



Access to Career Guidance through Information and Communication Technology by Learners with Visual Impairment in Selected Secondary Schools of Zambia

Chitalu Thomas Chipili

*Mano Primary School
Mufulira
Zambia*

chitaluchips@gmail.com

Abstract - The study explored why learners with visual impairment in selected secondary schools of Zambia were more braille inclined in accessing career guidance information than through ICT. Key among the objectives that guided the study was to identify why learners with visual impairment were more braille inclined in accessing career guidance than through ICT. UTAUT theory guided this study. A case study design was used in presenting and discussing the findings. Population was all pupils with visual impairment and their teachers in selected secondary schools in Zambia, while the sample size was fifty-two (52) segmented as forty (40) pupils, four (4) head teachers, four (4) career guidance teachers and four (4) grade teachers. The study found that due to inadequate or non-availability of ICT facilities, learners with visual impairment did not access career information through ICT. In addition, inadequate ICT trained teachers and ICT unclear policy 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 did not participate in ICT practical lessons and examinations consequently, restricted in their career choices. The study therefore, recommended that the Ministry of General Education should supply ICT facilities, train teachers in ICT, formulate clear policy on ICT for learners with visual impairment and ECZ should introduce practical examination in ICT.

Keywords: *Career Guidance, Visual Impairment, Schools, Zambia*

I. INTRODUCTION

Today's society shows the ever-growing computer-centric lifestyle, which includes the rapid influx of computers commonly referred to as information and communication technology ICT. 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 UNESCO takes a holistic and comprehensive approach to promoting ICT in education. In seeking to promote ICT to some extent the UNESCO's Inter-sectorial Platform for ICT in education through the joint work of three of its sectors: focuses on

Dr. Daniel Ndhlovu¹, Francis Simui²

*Institute of Distance Education
University of Zambia
Box 32379, Lusaka, Zambia*

ndhlovu2010@gmail.com¹, francis.simui@unza.zm²

Communication & Information, Education and Science [1]. However, access to ICT, inclusion in education system and quality academics among persons with visual impairment are among the main challenges that still remain to be addressed [2].

Statistically, over three billion people have 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 [3], 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 [4], 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, and Dent [5], also affirms that in the relatively time that ICT has been available to 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 of career guidance and counselling.

Despite the substantial progress made in accessing career guidance information through ICT among the sighted learners worldwide, Zambia inclusive, learners with visual impairment

in Zambia have remained more braille inclined in accessing career information. Nevertheless, it is not yet known why learners with visual impairment have remained more braille inclined in accessing career guidance information than through ICT. Existence of the knowledge gap was supported by a study done by Mtonga and Musonda [6] 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. This is consistent with Simui, Kasonde-Ngandu and Nyaruwata's [7] study findings on ICTs as enablers to academic success of learners with visual impairments in Sub-Saharan Africa. In their study, it was observed that learners with visual impairments actively applied ICTs such as typewriters, cell phones, elevators with speech facility, computers, jaws, e-mails and talking watches among others for academic purposes. However, the challenges learners with visual impairment face in accessing career guidance through ICT in Zambia are not known. Yet Sahfi, Zhou, Smith & Kelley, [8] 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 reader) and hardware (computers) are availed to them.

It suffices to point that ICT is also needed by people 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 [9]. For example, reading hard copies of career related information is impossible for 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 forgetting relatives, by using the electronic mail, messenger, call conference or video conference, Facebook, WhatsApp, E-books. Making access to ICT by learners with visual impairments would further create rapport with their educators. These are a few examples on how ICT can create a great impact in the lives of learners with visual impairments. Unfortunately, most students with visual impairments in selected secondary schools in Zambia were found to have difficulties in accessing career information through ICT for they were more braille inclined in accessing required information. 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 research was conducted so as to come up with reasons for learners with visual impairment 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 [10], learners with visual impairment still remained more braille inclined in accessing career guidance information than through ICT. Therefore, there was need to investigate why learners with visual impairment were more braille inclined in accessing career guidance than through ICT in selected secondary schools of Zambia.

A. *Statement of the problem*

Studies have shown that ICT facilitates quick access to career guidance services [11]. Despite ICT being able to promote swift access to career guidance among learners, learners with visual impairment in Zambia's learning institutions still remained more braille inclined in accessing career guidance information than through ICT [12]. It was not known why learners with visual impairment were more braille inclined in accessing career guidance than through information and communication technology in Zambia. This study sought to identify why learners with visual impairment were more braille inclined in accessing career information than through ICT in selected secondary schools of Zambia.

