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CHAPTER 1

Abstract

Employing universal design through inclusive workplace design can help reduce or eliminate barriers associated with the working environment which has been one of the causes of unemployment among persons with disabilities. For this reason, this research is looking into inclusive workplace which is in relation to the problem of unemployment of people with disability in Mozambique. It does not focus on one disability group rather it focusses on various types of disabilities and the general accessibility of the working environment so that every individual can fit into the working environment irrespective of gender, age, religious affiliation and most especially degree of disability. The literature is divided into four sections and it examined the impact of the general accessibility in the work environment to accommodate people with disability, it also reviews inclusive employment in the job market, inclusive education and ICT accessibility in employment. Examination of literature identified that people with disability have difficulties in the above spectrum of the research in terms of accessibility. There are a lot that people with disability can offer but due to environmental barriers they are unable to do them. Laws and policies seem to address the barriers and needs of the disabled, but it does not reflect in the physical environment of Mozambique. Inclusive workplace takes the needs of an employee with disability into consideration in everything to ensure that the environment is accessible, tools and machines are also usable. Recruiting persons with disabilities will not only offer them independence but it also means they are enjoying one of the fundamental human rights.

The results of this work also reveal that persons with disabilities in Mozambique do not have equal access to education to prepare them for better opportunities in the employment sector. They lack facilities, trained teachers, materials and technologies to acquire the needed skills to fit into modern way of doing a job.

This research investigated accessibility of ICT and the result shows that ICT is not fully accessible to persons with disabilities in Mozambique. The channel through which information is dispersed to the public are mostly not assessable to persons with

disabilities. For example, most public websites are not assessable to persons with disabilities also information broadcast through televisions radios and public notices are also sometimes not assessable to persons with disability. The cost of digital devices like computers, phones also software and assistive devices which are designed to help persons with disabilities to improve their efficiency has deter them from getting access to them.

The purpose of accessibility in ICT, education and employment cannot be realized if it is not back by law and policy enforcement, good governance, skill development and reasonable accommodation in the business environment to create equal opportunity for diversity. The need to implement policies that fight discrimination and support independent living on the part of people living with disability should be a priority of every nation and not as a secondary matter.

Investing in persons with disabilities in Mozambique in the field of ICT through apprentice training and formal education can contribute positively in the fight against unemployment on the of the disabled in the country. Engaging them through this means will motivate those are on the street to avail themselves for skill-oriented programs and education to better their lives.

The research work also identified that, there is no disability law s in Mozambique presently and policies which seek to address issues of the disabled have not been implemented. Lack of implementation of such policies has contributed the widen of the gap between persons with disabilities and those without disabilities.

Introduction

An inclusive workplace is a work environment that accommodates diversity and has respect for individual ability. It promotes inclusiveness and avoids discrimination. It is an environment where there is equal right and opportunity for all employees. In today's world due to increase in knowledge, technology advancement, and artificial intelligence we see a lot of development around us which has changed the way people live.

Methods of communication, education, transportation, work and employment, even the way people live in their homes have improved over the years. Through technology we

now have smart homes which require little or no human effort and this has brought relieve to people and most especially it has brought independence to persons living with disabilities and the old since aging also comes with lots of weakness to the human system. If person with disabilities can be independent at home, then it means that home is not only well equipped with technology but also it has been universally designed to suit the needs of the occupant. If the working environment could be improved with inclusive design and inclusive technology, then persons with disabilities can also work and contribute to the world. The unfortunate thing is that universal design has not been cultivated neither has it been the practice of Mozambique and for that reason these changes the world sees today with the numerous advantages offered have not been realized by some group of people living with disability in Mozambique. The work environment in Mozambique has not seen much transformation in terms of accessibility to give room to people living with disability to fit in the job market and for this reason this research will look into the barriers in the work places and offer recommendation on how to build an inclusive work place to help reduce the unemployment rate of the disabled in Mozambique.

It is very necessary that workplaces become accessible because people living with disability in the world are about a billion which constitute 15% of the world's population according to a report from the World Health Organization (WHO). One billion or 15% is a significant percentage which cannot be overlooked. This group for many years has been fighting for their fundamental human right and right to independent living but it has since not been achieved.

Some countries are trying to ensure that people living with disabilities can live independent lives, but many have not. Laws and policies such as Americans with Disabilities Act (ADA), British Equality Act, The United Nations Convention on the Rights of Persons with Disabilities (CRPD), The 2030 Agenda for Sustainable Development and all others point to the fact that there is the need to create equal access to education, transportation, public space, facilities, health care, technology, systems, information, services, employment, non-discrimination, social protection for people with disability yet research has proven that they are the very ones whose

majority are unemployed (Brostrand, 2006), the 2016/2017 report from Montenegro indicated that employers prefer to pay levies than to hire persons with disability (Koprivica, 2017), majority of these group of persons are school dropout, most of them live below the minimum standard of living and majority of them depend on families and some government aid to survive (Šiška, 2017). This suggest that laws and policies lack implementation and enforcement by the law and policy makers then it's dead on it own.

To be able to address this issue of inclusive work place in Mozambique I took three months fieldwork in Maputo the capital of Mozambique for data collection through physical observation of the environment to identify barriers, interview people especially persons with disabilities to ascertain their challenges in the build environment in general and also in the work place, discuss barriers with agencies responsible for barrier free community and engage with employers to know their challenges of hiring persons with disabilities and the possible solutions in Mozambique.

It is not enough to provide aids when it is possible to equip these people with good education, training, assistive technologies and also eliminate environmental barriers so they can be employed (Ruškus, 2017). The education systems in Mozambique are not accessible to persons with disabilities due to inaccessible buildings, lack of assistive technologies and in some cases lack of trained personnel to help this group to compete with their mates and some pupils are even rejected by the schools when they apply for enrollment (Arne and Yusman , 2009). If laws and policies concerning the right of persons with disability shall be implemented in the areas of education and employment then people living with disabilities will have equal opportunities like those without disabilities and that will reduce poverty and unemployment among persons with disability (Geneva, 2013). People living with disabilities have equal right to education and skilled oriented programs to equip them to live independently. Inclusive workplace and education problems if address shall do a lot of good to persons with disabilities.

Equal opportunity to education, skill oriented and inclusive workplace goes beyond a good education or a good working environment for we can have a good working environment and education system which is not inclusively design to allow access to certain group of people with disabilities and that isn't enough rather, inclusive education

and workplace is what is needed in the world today to allow inclusive employment (Sida, 2014). This is because it does not only benefit people with disabilities but everyone. Ensuring that companies and organization are building inclusive working environment will reduce the unemployment rate of persons with disabilities and save many families who are living with these persons because some of these people have become burdens to their families. Inclusive education system which introduces assistive technology will help to reduce the rate at which person with disabilities drop out of school and equip them to meet the requirements in the job market.

