

1. Why do your pupils remain braille inclined in Accessing Career Guidance information than through ICT?

2. Do you agree with the assertion that Braille can be a limiting factor to your pupils' smooth career development and job management in Zambia?
3. Basing on your own knowledge, which one is more advantageous between Braille and ICT to your pupils in terms of information sharing?

Grade teachers responded as follows:

> *One obvious reason is that braille is the only medium of communication prescribed for them in Zambia so far.*

Said grade teacher from school IV.

A grade teacher from school II argued by saying:

> *Actually, they do not depend on braille as per say, but on talks from us grade teachers, career guidance teachers as well as through interaction with their friends and family members.*

Another grade teacher from school I indicated that:

> *There is no policy direction so far from the ministry of general education on how to provide career information through ICT to such learners.*

A grade teacher from school II also said:

> *ICT introduction in public schools lacked clear road map, hence difficulties in learners' ability in career access through ICT.*

The other reasons grade teachers gave as to why their pupils remained more braille inclined in accessing career information than through ICT were : Unstable policy on ICT caused dependence on braille and lack of trained man power in the area of ICT for the blind grately contributed to braille inclination in information access by their pupils. They further indicated that lack of knowledge and support from the school administration led to lack of ICT facilities in their schools. Therefore, without ICT facilities, it became almost impossible in equipping learners with ICT skills. They also pointed out that lack of ICT practical examinations also contributed to pupil's lack of ICT skills as there was nothing to encourage teachers to prepare pupils for.

When asked whether grade teachers would agree with the assertion that Braille can be a limiting factor to pupils with visual impairments' smooth career development and job management in Zambia:

A grade teacher from school I said:

> *I sincerely agree with the assertion. This is so because Very few people are able to read and write braille in Zambia. Thus, making it difficult to share career information with anybody apart from braille readers. In this way, those who totally depend on braille miss out a lot on the requirement on the labour market.*

A grade teacher from school II also said:

> *Very true. This is a reason why almost every person with visual impairments is piled in education. This is so because only ministry of education has people who can communicate in braille.*

> *It is true, From my observation, very few people with visual impairments go far in Zambian education, if there are any. This is because of challenges posed by braille, Resulting into restriction in career development and job performance.*

Said a grade teacher from school III.

The grade teacher from school IV also supported the assertion by saying:

> *Very true this is observed in the restriction of the subjects taken by learners with visual impairments. There are some subjects that cannot be easily and effectively written in braille such as physics, chemistry and mathematics. Yet these are major subjects and a requirement for anyone to enter in the tertiary institution and pursue reputable careers. Therefore, they leave out all these important subjects and go for less important ones. Consequently, restricted in career choice*

When grade teachers were asked on which medium of communication was more advantageous between Braille and ICT to pupils with visual impairments in Zambia in terms of information sharing, the following were their views:

A grade teacher from school I said:

> *ICT is more advantageous than braille, for it is used by everyone, while braille only a few can read and write it correctly.*

A grade teacher from school II also said:

> *ICT is portable and easy to handle, while Braille is too voluminous and difficult to care. It is important to note that ICT can be accessible anywhere, while braille can only be found in blind related institutions.*
>
> *ICT facilities are cheaper than braille facilities. ICT facilities can be found anywhere within Zambia, while braille facilities are not available in Zambian stationary shops.*

Said a grade teacher from school III.

A grade teacher from school IV also added his voice and said:

> *ICT is currently a skill that is required from each and every employee and it is one of the skills that certifies an individual's readiness to enter the job market.*
> *Braille cannot be embraced anywhere else in Zambia apart from the ministry of education. ICT removes disability tags and stigma, while Braille is a disability tag pointing to blindness.*

Said a grade teacher from school II.

The major reasons that came from head teachers, career guidance teachers, grade teachers and learners as to why learners with visual impairments remained braille inclined in accessing career information were: Lack of exposure to ICT due to privation of: trained teachers, ICT facilities, ICT practical lessons, ICT practical examinations, relevant ICT policy and modern infrastructure.

4.3.1. How Accessible was Career Guidance Information through ICT?

In order to explore how accessible career guidance information through ICT was to learners with visual impairments in selected secondary schools of Zambia, respondents were subjected to various questions during focus group discussions and in-depth interviews and their responses are shown below.

4.3.2. Pupils' Views from Focus Group Discussions

All pupils from school I, II, III and IV through focus group discussion indicated that they did not access career information through ICT. Below were what they said:

One learner from school I clearly stated that:

we have not even heard of Accessing Career Guidance through ICT, the only career guidance we know is talking to us by career teachers, putting on ordinary clothes at school instead of a uniform during career's day and at times through braille passages.

The other learner from school II bemoaned that:

Tilibe nama computer yathu, but anzathu alinawo.

Meaning; we do not even have our own computers, but our sighted friends have.

A pupil from school III also mentioned that:

Using ICT in accessing information on career is very important to us, because we have limited access too literature in this school due to lack of braille books.

Another pupil from school III revealed that:

Lack of information on career development has made most of blind individuals go for teaching and telephone operating.

The other pupil from school IV specified that:

ICT cannot only provide information on career to us; it can further improve our academic performance and career development.

When asked on what kinds of jobs they were expecting to pursue, during focus group discussion, pupils pointed that: Since they were blind individuals; no any other job was awaiting them apart from Teaching and telephone operating. This was as a result of lack of braille literature on career education and other relevant skills such as computer skills which was the case with their sighted colleagues.

A pupil from school III said:

Since we are blind and we are in Zambia, it is teaching and telephone operating waiting for us.

When asked on how they chose their careers, pupil's clearly stated that they depended on their career teachers to talk to them and they observed those blind people who finished school the kinds of jobs they went for.

A pupil from school II said:

Our career and grade teachers talk to us and we already know that there is teaching and telephone operating only as jobs we can have in Zambia as at now.

When asked whether they had knowledge on pursuing other jobs apart from teaching and telephone operating, pupils mentioned that they were aware. Although it was not easy in Zambia for them to go to any other jobs apart from teaching and telephone operating for they were not prepared for such jobs during school time. Below was one of the actual responses a pupil from school II gave:

I have heard from my teachers that we can become lawyers, politicians, journalists, nurses, lecturers or pastors. Although having such jobs in Zambia is impossible for we are not prepared for that during school time.

4.3.3. Views of Pupils from Interviews

Pupils' responses from interviews indicated that they did not access career guidance information through ICT. Below were their actual responses:

School I, one pupil indicated that:

Career guidance through ICT is not available here

A pupil from school II also had this to say:

Our teachers just talk to us about different kinds of jobs available for us.

A pupil from school III also said:

At times, our teachers give us short braille passages talking about job requirements on the labour market. However, most of the times career information given to us is through verbal talks.

Another pupil from school IV indicated:

We put on ordinary clothes and our teachers invite the police, nurses, soldiers and doctors to talk to us.

When asked on the relationship between Career and ICT, A pupil from school II indicated:

It is a form of accessing information on jobs through ICT

When asked on how frequently they accessed career guidance information through ICT, all indicated that they did not access career guidance through ICT at any time.

When pupils were Asked whether they thought Accessing Career Guidance through ICT would improve career information accessibility and enhance job performance and management: They all agreed that ICT was capable of improving their career development and was also able to improve job performance at work. The following were some of the reasons they gave:

A pupil from school I indicated that:

> *ICT can enable us be on internet where we can get information on requirement on the jobs.*

A pupil from school II said:

> *ICT can also provide information on which career to pursue basing on the subject combination*

A Pupil from school III said:

> *It can enable us to know what other blind people are doing in other Countries and how they manage their career development.*

A learner from school IV also had this to say:

> *ICT can also enable us have independence and enjoy freedom of information accessibility and communication.*

On what job they intended to have after school: all pupils pointed to teaching and telephone operating.

On how they chose their careers, they all mentioned that teachers talked to them once in the while and seldomly presented to them short braille passages.

When pupils were asked on what other jobs they can pursue, they said:

A pupil from school III said:

> *We are told that we can be pastors, human resource personnel, politicians, musicians, lawyers, lecturers, counsellors, psychologists and bankers. Although we have not yet seen a blind banker, lawyer,*

psychologist, human resource, counsellor or a blind Politician in our country.

When they were asked on how they knew about these jobs: they mentioned that their teachers told them through career talks that took place termly.

4.3.3.1. Head Teachers', Grade Teachers' and Career Guidance Teachers' Views

The views from the head teachers, career guidance teachers and grade teachers on how accessible career information through ICT was among learners with visual impairments were presented separately. To start with, below were heads views.

4.3.3.2. Head Teachers' Views from Interviews

The head teacher from school III had this to say:

> *There is no career guidance through ICT in this school because I do not have teachers to teach ICT.*

The head teacher from school I mentioned that:

> *We cannot avail learners with visual impairments to ICT because they cannot manage. That is why even Examinations council of Zambia (ECZ) has exempted them from ICT practicals.*

Head teacher from school IV, indicated that:

> *blind learners cannot manage with computers that is why they are given Perkins braillers that is ICT for them.*

The other head teacher from school II clearly expressed doubt as:

> *How possible is it for the learners with visual impairments to access career guidance through ICT.*

Looking at afore presented information, it's clear to see that all head teachers denied availing learners with visual impairments with career guidance through ICT. However, all of them expressed knowledge concerning the meaning of ICT in relation to career information. Below is what head teacher from school II said:

> *ICT is just the tool used in availing information to clients, pupils in this case, while career guidance is job related*

information.