B. *Purpose of the Study*

The purpose of this study was to identify reasons for learners with visual impairment being more braille inclined in accessing career guidance than through ICT in selected secondary schools of Zambia.

C. *Study Objectives*

The following specific objectives guided the study:

- i). Identify reasons learners with visual impairment had for being braille inclined in accessing career guidance than through ICT.
- ii). Explore how accessible career guidance information through ICT was to learners with visual impairment.
- iii). Establish factors that would influence access to career guidance through ICT among learners with visual impairments.

D. *Significance of the Study*

It was hoped that findings from this study would enlighten policy makers in education, administrators in special and inclusive institutions on why learners with visual impairment were more braille inclined in accessing career guidance information than through ICT in Zambian selected secondary schools. Above all, the whole of this study has added knowledge to this field. This is so because it has created the basis of more research for other researchers.

II. THEORETICAL FRAMEWORK

This study was guided by the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh *et*

al. [13]. 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. Performance expectancy is the degree to which the user expects that using the information and communication technology will help him/her attains gains in job performance. It has five original 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 [14]. 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 organizational 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 [15].

Basing on this theory, the aforementioned constructs influence the usage of information and communication technology at societal, organizational and individual levels. It is assumed that, the pointed constructs are clearly applicable in access to career guidance through ICT among learners with visual impairment.

III. METHODOLOGY

The study followed a qualitative approach using a case study design. A case study design was adopted for this study because it enabled the researcher to adequately investigate the topic under review through the use of unstructured interviews and focus group interviews which gave a full account of the state of affairs as it actually existed on the ground. Therefore through this design, the researcher was able to identify reasons learners with visual impairment remained more braille inclined in accessing career guidance information than through ICT in selected secondary schools of Zambia. Just as [16] promulgate, a case study seeks to describe a unit in detail, in context and holistically. In essence, the researcher chose a case study design mainly because the study focused on a relatively small sample of the population.

A. Target Population

This study targeted all learners with visual impairment, grade teachers, all career guidance teachers and head teachers of Munali boys' secondary school, Munali girls' secondary school, both of Lusaka province; Ndola Lions Special School of Copper-belt province and ST. Mary's girls' secondary school of Luapula province. These were targeted because they were deemed to be in a better position to provide insights on the topic under research.

Therefore, the sample for this study was fifty-two respondents, segmented as: forty pupils with visual impairment, four grade teachers of learners with visual impairment, four career guidance teachers and four head teachers. Thus, ten learners were gotten from Munali Boys, ten from Munali Girls, ten from Ndola Lions Special School and ten from St. Mary's Girls 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 tabulated schools.

In most cases, learners with visual impairment are not many in these schools [17] Thus, having this number of pupils was inevitable with this study. In addition, learners with visual impairment 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 information than through ICT and answered on how accessible career guidance information through ICT was to 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 for proper data representation and convenience purposes on the part of the researcher.

B. Sampling Procedure

This study employed non-probability sampling, to be specific, purposive sampling procedure was utilized. It was mainly chosen because learners with visual impairment were quite few in those schools. While for head teacher number, it was because there was only one head teacher and one career guidance teacher in each school. On the part of the grade teacher, purposive sampling was used because only a class that had learners with visual impairment was considered and a grade teacher for that class was picked. That is why only one grade teacher was chosen. This is in line with what Biklen and Bogden [18] who disseminated 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.

C. Research Instruments

Interview schedule was used to generate data from sixteen learners with visual impairment (four from each school), four grade teachers (one from each school), four career guidance teachers (one from each school) and four head teachers (one from each school). These respondents were interviewed at different times.

The other tool used in this study was a focus group discussion guide. Focus group discussions were held with twenty-four pupils (six from each of the aforementioned schools). This helped to verify truth of the data generated through interviews.

D. Validity and Reliability

In order to enhance the validity and reliability of the research instruments in this study, a pilot study was conducted at Mano primary school in Mufulira District in order to test the instruments in terms of clarity of the questions as well as their objectivity. Thereafter, necessary adjustments were made to all the research tools to make them more effective and ready to be administered in the field.

The study further used triangulation to strengthen the depth, validity and reliability of its results. Keeves [19] 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.

E. Data analysis

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.

F. 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. Therefore, in ensuring that confidentiality was upheld, 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.