Background

This research will investigate the role of ICT in inclusive workplace and the impart it has on reducing the unemployment on the part of person with disabilities. Everyone individual has fundamental right to social security thus housing, education, medication and so on. But how can one afford all these if the individual has no job and does not receive any benefit from anywhere. None of these social security rights can be achieve without a constant source of income. But the sad thing is that persons with disability in Mozambique find it difficult to get job even if they toiled themselves through school to acquire the needed skills. For this reason, many of these people end up on the streets which pose many health risks because they are exposed to the harsh weather everyday of their life.

Research has proven that information communication technology (ICT) has contributed immensely to the productivity of organizations and their respective employees (Jawad Abbas, Asif Muzaffar, Hassan Khawar Mahmood, Muhammad Atib Ramzan and Syed Sibte Ul Hassan Rizvi, 2014). With the help of ICT hunting for job, conducting of interviews, and execution of one's job after gaining employment has been made easier. On the part of persons with disabilities in Mozambique the situation is different in the sense that some of them do not have the means to access things online and some also have difficulties accessing things online because most of these websites are not accessible to them. Though ICT has contributed a lot, but the impact of its contribution has not been felt deeply in the lives of persons with disabilities living in Mozambique in

terms of education and employment which is essential to the independent life they seek for.

ICT has help many to become entrepreneurs and has created job for many in the develop world. Is this the case in Mozambique especially on the part of persons with disabilities? The answer is no, and this is because technology comes with cost which these group cannot afford themselves and there is no help from the government to support them.

It is one thing to get employed and another thing to feel belonging to the organization. There are people who for some reasons are working in organizations but don't feel part of them. All they do is to go execute what they are told to do and go back home without knowing what is actually happening in the organization and there are also a lot of people with disabilities who acquired skills but have no jobs and the reasons to these problems may probably be because inclusion has not been embraced in the in the country. This and many more are the reasons why this research is being conducted.

Objective

The global objective of this project is to contribute to the ongoing research on the role of ICT on inclusive education and workplace and the specific objective is to investigate the role of ICT in inclusive workplace in Mozambique for persons with disabilities in the country to fit in the job market. The right to education and employment is a fundamental human right of every citizen regardless of ability or disability hence the need to investigate the course of discrimination among persons with disability, the effects and possible solution to ensure inclusive design in the educational system and the workplace.

The main aim of this research is to investigate the use of ICT in building inclusive workplace in Mozambique and identify measures put in place by the government of Mozambique to resolve the problem of unemployment on the part of the disabled through ICT. It will also identify barriers in the workplaces and education in the public and private sectors and make recommendations.

Structure

Chapter one

This gives an overview of the specific area in which this research work cover and the problem of investigation.

Chapter Two

Chapter two reviews previous work which has been done the in relation to the problem statement.

Chapter three

In this chapter the methodology used in data gathering is discussed in detail.

Chapter four

This chapter analyzes the result gathered through interviews and observation in detail to ascertain the reality of the problem.

Chapter five

In this chapter the result is deliberated in detailed to identify the possible effect the problem has on the unit of analysis. Possible solution to the problem is proposed to remedy the situation and finally offer a conclusion.

Research Questions

What barriers do persons with disabilities face accessing employment in Mozambique and how can ICT help in eliminating these barriers?

In what ways can ICT promote employment with persons with disabilities in Mozambique?

CHAPTER 2

Literature Review

Working Environment

Research has shown that several factors contribute to achieving an organizational goal and one of the major factors is a good working environment which has a direct impact on workers (Chandrasekar, 2011). A good accommodative work environment also promotes healthy work force which in the end increases productivity says Abdul and Maulabaksh (Abdul and Maulabakhsh, 2014). According to Jain and Surinder the work environment has direct impact on the efficiency, safety, health, job satisfaction and the overall wellbeing of employees and a healthy workforce is the backbone of the development of every organization (Jain and Surinder, 2014).

An inclusive build environment must also involve an effective evacuation access route that will protect the safety of people with disability in an emergency situation according to Christensen et al (Christensen, et al, 2014). Every organization that wants to excel must ensure that the environment in which the people are working from is in the best state to bring out the best of employees and attract customers (Bitner, 1992). If results of research have proven that a good working environment increases job satisfaction and productivity, then I strongly believe that an inclusive workplace will do more.

Creating a working environment which accommodates diversity and richness of capability of the people, and to leverage their talent will not only steer the progress of the organization but also create a sense of belongingness and this is something heads and leaders of organizations cannot ignore looking at how people are advocating for human right and the evolving legislation against discrimination in the working environment says Barak (Barak, 2017).

Accessibility

Several years ago, structures, technologies and designs were made which seem best at the time because a lot were not taken into consideration. But as people began to use those facilities, systems and designs those with mobility disabilities found some challenges (Philippa et al, 2008). People living with disabilities feel that their rights in terms of access need are poorly implemented in the build environment but it looks like

the authorities who are to enforce policies are weak in executing the law says Rob and Marion (Imrie and Kumar, 2010). Research has shown that the built environment has a significant effect on independence of disability thus deterring walkability and other physical activities in people with disability said by Clarke and George (Clarke and George, 2011). A research conducted by Dori et al 2013 identify physical environmental barriers that impedes mobility activities of older adults in Washington (Dori et al, 2013)

The challenges identified in the built environment caused for new standards such as the Americans with Disabilities Act (ADA) Standards Adopted by the U.S. Department of Justice (2010) and the U.S. Department of Transportation (2006). This standard ensures that every structure that is designed is accessible or part of it is accessible to people with disability to allow people with disability to work to their full potential without barriers within the working environment. It also states clearly that under no circumstance should anybody be unable to access education, transportation, employment, recreation or any form of movement due to built environmental barriers. The standard therefore defines disability as a physical or mental impairment that substantially limits one or more of the major life activities of such individual (Standards, Department of Justice ADA, 2010).

This policy will not change everything overnight but its enforcement and the introduction of universal design is contributing in dealing with issues pertaining to accessibility and efforts are being made to ensure that environmental barriers that impede the mobility of people with disability are eliminated gradually (Imrie, 2011).