When asked if head teachers thought ICT was able to enhance career guidance accessibility and job management among learners with visual impairments; Head teacher from school III, indicated that:

> *ICT can do better for them. I am sure it can even reduce the demand of braille literature which is not even in schools.*

The head from school I indicated that:

> *It can, but the problem is ICT facilities are very expensive. Hence, they are not available in schools.*

When asked on jobs their pupils intended to pursue after school in line with career guidance offered to them, all of them indicated that: There were only three jobs available for their learners after school in Zambia and these were teaching, telephone operating and music.

When they were asked to state on how their learners with visual impairments developed their careers; they all specified that: Career guidance teachers talked to them and embossed some short paragraphs on available jobs.

When asked to tabulate other jobs their learners with visual impairments were to pursue, Head teacher from school III indicated that:

> *In other countries, the visually impaired can also be: Lawyers, politicians, human resource, counsellors and priests/pastors.*

Head teacher from school IV pointed that:

> *In the case of albinos, they can also be: nurses, medical doctors and all other health related jobs and any other job the so-called normal can do because they have less visual problems.*

When head teachers were asked to state if their pupils with visual impairments were aware about afore tabulated jobs, they indicated that: Learners were fully aware because career guidance teachers created time to talk to them verbally and through short braille transcribed career passages.

4.3.3.3. Career Guidance Teachers' Views from Interviews

The responses gotten showed that all career guidance teachers did not avail career information through ICT to their learners with visual impairments.

Career guidance teacher from school II had this to say:

> *There is no any official time at which learners with visual impairments access career information by means of ICT facilities in this school.*

Career guidance teacher from school II said:

> *We do not have special computers for them, because of this; they do not even participate in ICT practical lessons. They are further exempted from ICT examination practicals. In place of ICT practical paper, they are given another ICT theory examination paper.*

Career guidance teacher from school IV also said

> *We do not have computers they can use. It is this lack of computers that even makes us fail to provide career guidance information through ICT.*

Career guidance teachers agreed that ICT can improve career development for pupils with visual impairments and enhance job performance for blind workers.

Basing on the kind of career information provided to learners in their schools, career guidance teachers pointed to teaching, telephone operating and music as the only jobs their pupils were to pursue. They further attested to what learners, head teachers had indicated that They just talked to them and sometimes transcribed very interesting parts of career passages especially on the jobs that were available in other countries to motivate them.

On the other jobs their learners were to pursue, career guidance teachers pointed that Totally blind in other countries were lawyers, politicians, counsellors, clergy men/women, business men/women, human resource, bankers, receptionists and a lot more others.

They further indicated that learners with albinism did not have serious disability challenges that would have affected their career pathway. Therefore, they were to pursue any kind of job as long as they were supported through and through.

When asked career teachers if their pupils were aware about the mentioned jobs: they all accepted that pupils were aware except it was difficult in Zambia for them to go for aforementioned jobs.

4.3.3.4. Grade Teachers' Views from Interviews

The views of all grade teachers on how accessible was career guidance through ICT among learners with visual impairments in their secondary schools showed that it was not available.

A grade teacher from school I indicated that:

> *It is not only inaccessible to blind pupils, but even to the so-called normal. Although the schools have computers for the sighted pupils, it does not provide career guidance through ICT. Sighted pupils just access this information out of their own curiosity and through help from their friends and family members.*

All grade teacher's demonstrated knowledge on ICT in relation to career guidance.

When grade teachers were asked if ICT had ability to improve learners with visual impairments' career development and job management, one grade teacher from school III mentioned that:

> *it is undisputable fact once a pupil is well oriented on the usage of ICT, it can improve accessibility of career information to such a one and it can also improve the ability of job performance at work.*

When asked on jobs learners with visual impairments were to pursue based on career guidance offered, grade teachers pointed to teaching, telephone operating and music.

When asked whether learners with visual impairments were aware of the mentioned jobs and how did they develop their careers, a grade teacher from school IV specifically said:

> *Yes they are aware, for visually impaired in Zambia depend on career teachers' talks only for them to develop their career. Therefore, they are told.*

Grade teachers itemized the following professions as other jobs the visually impaired in other countries were pursuing: Spokes persons, lawyers, counsellors, musicians, politicians, psychologists, human resource, and bankers.

They further specified that those with a bit reasonable sight and albinos were able to pursue health related jobs and any other jobs the able-bodied were able to have. They emphasised that what was needed mainly was reasonable accommodation.

Asked if their learners were aware of these jobs; they indicated that they were aware because career guidance teachers availed this information to them during career talks.

Looking closely at the foregoing views from head teachers, career guidance teachers, grade teachers and pupils, it is clear to observe that learners with visual impairments did not access career guidance information through ICT. instead, learners at hand accessed career information through word of mouth and sometimes through short transcribed braille passages. It is further observed that due to lack of career information through ICT, learners with visual impairments in Zambia were restricted in career choice. Eventually, they were confined to two jobs which were teaching and telephone operating only.

4.4.1. What Factors Might have Influenced Access to Career Guidance through ICT?

To establish factors that might have influenced access to career guidance information through ICT among learners with visual impairments in selected secondary schools of Zambia, respondents were subjected to the questions:

1. What factors would influence access to career guidance information through ICT?
2. In order to access career information through ICT without challenges, what help do you need from:

I. Government,
II. School administrators,
III. Career guidance teachers
IV. Grade teachers

Therefore, their views were presented according to the category of respondents. The first category below is that of pupils from focus group discussion.

4.4.2. Pupils' Views from Focus Group Discussions

Pupils' views on factors that might have influenced career guidance information through ICT were as follows:

> *Materials such as computers Amajaws and internet are the things needed for us to start accessing information freely.*

Said a pupil from school II.

A pupil from school III said:

> *Awe ifwekwena amacomputer tuli nayo pano. Ubwafyafye, tatwakwata bateacher abaishiba ifya macomputer. Abalipo last of last year, balifye pa TP nokuya baliya panuma yakupwisha amasambililo yabo.*

Meaning: in our case here, we have computers, but we do not have teachers with knowledge on ICT. The teacher we had the other year was on teaching practice (TP) and left after completion of his studies.

One pupil from school I, lamented by saying

> *We learn ICT as a subject, but it ends on talking to us in class. We are excluded when our sighted friends go in the computer Lab for practicals. We do not also participate in ICT practical examinations. This in itself hinders our acquisition of ICT practicals that would enable us access career information easily.*

Pupils from school IV shared that their school had 40 computers, but they were not allowed to use them because they were told that they can't learn on how to use a computer. Instead, they were given Perkins braillers as their technology.

A pupil from school II pointed that:

> *Textbooks, special software, special computers and teachers are factors that would influence our access to career information through ICT.*

The other pupil from school III quoted the saying as:

> *Practice makes perfect*

She alluded to the involvement in ICT practical lessons and examinations.

A pupil from school IV pointed to positive attitude by saying

Positive attitude towards our ICT lessons from our head and teachers is highly needed

When asked what kind of help they needed from government, their administration, career guidance teachers and grade teachers, Learners indicated that:

The kind of help they needed from the government was provision of computers, speech modes, Abbey fine reader, pearl camera readers and internet connectivity. They added by saying, government needed to employ trained teachers, build modern computer Labs and monitor ICT teachers frequently. Learners furthermore indicated that government needed to formulate relevant policy that was to address ICT challenges encountered so that everyone was taking part in ICT practical lessons and practical examinations.

From the administrators, the kind of help learners needed for them to start accessing career guidance information through ICT was to involve them in ICT practical lessons and practical examinations.

Learners expected career guidance teachers to be well informed on the provision of career information through ICT equipment's. They also needed career guidance teachers to work hand in hand with ICT teachers in ensuring ICT skills was a success. They also needed career guidance teachers to be alert on employment and special equipment available in the area of career guidance verses ICT.

Learners further needed help from grade teachers by Presiding their ICT needs between teachers of ICT and administration in ICT provision.

4.4.3. Pupils' Views from Interviews

Factors that might have influenced access to career information through ICT, by interview, pupils indicated the following:

If our teachers have positive minds concerning our ICT practical lessons we can learn successfully.

Said one pupil from school I.

Trained teachers in ICT can help us acquire the skill of accessing career information on the internet.

Indicated a pupil from school II.

A pupil from school III pointed that:

> *Practical examinations encourages practicing. By so doing, a skill in the given subject is perfected. In this case our ICT skills can be perfected by means of availing practical lessons to us.*

Pupils from schools I and II pointed to material such as ICT text books, special software, internet, and computer provision as factors that can enable them learn how to access career information independently.

A pupil from school IV pointed to policy formulation and implementation as:

> *Ubwafyafye government icita kutampa icintu libe tabala ipekanya ukucita ico cintu. Kanshi kuti cawamisha elyo baletampa ifintu nishi naba mona ukuti fyonse ifile fwaikwa pali ico cintu baletampa epofili.*

meaning, the only problem is that the government starts somethings without being prepared. Therefore, it can be a better thing if the government always can be putting things in place before introducing anything.

Pupils with visual impairments through interviews further suggested the kind of help they needed from the government, school administrators, career guidance teachers and grade teachers for access to career guidance information through ICT to be a reality. Below were responses:

Government needed to Provide ICT materials, ICT infrastructure and trained teachers in ICT, stable electricity supply and relevant ICT policy formulation.

The school administration was expected to maintain ICT facilities and infrastructure when provided by the government.