IV. FINDINGS

All the findings of the study on access to career guidance through information and communication technology among learners with visual impairment in selected secondary schools of Zambia were presented in line with research objectives. For the sake of logical presentation of the findings, tables and verbatives were used to make the work more easily understandable.

A. Why More Braille Inclined than ICT

In order to appreciate the views of pupils, head teachers, career guidance teachers and grade teachers in selected secondary schools of Zambia on why learners with visual impaired were more braille inclined in accessing career

guidance than through ICT, the researcher subjected all the participants to variety of questions to identify reasons for learners' dependence on braille, below were their responses:

“Teku temwafye ukukana bonfya ama computer, mukukwata ilyashi lya pamibombe. 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 pupils from school III (Source Fieldwork, March, 2017).

“We do not have special computers except Perkins brailers. Hence, making it hard for us to access career information from internet. There is no policy forcing our teachers to teach us how to use computers to access needed information” (Source Fieldwork, March, 2017).

“It is a well-known fact that learners with visual impairment 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 media of communication for them than braille at the moment” Said the head from school IV (Source Fieldwork, March, 2017)

Head teacher school III stated “in my case here, ZICTA 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 with JAWS” (Source Fieldwork March, 2017).

Another head teacher from school I specified that “we have no special ICT facilities for them in school. However, we provide braille technology to them” (Source Fieldwork March, 2017).

Head teacher from school II, said “There is no ICT policy compelling us to start providing career guidance through ICT (Source Fieldwork, March, 2017).

Lack of trained teachers was also made-allusion to as a major cause of braille dependence.

One career teacher from school II 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.” (Source Fieldwork, March, 2017).

“One obvious reason is that braille is the only medium of communication prescribed for them in Zambia so far” said one grade teacher,” (source: fieldwork March, 2017).

Another grade teacher indicated that lack of knowledge and support from the school administration had led to lack of ICT facilities in their school. And so, without ICT facilities, it becomes almost impossible in equipping learners with ICT skills.

“Since there is no ICT examination for them, nothing is there to encourage teachers to prepare them for examinations.” Said another grade teacher from school II, (Source Fieldwork, March, 2017).

B. Accessibility of Career Guidance via ICT

In order to explore how accessible career guidance information through ICT was to learners with visual impairment in selected secondary schools of Zambia, respondents were subjected to various questions during focus group discussions and interviews as shown in the table below:

TABLE I
Accessibility of Career Guidance via ICT

Type of Respondents	School	Number of Respondents	Accessibility of Career Guidance via ICT
1). Head teacher	I, II, III, & IV	4	Not accessible
2). Career Guidance Teachers	I, II, III, & IV	4	Not accessible
3). Grade Teachers	I, II, III, & IV	4	Not accessible
4). Learners	I, II, III, & IV	forty	Not accessible

(Source: Fieldwork, Mark, 2017)

As seen from the above table, ten pupils, one head teacher, one career guidance teacher and one grade teacher were selected from each secondary school. Therefore, the total number came to forty pupils, four head teachers, four career guidance teachers and four grade teachers who participated in the study. Thus, the table presented above reviews that all respondents from school I, II, III and IV indicated that career guidance through information and communication technology among learners was not available.

C. Factors that Influence Access to Career Guidance via ICT

To establish factors that would influence access to career guidance through ICT among learners with visual impairment in selected secondary schools of Zambia, respondents were subjected to various questions during focus group discussions and in-depth interviews. Therefore, findings were as follows:

“Materials such as computers Amajaws (Speech software such as JAWS) and internet are the things needed for us to start accessing information freely.” Said a pupil from school II (Source: fieldwork, March, 2017).

Pupils from school I lamented by saying: “We learn ICT as a subject, but it ends up 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 paper. This in itself hinders our acquisition of ICT practicals that would enable us access career information easily.” (Source: fieldwork, March, 2017)

A lot more other pupils quoted the English saying that states “practice makes perfect” alluding to the involvement in ICT practical lesson and examinations.

The head teacher from school I indicated that “Materials such as computers, special software and internet facilities are quite important for learners with visual impairment to access career information. If these are not available as the case of our school today, it is impossible for our learners to have an access to career information through that media.” (Source: fieldwork, March, 2017).

The head teacher from school III pointed out that trained teachers in this field are very essential. “Remember this area of curriculum is very new and we have never had teachers with conversational knowledge in this area. Therefore, for its success, trained teachers are highly needed.” (Source: Fieldwork, March, 2017).