This is not so in the developing world. A Civil and Environmental Research conducted in 2015 revealed that National Disability Policy which led to the passage of the National Disability Law, Act 715 of 2006 in Ghana has since not been enforced. The law which was made to provide protection against discrimination of people with disability has been there for twelve years without effect. For this reason, people with disability can't access most public buildings because they are story buildings without lift, ramp, elevator or any means to move from one floor to the other. Out of thirty-two public building used as case study only 20% has lift or ramp 80% do not have; also out of the thirty-two only 5% has communication aids 95% don't have (Kportufe, 2015). If the law makers are

defaulters how can they enforce it on others? Hence the reason why the law has been established for these many years and yet not much has been achieved.

For lack of implementation transport system, roads and buildings are not accessible meanwhile it is clearly stated in the law that under no circumstance should people with disabilities be denied such access thus providing equal opportunities for all (Adjei, 2013). If people are denied quality education due to their disabilities, then how would they fit into this competitive job market? As the social model put it, the society has created enough barriers to prevent people with disabilities to fit in the community. A research conducted in western Canada identified some environmental barriers in a university (Coriale, Larson and Robertson, 2011). Education is a fundamental human right of every person and must be realized in the lives of people with disabilities without discrimination to open new opportunities for them (Hammad, 2018). A research conducted in six university campuses (three public and three private universities) in Ghana also revealed that the university built environment is not inclusively designed (Tudzi, Bugri and Danso, 2017).

A 2018 report on assistive technologies in developing countries also revealed that affordability has been a hindrance to persons with disability to acquire the needed technologies to support themselves in order to achieve their goals (Rohwerder, 2018). Persons with disabilities need assistive technologies and trained teachers who understand their needs to excel in their carriers so if these skills and tools are not available it is the students who suffers the consequences. A research conducted by university of Jordan Faculty of Educational Sciences reveal that student who suffer hearing impairment don't have the standard materials to support their learning and teaching (Yahia Mahmoud Al-smadi, Dr. Ibrahim A. El-Zraigat, 2012).

A research conducted in India which accessed all the banking website in the country showed that all the banking websites did not meet the maximum standard only few met the minimum conformance level set by WCAG (Arvinder Kaur, Diksha Dani, 2014).

Another research conducted in Pakistan on all government and the ministries websites

also showed that the website do not conform to the WCAG standards which make it inaccessible to persons with disability (Muhammad Bakhsh , Amjad Mehmood, 2012). Evaluation done on Dubai e-Government websites also revealed that majority of the websites did not meet the minimum conformance level lay down by WCAG which means that these sites were developed without taking into consideration accessibility of persons with disabilities (Basel Al Mourad and Faouzi Kamoun, 2013).

Research has proven that technology does not only provide independence to persons with disability in the world of education alone but has also increase the level of efficiency even in persons with learning difficulties in completing academic task and also given great academic success to those who have access to it (Forgrave, 2020). Michael Gawronski stated in his work that having a universal design system of education will not benefit only the disabled rather the diverse student needs shall be met to improve academic success among these students (Gawronski, 2014)

The world has seen a lot of transformation through information technology, artificial intelligence, architectural designs and many more but the issue of unequal accessibility persists.

Inclusive Employment

In spite of the advancement the world has seen there is still a great gap between people with disabilities and those without disabilities in terms of accessibility and job opportunities (Angela, 2015). Though many countries in the develop world has tried to bridge the gap through solid legislation and policies to ensure that from education to employment, infrastructure development to manufacturing, goods and services are all accessible to people with disabilities to avoid discrimination.

The British Equality Act 2010 states categorically that under no circumstance should an individual be discriminated in an event of applying for job, interviewing, or given a job due to disability, gender, religion, sexual orientation or size of the individual (Paliament, 2010). Also, the European anti-discriminatory law does not only give right of employment to people with disabilities rather provides measures to ensure that people with disabilities are given equal education and training to enable them to acquire the

needed skill to fit in the employment market. Countries within the European domain and the developed world are making effort though it might not be enough to empower people with disabilities to become independent.

The European Commission on 5th December 2017 as part of European day of people with disability celebration awarded France city Lyon the 2018 Access city award for putting at its core heart accessibility in the city life. The award was given to Lyon base on the following: "Lyon's public buses are 100% accessible, and access to culture for all is also ensured, thanks to the inclusion of accessible equipment in libraries, such as reading machines, audiobook readers and magnifying screens. The city has also developed digital tools for people with disabilities, and in terms of work integration, 7.8% of civil servants are people with disability which is significantly higher than the legal minimum quota of 6% required by the French legislation" (Policies and Activities, 2017). This award is a way of motivation and creating the awareness of the need to empower people with disabilities to be independent. This hasn't changed the situation outright. The fact remains that there is a gap that needs to be bridge. The 2017 report of Equality and Human Right Commission of Great Britain submitted to the UN Committee on the Rights of Persons with Disabilities stated emphatically that people with disability in the UK still have challenges in employment, education, transport and many more in spite of the equality act (Commission, 2017). Unemployment rate on the part of persons with disabilities is on the high rate despite the effort made to get more of disabled person in the working environment (Everett, 2019).

Summaries of some European countries reports on disability issues concerning education, employment, standard of living and other issues published by the Academic Network of European Disability experts (ANEB) in 2016 and 2017 show that Euro 2020 agenda that is looking at enhancing and improving the life of people with disability standard cannot be achieved. Summary from Portugal shows that people with disability experience house hold poverty than people without disability and the poverty level of people with disability in the report above is below the EU standard also of thirteen thousand one hundred and eighty three (13,183) persons with disability who registered for employment only one thousand three hundred and sixty three (1,363) got job

placement (Pinto and Kuznetsova, 2016/2017). Sweden also had similar report from a survey from their public employment service, it reveal that the unemployment rate of people with disability will be increase in 2017 due to low level of education (Johanna and Berth, 2017). Report from Macedonia and other countries also show that Europe 2020 targets which states that 75% of people with disability age from 20-64 year-olds to be employed, reduction of the rates of early school leaving below 10%, at least 40% of 30-34-year-olds completing third level education and at least 20 million fewer people in or at risk of poverty and social exclusion has not been implemented (Zvonko and Elena; Giampiero and Ciro , 2016/2017). This clearly shows that very little has been done to address the issues of disability even in some EU countries. If policy makers and government are doing little, then how can they enforce the laws and policies on the private sector?

Employers also have the responsibility to make policies of inclusion and implements technology that best fit the working environment and also provide premium accommodation for all employees to ensure that working environment, materials and tools, online platforms, distribution or outlets and all others areas are accessible irrespective of what the organization is into to meet the individual needs to enhance their level of efficiency (Lynn Gitlow, Kathleen Flecky, 2020).