Learners also needed career guidance teachers to work hand in hand with the trained ICT teachers in providing access to career information through ICT and Promote internet accessibility at school to encourage access of career information online.

They also needed grade teachers To work with teachers of ICT, career guidance teachers and the administration in ensuring that every learner was involved in ICT practical lessons.

4.4.3.1. Head Teachers', Career Guidance Teachers' and Grade Teachers' Views

Factors that might have influenced access to career guidance information through ICT among learners with visual impairments were presented according to the divergent categories of teachers. Therefore, each category of respondents as outlined above is presented separately. To start with, next are the head teachers' responses:

4.4.3.2. Head Teachers' Views from Interview

The following are views from head teachers as regard to factors that might have influenced career information access through ICT among learners with visual impairments:

The head teacher from school I indicated that

> *Materials such as computers, special software and internet facilities are quite important for learners with visual impairments to access career Information. If these are not available as the case of our school today, it is impossible for our learners to have access to career information through that medium.*

The head teacher from school III pointed that:

> *Trained teachers in this field are very essential. Remember this area of curriculum is very new and we have never had teachers with conventional knowledge in this area. Therefore, for its success, trained teachers are highly needed.*

> *If special computers are available for them in school, practical lessons and finally practical examinations greatly influences access to information. ICT is not the subject that would be successfully learnt theoretically.*

Said the head teacher from School I.

The head teacher from school IV mentioned:

> *our school has 40 ordinary computers for the sighted pupils. It is a challenge on our part for these learners to access them for they cannot use them. Just to help them, when the friends are learning ICT practicals, blind learners and albinos are given Perkins braillers as their technology. We have further advocated for exemption from ICT examination practicals because they cannot conduct them successfully.*

Every head teacher interviewed alluded to availability of textbooks, screen readers , special software, practical lessons, practical examinations, positive attitude and trained teachers as

factors that might have influenced the access to career information among learners with visual impairments.

When head teachers were asked on the kind of help they needed from government, career guidance teachers and grade teachers for pupils with visual impairments to access career guidance information without any problem, their responses were as follows:

Government was expected to provide computers, speech modes, special software and internet connectivity in schools. Government was also needed to employ trained teachers, build modern computer Labs and formulate relevant policy that addressed ICT challenges encountered by their learners with visual impairments in secondary schools.

Head teachers also needed positive attitudes from career guidance teachers to succeed in providing career information through ICT.

The expected grade teachers to reciprocate with career guidance teachers in equipping learners with visual impairment with ICT skills. Grade teachers were further expected to preside among learners, career teachers, subject teachers and administration in career information access through ICT provision at school level.

Basing on head teachers' views expressed here and if well implemented, career information access through ICT was going to be a success in their schools.

4.4.3.3. Career Teachers' Views from Interviews

Factors that Might have influenced access to career information through ICT among learners, by interview, career teachers indicated the following:

A career Guidance teacher from school III pointed:

> *trained teachers in ICT can help learners acquire the skill of accessing career information online.*

A career guidance teacher from school II specified that:

> *ICT Practical lessons and examinations are of great influence to learners' access to career information.*

Another one from school IV, said:

> *ICT practical lessons and examinations are needed for they encourage practicing.*

By so doing, a skill in ICT is acquired by learners themselves. And so, accessing career information can become a reality.

A career guidance teacher from school I indicated that:

Materials such as ICT text books, special software, internet, infrastructure, constant supply of electricity and computer provisions are factors that would have enabled our learners access career information independently.

Every career guidance teacher hinted to relevant policy formulation, ICT facilities, and modern infrastructure as major factors that might have influenced access to career information among learners with visual impairments in their schools.

When asked on the kind of help career teachers needed from the government, school administrators and grade teachers, responses were: The government was to provide ICT materials, ICT infrastructure and trained teachers in ICT, Stable electricity supply and relevant ICT policy formulation.

On the part of school Administration, career guidance expected them to Lobby for teachers from the government; maintain ICT facilities and infrastructure provided by the government.

Grade teachers were to work hand in hand with the trained ICT teacher in providing access to career information through ICT.

If career guidance teachers views expressed here were well implemented, learners with visual impairments were safe to access career information through ICT.

4.4.3.4. Grade Teachers' Views from Interviews

The following were insights from grade teachers as regard to factors that might have influenced career information access through ICT among learners with visual impairments:

Materials such as computers, special software and internet facilities are pretty important for learners with visual impairments to access career information. If these are not available as the case of this school, it is impossible for learners to have an access to career information through ICT.

Said a grade teacher from school IV.

This part of the curriculum is quite new and we have never had teachers

with formal knowledge in this area. Therefore, for its success, trained teachers are highly needed.

Said one grade teacher from school III

A grade teacher from school II indicated that

ICT practical lessons and practical examinations greatly influences access to information. ICT is not the subject that would be successfully learnt theoretically. Therefore, it requires hands on job kind of learning or learning by doing.

The grade teacher from school I also mentioned that:

The school has computers for the sighted pupils. However, it is a challenge for the learners with visual impairments to access computers for they cannot use them. Just to help them, there is a need to provide those speech softwares for them to learn ICT practicals successfully.

When asked what kind of help they needed from government, administration and career guidance teachers for pupils to access career information through ICT without any problem, their responses are below:

The Government was expected to provide computers, pearl camera readers, screen readers, internet, Employ trained teachers, and build modern computer Labs. The government was also expected to Compel ECZ to start assessing learners with visual impairments practically and Ministry of Education formulate clear policy that was to address ICT challenges encountered by their learners.

The school administrators were anticipated to supervise ICT teachers once employed by the government and maintain ICT facilities and infrastructure once available in schools.

They also expected career guidance teachers to be well informed on ICT equipmentts and be alert on employment available for learners with visual impairments.

Basing on the head teachers' career guidance teachers' grade teachers and pupils views on factors that might have influenced access to career information among learners with visual impairments; trained teachers, ICT facilities, internet connectivity, modern infrastructures, positive attitude ICT practical lessons and ICT practical assessment were the key essentials needed to be put in place.

4.5. Summary

This chapter presented the findings of the study on access to career guidance through information and communication technology. The presentation of the findings was done through research questions. Therefore, reasons learners with visual impairments were more braille inclined in Accessing Career Guidance than through ICT were established, accessibility of career guidance information through ICT among learners with visual impairments in selected secondary schools of Zambia was explored and factors that might have influenced access to career guidance through ICT among learners with visual impairments were examined. The study found that lack of exposure to ICT as a medium of communication, but only exposed to braille and word of mouth as the only way of accessing information due to: nonexistence of ICT facilities, non-availability of trained teachers in ICT, unclear policy on ICT, non-availability of modern infrastructure, non-involvement in ICT practical lessons and practical examinations as major reasons for learners with visual impairments being braille inclined in accessing career information. In accordance with the identified reasons, ICT practical lessons and examinations, trained teachers, supply of modern ICT facilities and ICT policy were found to be factors influencing access to career guidance through ICT. In essence, these findings have added new knowledge to the board of knowledge on access of career information through ICT among learners with visual impairments.

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.1. Overview

The previous chapter presented the findings of the study in relation to the research questions. This chapter discusses the findings on the access to career guidance information through ICT among learners with visual impairments in selected secondary schools of Zambia. The discussion is based on afore elucidated presentation of findings, in accordance with the set research objectives which are:

1. To establish reasons why pupils with visual impairments were more braille inclined in Accessing Career Guidance information than through ICT in selected secondary schools of Zambia.
2. To explore how accessible was career guidance information through ICT to learners with visual impairments in selected secondary schools of Zambia.
3. To examine factors that might have influenced access to career guidance through ICT among learners with visual impairments.

5.2. Reasons for learners with visual impairments being more braille inclined

The study established lack of exposure to ICT as a medium of communication, but only exposed to braille as the only way of accessing information due to: nonexistence of ICT facilities, non-availability of trained teachers in ICT, unclear policy on ICT, non-availability of modern infrastructure, non-involvement in ICT practical lessons and practical examinations as major reasons for learners with visual impairments being braille inclined in accessing career information than through ICT. It is a well-known fact that without the required ICT equipment, ICT trained teachers, modern infrastructure, clear policy on ICT, exposure to ICT practical lessons and practical examinations; it is difficult for learners to appreciate the value of ICT.

This finding was in line with MOESTEE (2013) that states, it is a well-known fact that school is an enabling environment for knowledge and skill acquisition. However, without modern ICT infrastructure to house ICT facilities, non-availability of salient ICT materials to use during teaching and learning, no trained teachers to facilitate ICT learning and lack of clear and

consistent policy; it is difficult practically to expose learners to ICT knowledge and skills. Therefore, the outcome was verbal dependence in accessing career information as it was in most Zambian integrative secondary schools. Learners with visual impairments were not taking part in ICT practical lessons and finally exempted from ICT practical examinations mainly due to unavailability of teachers of ICT, nonexistence of computers in some schools, unavailability of required software's for blind learners in some schools and lack of other ICT facilities such as internet connectivity and ICT devices.

Although the study found that learners with visual impairments were more braille inclined in accessing career information, braille materials were not in such schools. As a result learners depended more on verbal career talks on career's day also called civilian day held once per term. This is to the fact that all learning institutions throughout Zambia where learners with visual impairments are found have no text books of any kind. This finding is consistent with the study done by the organisation called Defeating Blindness inn Zambia (DBIZ) (2013). The study revealed that there were no braille textbooks in all learning institutions; this situation was making most blind learners failing to succeed academically. In the same study, it was recommended that there was need for a paradigm shift from braille to ICT, primarily to combat the issue of non-availability of braille materials in such schools. Therefore, it is not inevitable in this contemporary ICT generation for learners with visual impairments to still remain depending on short passages prepared by specialist teachers, to the larger extent on verbal talks from career's teachers in accessing career information, for this situation has resulted into career choice limitation for these learners.