If special computers were available for them in school, practical lesson and finally practical examination would greatly influences access to information. ICT is not a subject that one can leant successfully by theory only.

Career guidance teachers specified that: “ICT practical lessons and examinations encourages the learner actively. By so doing, a skill in ICT is acquired by learners themselves. And so, accessing career information can become a reality.” (Source: fieldwork, March, 2017).

Others indicated that material such as ICT text books, special software, internet, infrastructure, constant supply of electricity and computer provision as factors that can enable their learners access career information independently.

Some other career teachers hinted that stable policy formulation and implementation cannot be over emphasised in career information through ICT among learners.

Grade teachers also said: “Materials such as computers, special software and internet facilities are pretty important for learners with visual impairment to access career information. If these are not available as the case is at this school, it is impossible for learners to have an access to career information through ICT.” (Source: fieldwork, March, 2017).

“This part of curriculum is quite new and we have never had teachers with conversational knowledge in this area. Therefore, for its success, trained teachers are highly needed.” Said one grade teacher from school III (Source: Fieldwork, March, 2017).

Almost each and every grade teacher indicated that ICT practical lesson and practical examination greatly influences access to information. ICT is not the subject that would be successfully learnt theoretically. Therefore, it requires learning by doing.

Trying to find out the kind of help grade teachers, career guidance teachers and head teachers may need from government and from each other for pupils to access career guidance without any problem; their responses are in the table below:

TABLE II
Type of Help Desired via ICT

Provider of Help	Type of Help	Comment
Government	(i) Should provide computers, pearl camera readers, special software and internet. (ii) Should Employ trained teachers, build modern computer Labs. (iii) Should involve every learner in ICT practical lessons and examination. (iv) Should formulate	The tabulated items are ICT facilities visually impaired need for them to meaningfully participate in the world of ICT. That is one of the major helps they

	consistent policy that addresses ICT challenges currently encountered.	need from the government as officers.
Career guidance teachers	(i) Should be well informed on the provision of career information by using ICT equipment's. (ii) Should work hand in hand with ICT teachers in ensuring ICT skills is a success. (iii) Should have a positive attitude and embrace every learner regardless of the disability. (iv) Should be alert on employment available and special needs in the area of career guidance verses ICT for learners with visual impairment. (v) Should advocate for provision of career information by the use of ICT more than braille and word of mouth (vi) Should be fully aware of career information accessibility challenges learners with visual impairment face and a way of addressing them.	They pointed this in line with problem they face in providing ICT to their pupils. Therefore, if all were dealt with, career information access through ICT can be a success in their schools.
Grade teachers	They should be of: positive attitudes, Knowledge in ICT, Willingness to help pupils in ICT lessons, Encouragement to pupils in ICT	This is the kind of help pupils need from their teachers
Head teachers	(i) Lobby for teacher from the DEBS offices, (ii) Ensure that teachers are teaching ICT to VI pupils. (iii) Facilitate material provision at school level, (iv) Be with positive attitude towards VI learners. (v) Source for funds for ICT facilities.	Head teachers are key in ICT lessons to VI pupils

(Source: Fieldwork, Mark, 2017)

V. DISCUSSION OF FINDINGS

A. Reasons Learners were Braille

The first objective was to identify reasons for learners with visual impairment were more braille inclined in accessing career guidance than through ICT. Therefore, the study identified lack of exposure to information and communication technology (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 impairment being braille inclined in

accessing career information than through ICT. It is a well-known fact that without 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 is in line with Venkatesh et al. [20], one of the founders of UTAUT theory who says; one of the encouraging reasons for technology users is facilitating conditions. Facilitating conditions is the degree to which an individual believes that an organizational environment and technical infrastructure exists to support use of technology. This construct is surely applicable to learners with visual impairment's reasons of depending 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, cannot 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. Therefore, this is a predicament in which learners with visual impairment in selected secondary schools of Zambia were in.

It is a well-known fact that school is an enabling environment for knowledge and skill acquisition (Ministry of Education, Science, Vocational Training and Early Education [21]. However, without modern ICT infrastructure to house ICT facilities, non-availability of salient ICT material to use during teaching and learning, no trained teachers to facilitate ICT learning and lack of clear and consistent policy; it is impossible practically to expose learners to ICT knowledge and skills. Therefore, the outcome is verbal dependence in accessing career information as it is in most Zambian integrative secondary schools. as indicated earlier, learners with visual impairment 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 other schools and lack of more other ICT facilities such as internet connectivity and a lot of other ICT devices.