ICT Accessibility in employment

In today's world technology is being used everywhere and it has become a driving force for organization to increase productivity. Adapting to suitable thus usable and accessible technologies in an organization is a way of equipping employees to become more efficient and productive. There is a purpose to every designed technology, some are accessible, and some are not. If it happens that technologies used in an organization is not accessible to the employees, then it becomes a barrier and employees and other potential workers may not have the opportunity to work nor come out with their best. It therefore important to ensure that workplace technology is accessible to all to enable workers to perform in their various positions and give opportunities for people with disability to be hired and work effectively.

Section 508 of the Rehabilitation Act of 1998 has set some standards for accessibility in terms of technology. Though the policy seem to be directed to federal agencies thus directing them to ensure accessibility of information and communications technology (Web-based intranet and internet information and applications, Email and other electronic correspondence, Video and multimedia products, Online job applications) to be accessible to people with disabilities but it is a policy that every organization can adapt to avoid discrimination to people with disability in the job market (ACT, 1998).

There are other areas apart from workplace where accessibility is equally important and must be addressed by organizations and agencies. Software applications and operating systems, Telecommunications products, Desktop and portable computers, closed products such as calculators, copy machines and printers. These tools are common technological tools that enhance efficiency at the workplace and must be accessible to all.

Mozambique is another country that has not done much as far as implementation of law to protect people with disability is concern. Human right report of 2016 from Mozambique says that the accessibility law on the build environment, information and communication were not realized due to lack of implementation on the part of the government. People living with disability in the country experienced discrimination in access to employment, education, health care and other humanitarian services. Children living with disability find it difficult to get schools to enroll them and those who get school don't have professional teachers who understand their needs. School buildings are not up to international standard making it inaccessible to these pupils. Adults living with disability face high unemployment rate due to unequal opportunity to employment access (Mozambique 2016 Human Right Report, 2016).

Research conducted by the Canadian Conference Board in May 2, 2014 proves that, employing people with disabilities and creating accessible workplace environment creates a lot of benefits and business opportunities for the organization (Brisbois, 2014).

From the above research done it is clearly shown that, inclusive workplace is more productive and innovative. It creates job satisfaction which helps to attract and retain

best workers, no matter their levels or background. A company or organization whose built environment is inclusively designed has a competitive edge over those whose environment is not inclusively designed.

Accessibility of ICT means the ability of people being able to use digital devices or machines and software regardless of their ability or disability. The 2018 Global Initiative for Inclusive Information and Communication Technologies report which analyze accessibility of ICT in countries shows that less than 25% of countries involve persons with disability in making policies which concern ICT accessibility and monitoring which is contradict article 4.3 of the CRPD. Another revelation from the survey also shows that only 37% of countries have ICT accessibility programs in their universities therefore majority of students who graduate from universities in the field of ICT do so without knowledge of accessibility. There are also 55%, 50%, 67%, 58% of countries with no policies on web, TV, Mobile and e-books accessibility respectively to ensure digital accessibility (G3ict, 2018). A research conducted in Nigeria revealed that accessibility of ICT varies depending on the geographical location and financial status of the individual (Kari, 2007). The findings showed that individuals living in rural areas do not have access to ICT because they are low income earners and lack infrastructural development. Another research conducted in India also had similar findings thus, ICT is not accessible to persons in rural areas and low income earners whether disable or able (Mradula Tiwari, Ritu Chakravarty and Jayant Goyal , 2014).

The 2016 world development report showed that one of the major berries to ICT accessibility is affordability (Raja, 2016).

Individual differences as far as disability is concern create different accessibility needs even for persons within the same disability group. Therefore it is the responsibility of an employer to ascertain the technological needs of an employee to create inclusive workplace as well to ensure that every employee is well equipped to be efficient in the organization (Lynn Gitlow, Kathleen Flecky, 2019).

The problem of discrimination amongst persons with disability exist probably because people have refused to confront the issue with passion and dedication which happens to

be the best tool in attacking every challenge says Diamandis and Kotler (Peter H. Diamandis and Steven Kotler, 2014).

The below are some of the numerous benefits a company or an organization stands to achieve for making the work environment accessible to all persons:

- Employees who work in an inclusive environment are more likely to have a high commitment to ensure organizational success than those who are not.
- Enhanced employee's health, safety, performance, and well-being.
- Reduced perception of discrimination and inequity among workers.
- Improved cooperation and collaboration between the co-workers

How can we build an inclusive workplace?

Building an inclusive workplace is something we must learn as individuals and make it work wherever we find ourselves. It is a habit we have to practice daily as a culture and maintained through policies that promote acceptance and positive attitude towards people with disability, set by policy makers of organization (H. L. Brostrand, 2006).

CHAPTER 3

Methodology

Research Method Design

According to Creswell 2009 research design is the strategy and the technique that is used for the research to make informed decisions from the wide range of perceptions to a cohesive method of information gathering and analysis (Creswell, 2009)

Luck and Rubin also defined it as the approach used by a researcher to investigate the research problem. It should be at the center of planning because it determines whether or not the aims of the research will be achieved (David J Luck and Ronald S Rubin, 2009).

The study of looking into accessibility and inclusive design of workplace which is a basic requirement for an inclusive employment shall require some statistical data to analyze whether the workplaces are inclusively designed and is accessible to people with disability to avoid discrimination. Let's investigate the three main research approaches (quantitative, qualitative, and hybrid).

Quantitative approach computes problem in the form of numerical data and convert them into useful statistics that can be used to define different variables. In this approach the result is generalized from larger sample. Basically this approach uses statistics to analyze data and also use to explore or expand existing theory says Creswell (Creswell, Research Design Qualitative, Quantitative, and mixed Method Approaches, 2009).

Qualitative approach on the other hand is used to explore detailed experience and behavior of people through the use of interview, observation, content analysis and history says Hennink et al (Hennink, Hutter and Bailey, 2010)). Unlike quantitative this approach does not focus a lot on statistics rather focuses on understanding the theory. For this reason, the research uses a small sample group for the result hence the result cannot be generalized, and this gives room for further exploration of the work.

According to Gliner et al hybrid or mixed approach is the use of quantitative and qualitative all together in this context it is either the information gathering was done

quantitative manner and analyzed in qualitative or vice (Gliner, Morgan and Leech, 2009).