It was clear to see that this study departed from the studies conducted by: Miller & Rash, (2001), Mangold, (2000), Ross, Scheira, & Urick (1999) reporting on how beneficial braille was to blind learners. They further pointed that braille gave palpable literacy experience that leads to academic success and finally independent career choice and job management. As afore argued, blind learners can be braille inclined and succeed only when there was adequate and consistent supply of braille instructional materials. Therefore, depending on braille alone without acceptable and reliable stock of braille material as the case of Zambian was not wise academically. This was also basing on Mtonga and Musonda's, presentation at an international

conference, SACHES, in South-Africa: Bloemfontein, where they reported that In Zambia, about 62.5% of those who read braille have various difficulties which range from comprehension, understanding and tactile difficulties. To a greater extent, these difficulties were aggravated by the inadequacy of reading materials. The same study concludes that it was evident that usage of braille in Zambia cannot help learners with visual impairments in accessing required career information. Government and administrators were always hesitant to provide learning materials to learners with visual impairments because of the high costs, scarcity and their being technical in nature.

Hence, there was a need of supplying speech software's such as, but not limited to: Job Access With Speech (JAWS), Non-visual Desktop Access (NVDA), Dauphine Pen Speech (DPS) and Thunder Screen Reader (TSR) to such schools already with computers. Not only speech software's, there was also a need to equip all schools with computers, internet connectivity, modern infrastructure to host ICT facilities, Abby Fine Reader (AFR) to enable learners with visual impairments take part in ICT practical lessons and practical examinations. Consequently, to access every kind of information from all computer formats. They should also ensure that all learning institutions have Pearl Camera Reader (PCR) for learners with visual impairments to read information from hard copies without depending on sighted colleagues. If the aforementioned facilities are in place, trained teachers in handling learners with visual impairments in ICT are available and the policy to compel school administrators and teachers to provider ICT practical lessons and conduct practical assessment to learners with visual impairments, only then will learners with visual impairments stop depending on verbal career talks and braille in accessing career information and join the world of ICT. It was also predictable that once these facilities were availed to such learners, they were no longer going to be confined to teaching and telephone operating as the case was in Zambia.

It was found that there was a strong link between ICT practical lessons, ICT practical examinations, ICT trained teachers, ICT infrastructure and relevant policy on ICT with accessing career information. Therefore, the coming paragraphs dwell on explicating such a link and the importance to a learner with visual impairments. To start with, below is the link between ICT practical lessons and its importance in accessing career information.

First and foremost, ICT should not only be taken as a subject to learners with visual impairments, but it should also be considered as tool of independent living, academic success, social interaction, meaningful experiences, career development and job management for blind individuals (AFB, 2015). Therefore, it was found that ICT practical lessons enabled learners with visual impairments to be familiar with ICT instruments, perfect their skill in using them and gain independence grabbed by the impact of visual impairments in various areas of their lives. In line with this, is the Chinese saying which says when I hear I forget, when I see I remember, but when I do I understand. Therefore, an individual can only be confirmed to have learnt if only he/ or she applies what he/she has been learnt practically and not verbally only. Moreover, learning in education is of two most important segments namely theoretical lessons and practical lessons. Therefore, a learner will only be termed to have successfully completed a course of learning after efficaciously going through all the two parts of learning as aforementioned in (MOESVTEE, 2013).

In support of the above findings, Petty (2009) argues that, concrete experience allows students to test out their ideas, methods and plans necessary in the acquisition and development of skills in ICT. Practicals increase personal involvement in learning and enliven topics. It also prepares learners for practical work experience. Thus, ICT practical lessons are a serious platform as theoretical lessons in learning for every learner. This entails that, if one was done with theoretical lessons and has not done practical lessons, such an individual is dubbed to be half baked. It is also vital to note that performance of a worker who did ICT practical lessons successfully will be different intensely from those who have not done practical lessons. This is so because an operative without an experience of practical lessons is likely to be doing a job on training which may not yield positive results easily. Consequently the efficiency in achieving organisational goals is momentously compromised. Therefore, this explains why workers with visual impairments who are mainly teachers and telephone operating in Zambia work with difficulties and considered less for promotions. Hence, ICT practical lessons are very vital in learning of pupils with visual impairments for they broaden the career choice spectrum, increases chances of promotion and upsurges the ability of effectiveness.

Furthermore, the need for ICT modern infrastructure that is accommodative cannot be over emphasised. That is why during data collection, it came out clearly that infrastructure challenges was one of the reasons why learners with visual impairments were more braille inclined in accessing career information than through ICT. This is in agreement with what Olson (2000) pointed; infrastructure challenges that may exist are absence of appropriate buildings and rooms to house the technology, shortage of electricity supply, lack of internet connectivity and telephone lines, and lack of the different types of ICT facilities, because of this, one need to deal with infrastructure related challenges before the planning of ICT integration into education systems so as to promote equal accessibility of ICT.

It was also true from this study that power failure also known as load-shedding was one of the reasons for not accessing career information through ICT. The situation found in some schools at hand, was similar to that of Jung, (2005), in Nigeria where he found that, inadequate supply of electricity was a hindrance to ICT accessibility. As it may be known, almost all the ICT tools depend on electric power to function. This was the case of the Zambian situation where power supply was very low, unstable and not readily available in most parts of the country. The implication was that learners with visual impairments remained more braille inclined in accessing career guidance information than ICT.

Furthermore, Umunadi (2014) explains that teachers in institutions of learning were expected to adopt computers and the internet as teaching tools. However, computers, network infrastructures and connections were not available in schools and there was no attempt to avail such facilities to learners. This was the exact situation in most integrative secondary schools of Zambia, learners with visual impairments were not yet considered for ICT practical lessons and practical assessment. That is why such learners in these institutions who use computers and the internet to access career information were not there. Nevertheless, these have serious undesirable implications on their current career choice and for their future employment. Therefore, to work hard for the benefit of the student learning from the use of technologies practically, there was a need to consider positively the highlighted shortfalls. If not, learners with visual impairments will continue lagging behind due to manageable afore-stated whys and wherefores.

On the part of the trained teachers of ICT, it was essential to note that the success of any education system relies on knowledgeable and skilled manpower. In essence, access to career information through ICT demands that all teachers teaching ICT should be trained and gain appropriate skills in ICT, so as to enhance the provision of quality access to career guidance through ICT to learners with visual impairments. Furthermore, there should be teamwork among stakeholders in the provision of career information through ICT. As mentioned before, the study discovered that all sampled schools did not have trained teachers of ICT to teach ICT to learners with visual impairments. Therefore, lack of trained teachers came out also as a reason why learners depended on verbal talks and being braille inclined in accessing career information than through ICT.

This finding was similar to that of Kalabula (1991) who observed that there was lack of knowledgeable and trained human resource to provide relevant knowledge to learners with visual impairments, a problem that seem to have continued up to now. The educational statistical bulletin, (2015), reports that there are less than two thousand qualified special education teachers against nine thousand schools in the country. Thus, no evenly distribution of skilled teachers in schools can take place. This clearly shows that there was a crisis of human resource in the field of ICT.

To add on, Brosnan (2001) pinpoints that teachers' resistance and lack of enthusiasm to use ICT in education was also another reason for learners failing to use ICT as a tool in accessing career information. He further reports that, many educators may not have the required IT skills and feel uncomfortable, nor do they have trainings needed to use the technology in their work. Unless educators develop some basic skills and willingness to experiment with students, ICT use in education is a challenge. This answers the reasons as to why learners with visual impairments were more braille inclined or depended on verbal talks in accessing career information than through ICT. Therefore, there was a need to train teachers specifically to handle learners with visual impairments in ICT so as to promote independence access to career information among these learners.

It is cardinal also to point that not every teacher of ICT that can facilitate ICT practical lessons to learners with visual impairments. However, only those specially trained to work with the computer configured with JAWS and use mainly the computer keyboard and not a computer mouse. Most teachers with knowledge in ICT only know how to teach ICT lesson practical by means of a mouse which was impossible on the part of the learner with visual impairments. In this line, Kelley (2009) guide's teachers for learners with visual impairments as Keyboard and mouse basically referred to as input devices. The keyboard allows the blind user to give the computer certain instructions while the mouse is more commonly used by a sighted user to access and accomplish different tasks on the computer. He further revealed that the mouse is also used to identify windows present information on the screen using Graphical User Interface (GUI), this allows users to typically do things by pointing at objects on the screen using a mouse which of course is not applicable in case of blind user situation and even though windows was designed to be used primarily with the mouse. Indeed, it may be found that keyboard users are more efficient at some tasks than mouse-users. In fact, almost everything in Windows can be done from the computer keyboard.

It was further found that lack of relevant ICT policy in Zambian education system especially on learners with visual impairments was also a major cause of such learners remaining more braille inclined than ICT. This is why Brosnan (2001) elucidates that ICT -enhanced accessibility in education requires clearly stated objectives, mobilization of resources and political commitment of the concerned bodies. Additionally, Warschauer (2003) revealed other challenging situation of ICT provision in education as the level of policy and planning are identification of stakeholders and harmonisation of efforts across different interest groups, the piloting of the chosen ICT -based model, and specification of existing sources of financing and the development of strategies for generating financial resources to support ICT use over the long term.