Hence, there is a need of supplying speech software's such as Job Access With Speech (JAWS), NVD, Dauphine pen screen (DPS) and Thunder Screen Reader (TSR) to such schools already with computers. Not only speech software's, there is 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 impairment take part in ICT practical lessons and practical examinations. Consequently, 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 impairment 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 impairment in ICT are available and the policy to compel school administrators and teachers to provide ICT practical lessons and conduct practical assessment to learners with visual impairment, only then learners with visual impairment will stop depending on verbal career talks and being more braille inclined in accessing career information and join the world of ICT. It is also predictable that once these facilities are available to such learners, they will no longer be confined to teaching and telephone operating as the case is today in Zambia. This is so because, they will be able to take all important subjects, access career information that will lead them to choose their own jobs at will.

B. Accessibility of Career Guidance via ICT

The other objective was to explore how accessible career guidance information through ICT was to learners with visual impairment in selected secondary schools of Zambia, and so, the study further found that learners with visual impairment did not access career information through ICT. Instead, they accessed career information through word of mouth and to some extent through transcribed short passages. The afore presented findings indicate 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 reviewed that dependence on braille and word of mouth as the only medium of communication in the education of learners with visual impairment in Zambia has caused serious career choice limitations. Hence, almost every individual with visual impairment who happens to complete grade twelve in Zambia are confined to education as the only source of job. This is so because education sector in Zambia is the only area with a few people who can read and emboss braille for easy communication with learners with visual impairment who only know braille as a medium of communication.

Although Chulumanda [22] Makondo and Akakandelwa [23] Mulenga [24] and Mathatha [25], report that individuals with visual impairment 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 is a primary and major reason of career choice limitations for such individuals. This is in line with what DBZ [26], concept note, presented to the Ministry of General Education also reports. DBZ's concept note reviewed that a major reason why people with visual impairment are piled in the Ministry of education is because of lack of ICT skills. The same organisation defeating blindness in Zambia not by medical means, but through ICT liberating power further reviewed 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 impairment 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 in agreement with the UTAUT theory guided this study by Venkatesh *et al.* [27] also mentioned by [28], is one construct's namely: performance expectancy. The theory reviews that performance expectancy is the degree to which the user expects that using the information and communication technology will help him/her attain 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, perceived usefulness, perceived ease of use, subjective norm, outcome expectations are examples of intrinsic motivation. For sure if Zambian education system embraces 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 seen in almost all workers with visual impairment. Additionally, job restriction will surely come to an end because of liberating power of ICT.

C. Factors that Influenced Access to Career Guidance via ICT

The last, but not the least objective was to establish the factors that would influence access to career information among learners with visual impairment. 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 at hand. 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 line with the aforementioned findings, are the other two constructs from UTAUT theory by Venkatesh *et al.* [29] namely the effort expectancy and facilitating conditions. Effort expectancy refers to the degree of ease access associated with the use of ICT and social influence which covers the degree to which an individual perceives that 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. This further mean, 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 organizational 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 impairment 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 positive and take all pupils as their own clients destined for career success all will be well.

VI. CONCLUSION

This study found that inadequate modern infrastructure, lack of trained teachers, non-availability of ICT facilities and negative attitude from responsible officers towards such learners were the major reasons for them being braille inclined in accessing career guidance information than through ICT. Furthermore, the study confirmed that there is no access to career information among learners with visual impairment in the selected secondary schools of Zambia, due to aforementioned reasons. The study has also established trained teachers, positive attitude towards learners with visual impairment, involvement in ICT practical lessons and examination, availability of modern infrastructure and availability of ICT facilities has factors that would influence access to career information through ICT among learners at hand.

Recommendations

Therefore, the following were recommendations. The ministry of general education should:

- i). Come up with the clear and stable policy to guide secondary schools provide career information through ICT among learners with visual impairment.
- ii). ensure that ECZ resolve its difficulties and start assessing learners with visual impairment in ICT practically
- iii). supply assistive technology facilities to all secondary schools
- iv). provide ICT modern infrastructures to all secondary schools
- v). Train secondary school teachers in ICT to handle learners with visual impairment
- vi). Conduct sensitisation to all-inclusive secondary schools so as to inculcate positive attitude in teachers towards learners with visual impairment.

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