The use of hybrid approach requires a lot of experience and clear understanding of the differences between the two to be able to use without conflicting issues. Besides that, this research focuses on inclusive designed of workplace of public and private sectors to ensure that people with disabilities are not left behind as far as employment opportunities are concern rather they will have equal opportunities like other people without disabilities in terms of employment then we can say that the fundamental human right of people with disabilities are not denied rather laws and policies concerning their rights have been implemented. This means that the research topic is not looking into two different directions which may probably require the need for hybrid approach neither is it looking into something like how an existing product is doing in the market which shall require a large statistical data to compare which is the quantitative approach. From the little overview of the three mentioned approaches the one that will be used for this work is qualitative approach.

The use of interview both semi-structured and unstructured as well as observation which involve people with disabilities are the methods that will be employed for data and information gathering to answer the research question and achieve the goal of this work. A lot of research will be done on the internet to acquire knowledge on the subject area. A three months field work in Mozambique which is the project location was done to realize the extent of the problem.

Unit of Analysis

According to Trochim unit of analysis is the main object that the researched investigate in the study. It is the 'what' or 'who' that is being studied. Some typical examples of units of analysis in social science research are individuals (most common), groups, social organizations and social artifacts (Trochim, 2006). To be able to answer the research questions above, there is the need to have a body from the public sector which will serve as one unit of analysis. The selected body from the public sector to help in the

data collection is The Ministry of Gender, Children, and Social Action in Mozambique who is responsible for protecting the rights of persons with disabilities (MGCSA).

Research Location

The capital of Mozambique thus Maputo is where the fieldwork for this study took place. It is possible to locate people with disabilities in various places but taking the study in the capital will not only help in locating the disabled rather it will also help in locating organizations, contractors, government agencies and other stakeholders.

Data Collection Method

Interview

There are three main types of research interviews thus, structured, semi-structured, and unstructured interviews according P. Gill et al. They further explained the types as follows; structured interview take the form of questionnaires which ask participants a list of predetermined questions, and for that reason both the researcher and the participant do not have the liberty to ask a follow up questions or ask for clarification where necessary. Semi-structured interviews unlike the structured interview, semi-structured interviews also design question which will help the researcher to define the topic under study, but this give both the researcher and participant the opportunity to pursue or give a details explanation in response to an idea. Unstructured interview requires little or no form of organization to perform neither does it reflect any preconceive idea. It begins with an opening question like 'how do you understand ...?' or something like can you tell me about...?' and continue from there based on the response of the participant. (Gill, Stewart, Treasure and Chadwick, 2008).

Rosalind Edwards and Janet Holland also stated that structured interview is more of preparing questionnaires for participants to give their responds and this does not give the researcher much control but a lot of people can respond to it which makes it best method for quantitative design whereas semi-structured and unstructured are more useful for qualitative research. They also explained that, the flexibility and the face-to-face interaction in semi-structured and unstructured form of interview help both the

interviewer and the participant to learn from each other new knowledge on the strategies of the interview procedure (Edwards and Holland, 2013, p. 3). From the above explanation it is very necessary that both semi-structured and unstructured interviews are used because data collection through these means are not very difficult to do and information gathered through this means is more likely to be true since the interviewer is able to observe the interviewee body language and facial expression, any time the interviewer is not convinced he/she can ask the questions again to clear any doubt. It also gives interviewee some form of guideline on the subject matter and the flexibility and it also allow participants to elaborate on information which can reveal things that was previously not thought off. These two types of interviews create a pre-defined relationship between the researcher and the participants and that can build trust between them and this trust give the researcher an opportunity to learn more from the interviewees.

To be able to gather all responses from the interviews and the discussion from the participant's audio recorder was used during the interview and at the same time wrote the answers on sheets of papers to guide the researcher in case something bad happens to the recordings. The note taken was verbatim of the response provided by the participants. The interviews cannot be properly done without discussing the content of the interview with participants first. Therefore, letters were sent officially to seek permission from agencies and focus groups. After receiving the permission, the researcher meets the groups and explain to them what the research is about before the interviews took place.

Participants Description

No.	Type of Impairment	Employment Status
1	Albino	Unemployed
2	Visual	Unemployed
3	Speech / hearing	Unemployed
4	Visual	Unemployed
5	Visual	Unemployed

6	Visual	Unemployed
7	Speech / hearing	Unemployed
8	Motoric	Employed
9	Schizophrenia	Unemployed
10	Motoric	Employed
11	Motoric	Unemployed
12	Speech / hearing	Unemployed
13	Albino	Unemployed

Fig 3 1

A total of thirteen participants were interviewed for this research work. Out of the thirteen were four women and nine men with seven different types of disabilities and they are visual, motoric, speech, hearing, albino and schizophrenia. Majority of these participants had only one disability whereas three had two disabilities per person. The number of persons per the categories of disabilities stated above is as follows;

There were four visually impaired among the thirteen participants and they were all males. Three out of the four were totally blind and one has low vision. Two out of the four were born with the condition and the other two lost their vision in their childhood through accident and disease. One of them has attained bachelor's degree and the other three are in the university pursuing their bachelor's degree in various fields of studies.

Three of the participants who were males had motoric impairment with two who are wheelchair users and the other on crutches. None of them suffered their impairment through accident, they were born with it. All of them are well educated with bachelor's degree.

Three had speech and hearing impairment and they were a male and two females. They were the only group with two disabilities per person. Two of them were born with it and the other got it at age seven. The male among them is a student pursuing a bachelor's degree and the other two ended their education at secondary and apprenticeship training.

Two female albinos also participated in the interviews. The two had up to secondary school education.

Finally, is a male with schizophrenia which began while he was pursuing his bachelor and that led to his drop out from the university.

To be able to answer the research questions and give a concrete conclusion without any bias the researcher also interviewed personnel who are responsible for recruitment from ten different institutions, thus financial institutions, schools, wood complex, general contractors, bakery enterprise and stationary industry.

Method of selecting participants for the interviews

Since Mozambique isn't the home country of the researcher it became necessary that some contacts are made to get in touch with persons with disability and employers in the private sector. For this reason, the organization for persons with disability was the first point of contact and some employees of the host university also help in getting in touch with employers. This helped in recruiting some of the participants. Also, because this is scientific research it was necessary that persons recruited for this work has knowledge on the subject matter therefore other institutions were contacted and that led to participants who have knowledge in the subject and are good users of technology.

Interviewing Guide

This study did not take the form of distributing questionnaires though, but question was designed for the interviews and for the discussion that was carried out with the selected participants. Pilot testing of the interview guide was conducted to ensure that the questions designed for the interview covered all relevant aspect of the research to achieve its goal. This section of the study consists of problems and question in relation to every section of this study. The various section of this research is; working environment, accessibility issues, ICT accessibility in employment, inclusive employment, and inclusive education.