Unclear and inconsistent policy on curriculum implementation in Zambia has costed the provision of quality education, ICT inclusive. Take for instance; ICT in Zambia was introduced in 2013, however, the policy did not clearly spell out on how it should be implemented. It did not further indicate on how teachers will be prepared for the newly introduced subjects like ICT. Above all, learners with visual impairments were not even included in the plan of learning ICT

practically (MOESVTEE 2013). This was seen by the way the education system exempted pupils with visual impairments from ICT practical examinations. Therefore, it was confirmed that lack of relevant policy on ICT in Zambia caused learners with visual impairments to remain more braille inclined in accessing career information than through ICT.

In relation to UTAUT theory, is a construct that encourages technology users use technology facilities without challenges and this is facilitating conditions (Venkatesh et al. 2003). Facilitating conditions is the degree to which an individual believes that an organisational environment and technical infrastructure exists to support use of technology. This construct indeed explains reasons why pupils with visual impairments depended more on verbal in accessing career information than through ICT. As it may be known, without ICT contemporary infrastructure to house ICT facilities, it would be difficult to purchase such facilities for there could be nowhere to keep them safely and courteously. Therefore, if the organisation in this case school, did not have these facilities, the user cannot be motivated and be able to use ICT devices to his/ her advantage; and to the larger extent, to the advantage of the society where he/ she lives. Facilitating condition also covers trained teachers who are the ICT facilitators. Absents of trained teachers of ICT was indeed a valid reason for such pupils to depend more on word of mouth and to some extent short braille passages than ICT. Therefore, the findings on why pupils were more braille inclined in accessing career guidance information than through ICT were in agreement with UTAUT theory for it has also informed the study.

5.3. Accessibility of career guidance information through the use of ICT

The study found that learners with visual impairments did not access career information through ICT. Instead, learners accessed career information through word of mouth and to some extent through transcribed short passages. The findings indicated that learners depended on verbal career talks and at times on some interesting short career passages transcribed by career teachers through the help of specialist teachers due to afore elucidated reasons. It is further revealed that dependence on braille and word of mouth as the only medium of communication in the education of learners with visual impairments in Zambia had caused serious career choice limitations. Hence, almost every individual with visual impairments who happens to complete grade twelve in Zambia are confined to education as the only source of job. This was so because education

sector in Zambia was the only area with a few people who can read and emboss braille for easy communication with learners with visual impairments who only know braille as a medium of communication.

Although Chulumanda (2011), Makondo & Akakandelwa (2011), Mulenga (2011) and Mathatha (2013), report that individuals with visual impairments in Zambia are confined to teaching and telephone operating as a result of poor subject combination, lack of inspiration, lack of role models and poor educational provision. This study disputed these reports for it established that lack of access to career information through ICT was a primary and major reason of career choice limitations for such individuals. This is in line with what DBIZ (2016), concept note, presented to the Ministry of General Education. DBIZ's concept note revealed that a major reason why people with visual impairments are piled in the Ministry of education is because of lack of ICT skills. The same organisation defeating blindness in Zambia further revealed that only 0.05% of the total Zambian population can read and write braille. Additionally, only 1% of worldwide population has some knowledge to read and write braille, while 99% have no knowledge about braille. The implication is that, blind people who only use braille as a medium of communication can only communicate to 0.05% locally and 1% of people worldwide. Therefore, restricted from communicating with 99%. In this way, people with visual impairments are denied employment in other ministries and the private sector in Zambia and only employed under the Ministry of Education on the basis of anticipated communication problems.

This is further consistent with what AFB (2015) found. This organisation reports that, there are three primary issues facing individuals with visual impairments which are: access to career information, independent travel, and a lack of meaningful experiences. Nevertheless, the solution provided is that ICT can be used by individuals with visual impairments to compensate for these limitations. The same study also points that ICT through the acquired computer skills can enable learners living with visual impairments to achieve educational success and gain competitive employment by providing tools for increased independent access to information and for effective communication. In addition, Chung (2012), in his study, embarked on an experimental study in Georgia on how ICT helped in the learning of students with visual impairments. The study found that as learners used assistive technology, they were provided with more chances of learning and

accessing the world as well as career information. For example, the use of computers configured with screen reader software like JAWS, NVD, DS and a lot more others avails information to blind individuals and grants them a wider access to Activity for Daily Living (ADL). As a result, they obtain total independence required by everyone in life.

It was also established that braille caused limitation on career choice for blind individuals inn Zambia. This is so because only a few can accurately communicate using braille and braille literature is not available in all integrative schools. Additionally, braille has a lot of disadvantages which all lead to communication challenges than ICT. Therefore, ICT skills and facilities should be provided to all learners including those with visual impairments. This is further supported by Persons with Disability Act (PDA) (2012) Division 5 section 40 which urges all stakeholders to make available appropriate forms of assistance and support to persons with disabilities to ensure their access to information and communications technologies and systems, including the internet; and the design, development, production and distribution of accessible information and communications technologies and systems at an early stage, so that these technologies and systems become accessible at a minimum cost.

In line with what respondents indicated, the coming paragraphs clarifies the predicament caused by braille in the lives of people with visual impairments and qualifies the significance of ICT in career information access by the blind people. To start with, it's the bulkiness of braille. Braille is voluminous in nature; one standard ink print paper written in standard font 12, 1.5 line spacing and times new roman translated through an embosser to braille, it produces on average 4.5 braille sheets. As a result, a 100 paged text book in school will require the whole ream of braille paper to make one book for one pupil. Yet, one ream of ink print paper will produce five books for five sighted pupils. This is inconceivable because this voluminous nature of braille creates other related difficulties. For example, Because of its voluminous nature, braille pauses a challenge to storage. One needs to create huge spaces in order to store the braille books. Additionally, portability becomes another huge challenge. It is difficult to carry around such volumes of books from one place to another (DBIZ, 2016).

Furthermore, Mtonga & Musonda (2015) are in agreement with the result of this study by stating that exorbitant costs of braille equipment poses grave challenges in the area of career and

academic success among learners with visual impairments in Zambia. As it may be known, braille itself is expensive. The pieces of equipment that are required to produce braille are extremely expensive and they are not locally sold. For instance, a Perkins brailler: a machine intended to type braille costs about $4000 from the United States of America. Distance to the nearest source of the equipment creates an additional cost. This factor makes suppliers of braille equipment fatigued and unable to provide the best service to individuals with visual impairments in all Zambian integrative secondary schools.

As afore pointed, the other disadvantage of braille on people with visual impairments in Zambia is that it causes closed labour market. In Zambia, blind individuals complete their twelfth grade with sometimes good results. However, it is difficult for any blind person to enter the labour market anywhere apart from the Ministry of Education because of dependence on braille. DBIZ (2016) records that 65% of school leavers join teaching and the remaining 35%, they either join telephone operating or some miscellaneous neglected forms of employment. The companies, industries and ministries in Zambia are not keen at employing blind individuals because of the anticipated and expected fear of communication difficulties. In countries where braille does not dictate the welfare of blind people, the individuals have choices of their own career. Some blind people work as spokes personnel, politicians, counsellors, psychologist, clergy people, business people, receptionist, bankers, lawyers, human resource officers and so on. Such individuals heavily depend on the usage of ICT for the blind.

Furthermore, since schools for the blind were opened in Zambia, learners with visual impairments learn braille from grade one to twelve. In all earnest, the ministry of education has ensured at least some provision of teachers who are able to read and write braille. This means, whether at primary or secondary school levels, teachers are able to transcribe braille into ink-print. This is not the case at tertiary levels. Most institutions have no braille specialists to assist blind students in the acquisition of knowledge and reading materials. Later on, there are no transcribers of written braille into ink-print. As a result of this braille confusion, most young blind individuals cannot enter any of the good colleges with a variety of courses. Colleges of education have to some extent been the only possible solution because some colleges have had to look for lecturers to transcribe braille from either ink or braille itself. Some colleges have had to

use external individuals to help them with braille transcription. The 1998 TEVETA ACT of parliament obliged all trade colleges to reserve 10% of the enrolment for students with disabilities. However, no blind person has ever been enrolled under such an arrangement because of dependence on braille by the blind candidates.

Basing on the findings of the study, braille causes limitations to access information in the education and career for learners with visual impairments. Owing to the factors discussed above, braille creates a limitation in the access to information. The fact that braille is expensive, voluminous, read and written by only 0.05% locally and 1% of the world population, difficult to carry and store, blind people in Zambia cannot easily access information beyond braille. Unfortunately, it is difficult to provide greater information to blind persons because of issues already mentioned. This inability to access information by blind people is clearly a violation of the Zambian law which urges all stakeholders to provide information to blind individuals in accessible formats. These views are also replicated by the international conveners on access to information of people with visual impairments.

Therefore, the above analysis enlightens why the government of Zambia has been struggling to meet the demands of schools for the blind. During research, all visited integrative secondary schools, their one major cry and complaint received was that of inadequate teaching and learning materials, lack of braille paper and lack of braille text books. Lack of these important facilities for the acquisition of education explains why the failure rate is quite high among blind learners. The progression rate for blind learners is always compromised because of these factors detailed above. In a survey conducted by DBIZ (2013) on the availability of teaching and learning materials for blind learners in special schools, it was observed that in both primary and secondary schools, there were critical shortages of the most required items for the learning of blind pupils. These included: lack or inadequate braille paper, braille writing equipment, and braille text books.