Measures

The research looked into the activities that people with disability are unable to do due to environmental barriers in the five topics the research shall cover for instance, in the working environment the research checked if tools and machinery are usable by people with impairments or not; are walk ways well demarcated if necessary and free from obstruction to allow free movement; also on general accessibility issues there will be a check on whether there are messages and aids to provide directions to various sections of the area; are story building accessible to people with mobility impairment thus structure having lift or ramps to aid these group access top floors. ICT accessibility in employment will be check based on availability of assistive technology in the working environment to aid people with disability execute their task without much difficulties. Under inclusive employment the research shall check the employment rate of people with disabilities and check if the recruitment procedures are accessible to them, and finally look at inclusive education to see if the campuses are accessible; whether there are assistive technologies for people with disability and also if there are trained teachers to assist student who need special care to be successful in their academic work. Individuals who will be found in the above five mentioned areas shall be interviewed to know their challenges and difficulties.

Observation

Data collection through this means was done in two ways thus, participants observation and settings observation. Participant observation was used to grasp what the people of Mozambique value in their culture in terms of manners which helped during interviews to avoid any ethical problem and settings observation took place in workplaces, schools, public facilities and the community. This did not only help provide data on the physical environmental barriers alone but also the emotional and attitudinal behaviors towards people with disability in the work environment, school and the entire community. Visitations to these places were done to realize the extent to which environmental and technological barriers affect persons living with disabilities in Mozambique.

Ethics and Norms

Other important aspect of a qualitative research is ethical issues. Ethics as defined by CIRT are moral standards which deal with human character and conduct to distinguish between right and wrong. It also helps in determining acceptable and unacceptable conduct of a researcher (Bobeică, 2018). Dilmi also says ethics is the acts of doing good and avoiding harm (Aluwihare-Samaranayake, 2012). Norms are normal social behavior in a particular or social group unit. These are the things that the participants observe in the interviewer and provide the response according to the presentation of the question for the interview. The British Psychological Society also defined research ethics as the moral principles guiding research from its inception through to completion and publication of results (Society, 2014). To be able to successfully complete the study without breaching any ethical rule, the following ethical principles shall be followed;

- Formal permission was taken from authorities in charge of ethics in research, the ministry and the focus group of Mozambique before the interviews began.
- In this section the researcher explained to all participants what the project entails and its purpose and also explain to them that they have every right to concern to or not and then provide them concern form to sign to confirm their acceptance in contributing to the research.
- Participants were told that concern form is not binding therefore if anyone at any given point feels he/she is no longer interested he/she is allowed to quit without any consequence and any information or data that has been collected from that individual shall not be used unless they agree that it can be used otherwise the collected data shall be destroyed with the concern form.
- The type of data that is expected from them and the method of collecting the data were known to all participants.
- All participants were aware of the amount of time that will be required from them for the data collection process before the interview began.

- Participant were informed of the right to decline from providing an answer to a question he/she does not want to answer without necessarily giving any reason for not answering that question.
- Every data or information gathered from this study through interviews shall be protected against any leakage to the public or to people who have nothing to do with this project.
- Participant personal data like name, ID or personal number, date of birth, or any information that is traceable to them shall not be collected, thus upholding the rules of confidentiality and anonymity to the participants.
- Every data or information collected from participants shall not be kept on our personal computers, mobile phone, or recorders after the project is completed but shall be destroyed for security and privacy reasons.
- Anyone who doesn't want to be recorded during interview shall not be recorded, his/her responds shall only be written. All the above shall be explained to participants in the language they understand best.

CHAPTER 4

Results/Analysis

Overall the results show that persons with disability in Mozambique don't have equal opportunities compare to persons without disabilities for the following reasons; The following give details to the areas they find inequality base on this research work.

Accessibility of Educational Materials

As the saying goes education is the key to success and knowledge is also power, therefore there is no doubt that the progress of every nation in one way or the other depends on the quality of their education system. The right to education is also one of the fundamental human rights and the right also covers every individual with or without disability. During the interviews it was discovered that education in the basic level is accessible to children with disabilities who attend special school but for those who are unable to get access to special schools have difficulties because special schools are not many. The big challenge comes after they complete the basic level where the special school covers. The high they go the bigger the challenges. The overall outcome of the interviews conducted for this research work suggested that educational materials in Mozambique are inaccessible to persons with disabilities.

A participant has this to say "My experience in education was very challenging due to my physical condition thus visually impaired. I was not born with it so when it happened, I had to stop school for nine years before I could continue. Books and other learning materials were not accessible so sometimes I had to ask friends to study with me to explain what they see for me to understand".

The greater part of achieving academic success depends on the individual ability to personal studies after the classroom, but persons who are visually impaired in Mozambique lack this independence. The reason is that books and other learning materials are not in the format which is readable therefor they need other people to help them in this case. These people who sacrifice their time to help them are not paid for the service, so they offer the help at their convenience. Learning under such unfavorable condition will make learning very difficult.

They also mentioned that, “Our experience in education is good but we the visually impaired have limitation, we are unable to participate in lessons like mathematic, physics, chemistry, and biology like other classmates do from grade seven upwards due to lack of tools”.

Visually impaired persons have limited resources to educate them to achieve their career perspectives, for in stands, they don't learn math, physics, chemistry and biology in school due to lack of resource. When a question concerning educational experience was asked the response was, there are neither trained personnel nor technologies to help them learn these very important subjects from secondary level through tertiary.

When speaking with senior lecturer in one of the universities she mention how that has become a problem with the faculty she is in. she mentioned that they have one visually impaired student doing BSc Management but does not do statistics nor accounting making it difficult for them to graduate him, because those subjects are some of the requirements he has to fulfill before he can graduate but they don't have the means to him learn that.

Should the school agree to award him with the certificate in spite of him not doing those subjects and this gentleman enters the job market after graduation to compete with others with the same certificate but have knowledge in statistics and accounting then that would definitely pose a challenge for him. This limitation gives them less opportunity compare to their peers. Meanwhile there are available technologies to help this group of persons to overcome this limitation but because they are minority no one seems to care, and they cannot solve the problem themselves. It requires government interventions to ensure there are trained teachers and assistive technologies to harness teaching and learning of these subjects to all students including the visually impaired since these subjects are very essential in everyday life. Aside the importance of these subjects this group of persons are also citizens who deserve the right to quality education to achieve their dreams in life. This limitation also creates negative impression about this group of persons in the minds of their peers and other people that they incapable though the problem isn't about them but lack of educational materials. Aside the above mention challenge they are always left out anytime a teacher uses

images to demonstrate ideas in class to help deepened students understanding because they don't get the opportunity to see and there are no technologies to also help them to visualize them. These exemptions are unfortunate and need an immediate redress.

In the higher levels of education library play important role in personal studies and research work, but libraries in Mozambique are not accessible to persons who have vision/motoric impairment.

When asked the role of ICT in their education this was the answer from some of the participants "ICT played a major role, I took a course which helped me learn how to use brail so when information such as PDF files, scan documents and other learning materials provided by the school were not accessible to me I was able to go online and downloaded e-books which helped me a lot but that even didn't solve all the problems because the internet is not fully accessible to us".

They also have issues accessing library, so they use books from online through the accessibility features on their laptops meanwhile not every site or electronic book are not accessible to me which makes most of them dependent on friends to read and explain to them what they find in books.

Almost all the participants had issues with the quality of education to people with disabilities in Mozambique. A participant who uses wheelchair has this to say "Due to my inability to access the library I had to resort to the internet for electronic books to help me with my studies. Without ICT learning would have been difficult".

The library is not accessible to him because it is in the upper floor of the building meanwhile there is no elevator nor ramp to him climb upstairs. The environmental barriers as far as education is concern is always a problem for wheelchair users to an extent that they never had access to school libraries throughout their university education narrated by the participants

A hearing and speech impaired participant also shared with me on how he had to struggle through secondary education without an interpreter "My experience was very

challenging even after going through special school to learn sign language and how to read and write. In my secondary school there was no interpreter so it was hard for me because I can't hear but I was able to sail through and now I am in my third year at the university".

He was fortunate to have a father who could afford part time teacher to help him otherwise he couldn't have made it to the university. The schools lack trained personnel, assistive devices and useful technologies to support the disabled.

Persons who are albino shared their woes when they were schooling due to their low vision issues and the harassment they had to face from their peers and teachers but had to endure all through without vision aid.

The above narration by participants states clearly that persons with disability living in Mozambique are not getting enough as far as education is concern due to inaccessible educational materials and that must be address by stakeholders.

Accessibility of employment

Employment is a desire of every adult or graduate because it does not only offer means of a good living, but it also provides the individual some level of independence. Due to economic challenges employment has become a big problem for many and it's worse in the life of persons with disabilities.

The interviews conducted revealed that employment is the most difficult of all the challenges they face. Only two out of the thirteen participants from the motoric group are employed and according to them they got their jobs because at the time they had their degrees only few had degrees in their area of study and one was the overall best student in his time and that earned him the job opportunity.

This is the narration of the two participants; Participant 1, "Getting job wasn't difficult because at the time I completed my degree not many people had the same qualification so there were many vacancies in the ministry hence my ability to secure a job",

Participant 2, “I was the overall best student at the time of graduation and that time not many people had degree in my area of study, so I got the job even before I graduated”.

Though most of them are well educated and have the needed expertise yet they are unemployed due to their disability. Persons with disability in Mozambique who have attained degrees have very little chance to employment and almost no chance for those who have no degrees. These were their response when the question regarding employment was asked;

“Employment is the biggest problem I will give you example. I applied for employment at the ministry of education and I was admitted. I went there and when they saw me and realized that I am visually impaired they ask me how did you study and how can you work? I told them I have been admitted so I am here to get the needed documentation and the person said no come back tomorrow to see the director I left and returned the following day and my status has been changed to not admitted. The problem here is being disabled and not lack of skills. Persons with disabilities are perceive as incapable”.

This man had the needed requirement for the position, so with the help of a friend he applied for the job. After compilation he was fortunate to be selected as one of the few graduates to be employed by the ministry as teachers. He was happy when he got the news, but the happiness didn't last because everything changed after he went to the ministry in person to finalize the process. He was disqualified because of his disability.

It is unethical to discriminate against someone because of disability from taking a position he/she is qualify for.

Hearing and speech impaired participants also have this to say, “we have been looking for job everywhere but never had one so what we do now is sports. we have organized ourselves to participate in sporting activities. We are willing to work but because of our condition it's been difficult for us to get any”

Things of this nature do happen because some people perceive disability as inability or a curse therefore, they are not supposed to be in the working environment.

Below are the responses gathered from representatives of the institutions and industries when the question of whether they will employ persons with disabilities if they have the needed expertise was asked?

“Six out of the ten representative answered no they can’t employ persons with disability. The reason they gave are as follows;

- The work is difficult, he/she can’t do it and even if they can it will be difficult them to accomplish the daily task.
- The presence of such a person may endanger the safety of him/her and others
- We can’t afford special tools and machines to enable them work efficiently.

The remaining four also said they can employ them but “It depends on the type of disability the individual has, for example if the person is a wheel chair user but has his hands, albino or uses crutches but can see, must be of a sound mind, can hear and talk then he/she work with us, but we can’t employ someone who is blind, without hands, has psychological issues or cannot speak nor hear”.

The above responses from the representatives of the various industries do not only confirm the difficulties of the disabled in their quest of job hunting but also it confirms the negative perceptions, the intolerance and the abuse of office, weak nature of laws and how some people have become barriers to the development of the disabled. Their responses also establish a fact that some disability groups are less likely to be employed than others. Despite technology advancement the responses above shows that persons who are visually or speech impaired don’t have opportunities in the private sector. They are the disability group with no positive response from all the ten representatives.

Communication aids such as speech and hearing aids are there to support persons with speech and hearing impairment. Unfortunately, none of the participants with this impairment had access to one. They like the visually impaired are less likely to gain employment per the result gathered from the industrial representatives.

All the representatives answered no to the question on the part of persons with hearing and speech impairment though this group of persons are physically strong and energetic and until they begin to use signs in communication one cannot just look at them and identify any disability yet they are one of the groups with less opportunity in gaining employment in the private sector because of their impairment.

Organizations which are prepared to support the community in the fight against discrimination can do so because providing the needed technologies in the organization sometimes does not required extra cost and some with reasonable cost which aren't beyond the capacity of these organizations.

The narrations of the participants suggest that only a few of persons with disabilities have little opportunities in the private sector, but majority do not have any opportunity for employment.

Accessible ICT

The adoption of technology in education and organizations has created a good impart in learning and work. People have become more efficient and productivity has also increase but the result from this work shows that ICT is not fully accessible despite the hard work invested in technologies in making it user friendly and more accessible.

All the participants who were visually impaired mentioned that they are unable to do their course works from start to finish by themselves without the help of others. From the participants own narrations; "We are unable to check the alignment of our document, the font size, to add reference and also with index we always have issues having all the titles appearing in the table of content of our document".