Using ICT for blind persons is the only liberating tool. CRPD Article 9: 1), to which Zambia is a signatory urges all member states to provide ICT to persons with disabilities on equal basis with others and without any display of discrimination. The international community recognises the

value of ICT especially for blind individuals. It has generally been accepted worldwide that the usage of ICT positively transforms the lives of blind persons. In accordance with the CRPD, ICT enhances independent living among blind persons. Therefore, access to career information through ICT among individuals with visual impairments will reduce most of the braille related inadequacies and ultimately remove barriers to accessing information for blind individuals. For instance, using a computer fitted with speech software helps blind individual access information from a wider community. Mtonga (2015) reports that in Zambia more than 40% of the population can use ICT in one or another. Therefore, all the 40% Zambians are potentially communication friends in electronics. Using screen readers, blind people can access information through the internet which is now the biggest library in the world. Besides, access to internet would also enable blind individuals write and receive emails from people from all over the world. This is not possible with braille.

AFB, (2012), further points that soft copy books is possible with ICT. Using a computer fitted with speech, a blind person can read soft copy books. This is the most liberating experience of using screen readers. A blind person does not need to rely on a sighted friend to read for him/her important career and educational materials. Therefore, put career and school text books in soft copy and blind learners will read for themselves. The current situation obtaining on the ground is that since there are no braille text books, when it comes to reading of comprehension, the teacher or friends must read for blind learners. The blind individual must work hard to listen and almost memorise the whole passage in order to answer the questions. This is unfair and unacceptable in this modern age. Additionally, it is also undisputable fact that ICT for the blind widens research space for information. Despite the jargon of listening to others for the reading of the comprehension, a blind entirely depends on the teacher's dictation of braille notes. There is no research or reading beyond the presentation of the teacher. Yet, the sighted peers will out of choice learn from the teacher. Then, go out of class and reach out for any library for further reading on the lesson. Besides, they can read other books and they can use other sources of information to enrich their understanding of the subject matter. ICT enables a blind individual as well to store and read soft copy documents whenever they want.

In addition, using ICT, books can be scanned using the ordinary scanners. Simple software like AFR and Open Book (OB) can be used to translate the scanned material into readable documents for the blind. A soft copy document can easily be made available for many readers. Storage is also easy. In short, the many text books which are used by sighted learners can easily be scanned and translated into readable materials for the blind. Ultimately, these simple acts will increase access to information to blind persons. Furthermore, storage and portability of soft copy materials can never be a challenge for blind individuals. In case of school text books, schools can decide to store on memory sticks, virtual space like the drop-box, ICloud, CDs, on computers and so on.

Besides all these explanations above, computers are locally available and they are relatively cheaper than braille equipment. Blind individuals do not need any special computers as was the response from some respondents during data collection. Kelly (2008) argues that what is needed is the purchase or the download screen reader software's and installing them on any computers. Immediately, they can access information using the speaking computers.

In relation to the theory that guided the study, Venkatesh, et al. (2003), also mentioned by Davis, and Warshaw, 1992), is a construct's namely: performance expectancy. The theory reveals that performance expectancy is the degree to which the user expects that using the ICT will help him/her attains gains in job performance. It has five origin ideas namely: perceived usefulness, perceived ease of use, subjective norm, outcome expectations and extrinsic motivation. And so, extrinsic motivation is the perception that users want to perform an activity using ICT because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself, such as improved job performance, pay, or promotions. For sure the theory informed that that if Zambian education system was to embrace paradigm shift from braille as a medium of communication for blind learners to ICT, only then career choice will improve and excellent job performance will be observed in almost all workers with visual impairments. Job restriction also will surely come to an end because of liberating power of ICT.

5.4. Factors that Influenced Access to Career Guidance Through ICT

The last, but not the least objective was to establish the factors that might have influenced access to career information among learners with visual impairments. Thus, it was established that positive attitude from administrators, career guidance teachers, grade teachers and teachers were among the factors that influenced access to career information through ICT among the learners with visual impairments. Not only positive attitude, but as well as provision of ICT facilities, modern ICT infrastructure, trained teachers in ICT, ICT practical lessons, ICT practical examination and clear consistent policy were recognized too.

In relation to the findings of the study, were the two constructs from UTAUT theory that guided this study. The first is effort expectancy referring to the degree of ease of access associated with the use of ICT and social influence which covers the degree to which an individual perceives thee important others believe he/she should use the new system (ICT). This includes adequate provision of ICT facilities, environment in which the user with the intention of accessing ICT is found and how accommodative the infrastructure to house ICT facilities is. Further this means, attitude and the accommodative infrastructure to host ICT facilities are cardinal and without them, access to career information through ICT is deemed impossible. Facilitating conditions is the degree to which an individual believes that an organisational and technical infrastructure exists to support use of ICT. This construct also entails that the influence of facilitating conditions on usage is moderated by age and experience of the individual therefore, once the ICT facilities are available, infrastructure is accommodative and the attitude of responsible officers is positive, nothing is difficult on learners with visual impairments accessing career information through ICT. However, the most vivid hindrance to the education of persons with disabilities is negative attitude towards their education. If only responsible officers develop a positive attitude and take all pupils as their own clients destined for career success all will be well. Therefore, the findings of the study are in agreement with the theory on effort expectancy and facilitating conditions. Except on the area of moderated age as a factor that influences the use of ICT. This study did not find age to be one of the factors that might have an influence on career access through ICT.

Furthermore, Mandyata (2002) testifies that undesirable attitude towards education for learners with disabilities among teachers and key stakeholders have contributed to the failure of academic

success for learners with visual impairments in Zambia. In this vein, before developing educational activity for learners with visual impairments; stakeholders, in schools, district, provincial and national levels, need to examine their own attitudes towards persons with special educational needs. Additionally, all the stakeholders must be committed to the educational needs for learners with disabilities in such schools before conducting sensitisation to increase public awareness. The sensitisation should be aimed at making the public more informed, sensitive and responsive to the needs of such children in schools. Despite Moe's, [1996] commitment of making available all the assistive technology in place for learners with disabilities in the Zambian education system, it has not paid solemn attention by investing in the education of learners with visual impairments. It has relied much on donor support and well-wishers in providing educational material and services for learners with disabilities. This can be intensely observed by the attitude of those in control of national resources. During educational planning, matters concerning special education are always last or completely forgotten as resource distribution is taking place. Therefore, the impact of negative attitude is far inordinate than that of the impact of visual impairments itself.

It is essential therefore to emphasise that the success of any education system relies on knowledgeable and skilled manpower. In essence, access to career information through ICT demands that all teachers handling learners with visual impairments in ICT should be trained or given appropriate skills in ICT, so as to enhance the ability of career choice, career information sharing and broadens job opportunities for learners with visual impairments during secondary school time. In this vein, Tinio, (2002), recommends that teachers need professional development to gain skills with particular applications of ICT. Thus, any attempt of ICT integration in education should be equivalent to that of teachers' professional development. Additionally, Abner & Lahm 2002, Murphy, Hatton & Erickson 2008) conclude that University programs must address the lack of blindness and low vision specific ICT knowledge in teachers of students with visual impairments. They should further ensure that professional development opportunities are provided through partnerships among schools, districts, universities, organizations championing the affairs for learners with visual impairments and assistive technology vendors to ensure that professionals stay abreast of emerging technologies and have

the opportunity to become proficient in the use of the assistive technology that they will be teaching pupils with visual impairments.

MOESTEE (2013) attests that technical subjects lack materials, equipment and books. In many cases this has resulted in a theoretical and bookish approach to the practical subjects. And so, without opportunities for the hands on practical experiences or learning by doing kind of experience as the core business of ICT, it is impossible for the learners with visual impairments to benefit from ICT roles. Therefore, in the quest to resolving this, adequate ICT material supply to all integrative secondary school is highly needed. There is also the need of introducing ICT practical lessons and ICT practical examination to all learners with visual impairments for they greatly influence ICT skill acquisition. By so doing, access to career information is enhanced.

The other finding was on the absence of relevant policy on ICT. Clear and stable policy on ICT really can influence access to career information among learners with visual impairments. It is cardinal to recognize that policy in this case is the statement giving direction on how ICT facilities should be provided in schools, how ICT teachers should be professionally prepared to handle learners at hand in ICT, how should infrastructure be to reflect and fulfill the desire of government pertaining to ICT and how should lessons be conducted to maximise the benefit of the subject at hand. The implication is that without properly formulated clear and stable ICT policy, it is not possible to implement access to career information through ICT among learners with visual impairments. This is so because it will not be known where the ICT teachers and facilities will come from. It will further not identify what kind of material and lessons to be provided and so forth.

This is why Brosnan, (2001), promulgates that ICT -enhanced accessibility in education requires clearly stated objectives, mobilization of resources and political commitment of the concerned bodies. Additionally, it took the Schools Minister Jim Knight, at the 2008 BETT conference, DCSF, (2008), to give a policy direction on financial support for the Home Access Programme that is currently providing a computer and a year's broadband access for the poorest fifth of UK families. He clearly stated that there is a need to find a way to make access universal, or else it's not fair. More than a million children – and their families – have no access to a computer in the home. He further emphasised on the importance of a home computer equating it to be as

important as having a calculator or pencil case in every house. He therefore, guided the UK education system that the so-called 'digital divide' cannot be allowed to reinforce social and academic divisions. This is exactly what is needed in the Zambian context concerning learners with visual impairments' access to career information through ICT, or else the situation will keep on deteriorating leaving such learners in more restricted position of job opportunities.

5.5. Summary

This chapter discussed research findings of this study on access to career guidance through ICT among learners with visual impairments in selected secondary schools of Zambia. The discussion was done according to themes derived from the objectives of the study. Furthermore, the themes which emerged in between the objectives were clearly stated. Inferences were made in support to other studies in line with the topic. Necessary arguments were put forward. The next chapter will present the conclusion of the study and recommendations to policy makers and other academics.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1. Overview

The foregoing chapter looked at the discussion of findings pertaining to this study. Therefore, this chapter presents the conclusion of the study and the recommendations. Before the end of this chapter, slightly before references are suggestions for further studies.

6.2. Conclusion

This study reports that lack of exposure to ICT practical lessons and ICT practical examination were the key reasons identified for learners with visual impairment's dependence on word of mouth and on braille in accessing career information other than through ICT. It further found that inadequate modern infrastructure to house ICT facilities also seriously contributed to learners at hand being more braille inclined in accessing career information than through ICT. That is not all what the study established as reasons of learners with visual impairments being more braille inclined in accessing information than through ICT, but as well as lack of trained teachers, non-availability of ICT facilities and negative attitude from responsible officers towards such learners. If this was to be left unchecked, career development and management for such learners will substantially remain stagnant.

Furthermore, the study has confirmed that there was no access to career information through ICT among learners with visual impairments in the selected secondary schools of Zambia, due to aforementioned reasons. Thus, absolute no access to career information among learners at hand, has negatively affected their career choices. A situation that has left them with one stable kind of employment which is teaching and another unstable career which is telephone operating. Yet there are so many kinds of jobs available once ICT is embraced by the government through the Ministry of General Education, in the education of learners at hand. The study has further indicated that ICT facilities and services were easy to manage and far cheaper than braille facilities and services. ICT also has potentialities to widen chances for people with visual impairments' employment prospects and never restricted to Ministry of Education only as is the case now.

Finally the study has also established factors that would influence access to career information through ICT among learners with visual impairments. The study identified trained teachers, positive attitude towards learners with visual impairments, involvement in ICT practical lessons and examination has factors that would influence access to career information through ICT among learners at hand. That is not all, but as well as availability of modern infrastructure and availability of ICT facilities were all a source of influence to the learners at hand where access of career information through ICT was concerned. Once these factors were put into place, career development process for learners at hand will be like that of their non-disabled colleagues.

6.3. Recommendations

In the light of the discussed findings of this study, the following are recommendations:

I. The ministry of General Education should come up with a clear and stable policy to guide and compel every secondary school to start offering ICT practical lessons to learners with visual impairments.

II. Ministry of General Education should ensure that ECZ resolves its difficulties in ICT and visual impairment and start assessing learners with visual impairments in ICT practically so as to perfect and strengthen the ICT skills in them.

III. Ministry of General Education should supply assistive technology facilities to all integrative secondary schools for the learners with visual impairments start accessing career information through ICT. Such facilities include: computers, speech software and internet connectivity. By so doing, braille and word of mouth dependence in accessing career information will only be an alternative or by choice.

IV. Ministry of General education should train integrative secondary school teachers in ICT and deploy ICT teachers who can teach blind learners to ably use computers and other assistive technology independently. Conduct sensitisation to all integrative secondary schools so as to inculcate positive attitude in administrators and all teachers towards learners with visual impairments' learning of ICT practicals. By so doing, dependence on braille and word of mouth in career information access for learners at hand will be by choice.

V. Secondary schools should provide ICT modern infrastructures to house assistive technology supplied to them. In this way, every school going child will be equipped with ICT skills and stop depending on braille and word of mouth only. Consequently, career choice for everyone will be enhanced.

VI. Secondary schools should work hand in hand with Ministry of General Education to introduce ICT as a subject in all secondary schools in order to deal with ICT challenges encountered in integrative secondary schools.

6.4. Suggested Topics as Further research

Researchers should look out to a quantitative study so as to measure the extent to which ICT increases access to career information among learners with visual impairments. Further studies should also consider doing a survey in order to involve all integrative secondary schools throughout Zambia as a country. They should also conduct a comparative research so as to compare the benefits of ICT verses braille where career choice and job performance is concerned among individuals with visual impairments in Zambia.

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APPENDICES

Appendix A: Consent Form for Participants

THE TITLE OF RESEARCH: ACCESS TO CAREER GUIDANCE THROUGH ICT BY LEARNERS WITH VISUAL IMPAIRMENTS IN SELECTED SECONDARY SCHOOLS OF ZAMBIA

This consent form serves to give the respondents an understanding of the purpose of this research and subsequently the procedure to be followed when undertaking it. Further implications for their participation are explained. Thus, whosoever is participating in this study should make sure to read the information sheet carefully, or that it has been explained to them and to their satisfaction.

1. Description; this study is an academic research and likely to inform policy makers and educationists so as to improve the accessibility of career guidance information through ICT among learners with visual impairments. For validity and credibility's' purposes, the interview and group discussion will be recorded using an electronic voice recorder. Furthermore, the researcher is a University of Zambia student pursuing a Master's degree of Education in guidance and counselling. This research is one of the major requirements to complete the Programme.

2. Purpose: The researcher wishes to establish reasons why learners with visual impairments are more braille inclined in Accessing Career Guidance than through ICT in copper-belt Province, in Lusaka and in Luapula province.

3. Consent: Participation in this exercise is voluntary; therefore, the respondents do not need to participate, if they do not want to.

4. Confidentiality: All the data collected from this research will be treated with high confidentiality. Participants are assured of anonymity in this research.

5. Rights of Respondent: The rights of the respondents will be protected and respected. Participants are assured that they shall suffer no harm as a result of participating in this exercise. Participants are free to ask for clarifications at any point during the exercise and to inform the researcher if they feel uncomfortable about any procedure in the research and may withdraw if they wish.

DECLARATION OF CONSENT

I have read through the participant information sheet. I now consent voluntarily to be a participant in this project.

Participant's Name……

Signature…….

Date……

Appendix B: Interview Guide for Head Teachers

TITLE: ACCESS TO CAREER GUIDANCE THROUGH ICT BY LEARNERS WITH VISUAL IMPAIRMENTS IN SELECTED SECONDARY SCHOOLS OF ZAMBIA

Dear Respondent,

I'm a postgraduate student at the University of Zambia in the School of Education, Department of Educational psychology, sociology and special education. I am conducting a research on why learners with visual impairments are more braille inclined in Accessing Career Guidance than through ICT. The information that will be given will be used for academic purposes, at the same time; the researcher will ensure that the policy makers are aware about the findings of this study for the betterment of people with visual impairments in Zambia.

Your cooperation will be highly appreciated.

Instructions:

This interview guide has four sections.

Give your honest opinion to all questions in this interview guide.

In your response be as truthful as possible.

SECTION (A) RESPONDENT'S PROFILE:

1. What is the name of your school?
2. What is your post in school?
3. What is your gender?

SECTION (B) REASONS FOR DEPENDING ON BRAILLE IN Accessing Career Guidance INFORMATION AMONG LEARNERS WITH VISUAL IMPAIRMENTS

1. Why do your pupils remain braille inclined in Accessing Career Guidance information than through ICT ?
2. Do you agree with the assertion that Braille can be a limiting factor to your pupils' smooth career development and job management in Zambia?

3. Basing on your own knowledge, which one is more advantageous between Braille and ICT to your pupils in terms of information sharing?

SECTION (C) ACCESSIBILITY OF CAREER GUIDANCE THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY:

1. How accessible career guidance information through ICT is to your pupils?
2. What do you know about ICT (ICT)?
3. What relationship is there between career guidance and ICT (ICT)?
4. How frequent do your pupils access ICT facilities in this school? Kindly state clearly
5. Do you think ICT (ICT) can improve your pupils' career guidance information access and job performance? If so, give reasons
6. With career guidance available, what job do your pupils intend to have after school?
7. How do they develop their career?
8. Apart from teaching and telephone operating, what other jobs can your pupils have after school? Kindly outline them
9. Do your pupils know about these jobs you have just outlined?

SECTION (D) FACTORS THAT MIGHT HAVE INFLUENCED ACCESS TO CAREER GUIDANCE THROUGH ICT AMONG LEARNERS WITH VISUAL IMPAIRMENTS

1. What factors would influence your pupils' access to career guidance information through ICT ?
2. In order for your pupils to access career information through ICT without challenges, what help do you need from:

I. Government,
II. School administrators,
III. Career guidance teachers
IV. Grade teachers

Thank you, for participating in this project. God bless you

Appendix C: Interview Guide for Career Guidance Teachers

TITLE: ACCESS TO CAREER GUIDANCE THROUGH ICT BY LEARNERS WITH VISUAL IMPAIRMENTS IN SELECTED SECONDARY SCHOOLS OF ZAMBIA

Dear Respondent,

I'm a postgraduate student at the University of Zambia in the School of Education, Department of Educational psychology, sociology and special education. I am conducting a research on why learners with visual impairments are more braille inclined in Accessing Career Guidance than through ICT. The information that will be given will be used for academic purposes, at the same time; the researcher will ensure that the policy makers are aware about the findings of this study for the betterment of people with visual impairments in Zambia.

Your cooperation is highly appreciated.

Instructions:

This interview guide has four sections.

Give your honest opinion to all questions in this interview guide.

In your response be as truthful as possible.

SECTION (A) RESPONDENT'S PROFILE:

1. What is the name of your school?
2. What is your post in school?
3. What is your gender?

SECTION (B) REASONS FOR DEPENDING ON BRAILLE IN Accessing Career Guidance

INFORMATION AMONG LEARNERS WITH VISUAL IMPAIRMENTS

1. Why do your pupils remain braille inclined in Accessing Career Guidance information than through ICT ?

2. Do you agree with the assertion that Braille can be a limiting factor to your pupils' smooth career development and job management in Zambia?

3. Basing on your own knowledge, which one is more advantageous between Braille and ICT to your pupils in terms of information sharing?

SECTION (C) ACCESSIBILITY OF CAREER GUIDANCE THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY:

1. How accessible career guidance information through ICT is to your pupils?
2. What do you know about ICT (ICT)?
3. What relationship is there between career guidance and ICT (ICT)?
4. How frequent do your pupils access ICT facilities in this school? Kindly state clearly
5. Do you think ICT (ICT) can improve your pupils' career guidance information access and job performance? If so, give reasons
6. With career guidance available, what job do your pupils intend to have after school?
7. How do they develop their career?
8. Apart from teaching and telephone operating, what other jobs can your pupils have after school? Kindly outline them
9. Do your pupils know about these jobs you have just outlined?

SECTION (D) FACTORS THAT MIGHT HAVE INFLUENCED ACCESS TO CAREER GUIDANCE THROUGH ICT AMONG LEARNERS WITH VISUAL IMPAIRMENTS

1. What factors would influence your pupils' access to career guidance information through ICT ?
2. In order for your pupils to access career information through ICT without challenges, what help do you need from:

I. Government,
II. School administrators,
III. Career guidance teachers
IV. Grade teachers

Thank you, for participating in this project. God bless you

Appendix D: Interview Guide for Grade Teachers

TITLE: ACCESS TO CAREER GUIDANCE THROUGH ICT BY LEARNERS WITH VISUAL IMPAIRMENTS IN SELECTED SECONDARY SCHOOLS OF ZAMBIA

Dear Respondent,

I'm a postgraduate student at the University of Zambia in the School of Education, Department of Educational psychology, sociology and special education. I am conducting a research on why learners with visual impairments are more braille inclined in Accessing Career Guidance than through ICT. The information that will be given will be used for academic purposes, at the same time; the researcher will ensure that the policy makers are aware about the findings of this study for the betterment of people with visual impairments in Zambia.

Your cooperation is highly appreciated

Instructions:

This interview guide has four sections.

Give your honest opinion to all questions in this interview guide.

In your response be as truthful as possible.

SECTION (A) RESPONDENT'S PROFILE:

1. What is the name of your school?
2. What is your post in school?
3. What is your gender?

SECTION (B) REASONS FOR DEPENDING ON BRAILLE IN Accessing Career Guidance INFORMATION AMONG LEARNERS WITH VISUAL IMPAIRMENTS

1. Why do your pupils remain braille inclined in Accessing Career Guidance information than through ICT ?
2. Do you agree with the assertion that Braille can be a limiting factor to your pupils' smooth career development and job management in Zambia?

3. Basing on your own knowledge, which one is more advantageous between Braille and ICT to your pupils in terms of information sharing?

SECTION (B) ACCESSIBILITY OF CAREER GUIDANCE THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY:

1. How accessible career guidance information through ICT is to your pupils?
2. What do you know about ICT (ICT)?
3. What relationship is there between career guidance and ICT (ICT)?
4. How frequent do your pupils access ICT facilities in this school? Kindly state clearly
5. Do you think ICT (ICT) can improve your pupils' career guidance information access and job performance? If so, give reasons
6. With career guidance available, what job do your pupils intend to have after school?
7. How do they develop their career?
8. Apart from teaching and telephone operating, what other jobs can your pupils have after school? Kindly outline them
8. Do your pupils know about these jobs you have outlined? If so, how did they know about these jobs?

SECTION (D) FACTORS THAT MIGHT HAVE INFLUENCED ACCESS TO CAREER GUIDANCE THROUGH ICT AMONG LEARNERS WITH VISUAL IMPAIRMENTS

1. What factors would influence your pupils' access to career guidance information through ICT ?
2. In order for your pupils to access career information through ICT without challenges, what help do you need from:

I. Government,
II. School administrators,
III. Career guidance teachers
IV. Grade teachers

Thank you, for participating in this project. God bless you

Appendix E: Interview Guide for Pupils with Visual Impairments

TITLE:

ACCESS TO CAREER GUIDANCE THROUGH ICT BY LEARNERS WITH VISUAL IMPAIRMENTS IN SELECTED SECONDARY SCHOOL OF ZAMBIA

Dear Respondent,

I'm a postgraduate student in the School of Education, Department of Educational psychology, sociology and special education. I am conducting a research on why learners with visual impairments are more braille inclined in Accessing Career Guidance than through ICT. The information that will be given will be used for academic purposes, at the same time; the researcher will ensure that the policy makers are aware about the findings of this study for the betterment of people with visual impairments in Zambia.

Your cooperation is highly appreciated.

Instructions:

This interview guide has four sections.

Give your honest opinion to all questions in this interview guide.

In your response be as truthful as possible.

SECTION (A) RESPONDENT'S PROFILE:

1. What is the name of your school?
2. What grade are you?
3. What is your gender?
4. What type of visual impairments are you with? Kindly choose from the list below:

Albinism

Partially blind

Totally blind

SECTION (B) REASONS FOR DEPENDING ON BRAILLE IN Accessing Career Guidance INFORMATION AMONG LEARNERS WITH VISUAL IMPAIRMENTS

1. Why are you more braille inclined in Accessing Career Guidance information than through ICT ?
2. Do you agree with the assertion that Braille can be a limiting factor to your smooth career development and job management in Zambia?
3. Basing on your own knowledge, which one is more advantageous between Braille and ICT to you in terms of information sharing?

SECTION (C) ACCESSIBILITY OF CAREER GUIDANCE THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY:

1. How accessible career guidance information through ICT is to you?
2. What relationship is there between career guidance and ICT (ICT)?
3. How frequent do you access ICT facilities in this school? Kindly state clearly
4. Do you think ICT (ICT) can improve your career guidance information access and job performance? If so, give reasons
5. What job do you intend to have after school?
6. How do you develop your career?
7. Apart from teaching and telephone operating, what other jobs can you have? Outline some of them
8. How did you know about these jobs you have just outlined?

SECTION (D) FACTORS THAT MIGHT HAVE INFLUENCED ACCESS TO CAREER GUIDANCE THROUGH ICT AMONG LEARNERS WITH VISUAL IMPAIRMENTS

1. What factors would influence your access to career guidance information through ICT ?
2. In order for you to access career information through ICT without challenges, what help do you need from:

I. Government,
II. School administrators,
III. Career guidance teachers
IV. Grade teachers

Thank you, for participating in this project. God bless yo

Appendix F: Focus Group Discussion for Pupils with Visual Impairments

TITLE: ACCESS TO CAREER GUIDANCE THROUGH ICT BY LEARNERS WITH VISUAL IMPAIRMENTS IN SELECTED SECONDARY SCHOOLS OF ZAMBIA

Dear Respondent,

I'm a postgraduate student at the University of Zambia in the School of Education, Department of Educational psychology, sociology and special education. I am conducting a research on why learners with visual impairments are more braille inclined in Accessing Career Guidance than through ICT. The information that will be given will be used for academic purposes, at the same time; the researcher will ensure that the policy makers are aware about the findings of this study for the betterment of people with visual impairments in Zambia.

Your cooperation is highly appreciated.

Instructions:

This focus group discussion has four sections.

Give your honest opinion to all questions in this interview guide.

In your response be as truthful as possible.

SECTION (A) RESPONDENT'S PROFILE:

1. What is the name of your school?
2. What grade are you?
3. What is your gender?
4. What type of visual impairments are you with? Kindly choose from the list below:

Albinism

Partially blind

Totally blind

SECTION (B) REASONS FOR DEPENDING ON BRAILLE IN Accessing Career Guidance INFORMATION

1. Why are you more braille inclined in Accessing Career Guidance information than through ICT ? Kindly discuss
2. Do you agree with the assertion that Braille can be a limiting factor to your smooth career development and job management in Zambia? Give reasons to your answer
3. Basing on your own knowledge, which one is more advantageous between Braille and ICT to you in terms of information sharing and why do you say so? Give reasons

SECTION (B) ACCESSIBILITY OF CAREER GUIDANCE THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY:

1. How accessible career guidance information through ICT is to you?
2. What relationship is there between career guidance and ICT (ICT)?
3. How frequent do you access ICT facilities in this school? Kindly state clearly
4. Do you think ICT (ICT) can improve your career guidance information access and job performance? If so, give reasons
5. What job do you intend to have after school?
6. How do you develop your career?
7. Apart from teaching and telephone operating, what other jobs can you have? Outline some of them
8. How did you know about these jobs you have just outlined?

SECTION (D) FACTORS THAT MIGHT HAVE INFLUENCED ACCESS TO CAREER GUIDANCE THROUGH ICT AMONG LEARNERS WITH VISUAL IMPAIRMENTS

1. What factors would influence your access to career guidance information through ICT ?
2. In order for you to access career information through ICT without challenges, what help do you need from:

I. Government,
II. School administrators,
III. Career guidance teachers
IV. Grade teachers

Thank you, for participating in this project. God bless you