They mentioned that in Microsoft word they have difficulty arranging their assignment the way they are supposed to arrange them. This is because the screen reader is

unable to tell them whether the margins, indent and spacing are in correct format. They therefore require the help of other people to arrange their work for them. Apart from the alignment issues they are also unable to check the font size or select a font size of their interest. Another area they face similar challenge is referencing a research work and with index. They always have problem getting all their headings appearing in the index table so to ensure a good documentation of their work they always ask people to help them check these areas for necessary correction before they print out or submit.

This means that persons who are visually impaired lack independence in creating documents. Lack of independence also exposes every document created by them to others and this does not offer them the privacy that they need. It also means that visually impaired persons do not have equal access of creating document in Microsoft Word like others for this reason they cannot work independently in that perspective.

Another participant also said, "With the help of Microsoft Excel I am able to plan and also do calculations aside that there is a challenge in inserting tables and graph that we are unable to do".

The meaning of statement is that if a visually impaired person gathers some data and wants to insert table for the data and represents this data in a graph form in Excel, he/she will not be able to do that. It shows that they have limitation on the use of excel unlike people who have no visual impairment therefore, if they want to do some work in excel and it involves tables and graphs, they must ask someone to help them. Again, they do not have independence.

They also explain that they are unable to access PowerPoint file or create document in PowerPoint. "The NVDA does not support PowerPoint files so we are unable to access documents which are in that format".

What the above statement means is that though they have Microsoft office installed on their computers which includes PowerPoint, but they cannot access any document in that format. This means they cannot do any presentation in PowerPoint. These persons are university students with one graduate. They have never done PowerPoint

presentation in their carrier. When they attend lectures of this kind or a seminar where the presenter uses PowerPoint, they can't request for the document for feather studies. It also means that they are not on equal level with their mates in the university. Standing before your mate and doing a PowerPoint presentation does not only build one's confidence but it also prepares the individual for leadership in a professional way.

Though technology has advance and latest version of screen readers are able to read PowerPoint files but that also comes with cost, so they are unable to afford computers with high specs to enable them to have the benefits it has to offer them.

Another visually impaired participant also said, "I am unable to access image files because the NVDA on my laptop does not support image files".

Any time they receive emails with attachment in image format they are unable to access the content of that attachment. On the internet if the screen reader gets to file in image format and has no text description, they won't have access to that.

To make image files and pdf accessible to them, the file has to pass through special scanners to provide it with the necessary properties which will enable the screen to read but this device isn't so common in public place which makes accessibility of information in public place challenging to them. Access to information is one of the basic human rights, we all go to public places like banks schools hospitals and so on and we find information posted on noticeboards which give instructions and directive on what to do at a given time but here is the case persons with disability especially those who are visually impaired do not get access to this information just because this information in the format that they could read by themselves.

All four visually impaired participants said ATM machines and POS digital payment devices are not accessible to them, "We have visa card but we barely use it because the ATM machines are not accessible to us and anytime I buy from the supermarket with card we have to give the card and pin code to the person at pay point to help us pay so we don't like using the card".

They are unable to use Automated Teller Machine (ATM) cards without the help of others because the machines are not accessible and other point of sale (POS) digital payment devices used in the public places for payment for goods and service as well. This barrier makes transactions involving payment and withdrawals very challenging for them. All four visually impaired participants I interviewed admitted that those devices are not accessible, therefore they are unable to use them without the assistance of other persons which render them vulnerable knowing the risk involve in giving your passcode to someone but sometimes they have to tell the receiver of their passcode and hand over their bank card to the individual to effect payment anytime it become necessary that they make payment with bank card. This is what some of them said

Another initiative some participants want companies who are into development of software and technologies to do for them is to build software that run on every platform. For example, apple's Voiceover being able to run on windows computer and also making them affordable for the poor and the low-income earners to acquire technologies that best fit their needs.

They wish to have a technology that would guide the visually impaired to take a photograph of a person or an object of importance on their phones something which is possible on the iPhone but not any phone. They also wish to have device that can explained to them how a person physical appearance and mood look like. They also wish there is a device that can signal them on safety issues when they walk around.

Technology advancement has help in developing communication aids which uses sensors, gestures and sign languages to help voice out what the person with speech or hearing impairment want to say and interpret to him to allow two-way communication. Unfortunately, none of the participants has one but research has also proven that it is still an emerging sector which requires a lot of work to deal with the present limitation. Some of the limitations are; some use sign language therefore the user must know the sign language before he can use. The challenge here is that, sign language is not thought in schools like other language for everybody to understand or use. Even those with the impairment except they attend special school of the disabled they are unable to use the formal signs except that which their parents managed to teach them. Another

problem with sign language is that it varies from country to country therefore if the device is developed by a British it means the British sign language shall be use which is not the same as Mozambicans. Another issue with the speech device is the ability to output the exact statement and interpret same for effective communication is limited.

The result in this section suggest that technology is not fully accessible to persons with disabilities in Mozambique to offer them independence and privacy like people without disabilities.

Affordability of Assistive Technologies

The result of the interviews revealed that the cost of assistive technologies has been a barrier for persons with disabilities in Mozambique to personally own these devices which are to support them in their daily lives. These are some of their responses;

“Because I am an albino, I can’t see very well but I had no vision aid to help me see well and that slowed down everything I used to do. I informed my teachers that I can’t see what they write on the board and because I struggled to see I get tired easily. The only assistance I got at that time was for sometimes the teachers increase the size of the font on board so I could see”.

Children who suffer all forms of vision challenges require the needed support to live the normal life like any other child. It is highly important that such children are provided with the need tools to assist them function like their peers before they turned school age. If a child can’t see clearly in class, it will affect his/her performance therefore provision of a vision aid would have been very helpful.

“Had it not been the Organization from Portugal who donated this PC with brail keyboard to me and also trained me on how to use it I wouldn’t have been able to study in this university because I can’t afford it myself”.

Until the philanthropist from Portugal met this gentleman and donated a PC with brail keyboard he has never seen or touched one. It took a foreign donor to donate a PC with brail to him and trained him on how to use it before he realized that he could surf the

internet and do a lot with computer though he began his education from the special of the visually impaired.

This means that special schools for the disabled are not equipped with modern technologies to harness teaching and learning. There are other visually impaired students in the university who lack basic knowledge on the use of computer and brail keyboard.

“I still crouch because I can’t afford a device which can help me move around easily it is very expensive”,

This person needs an advanced electronic wheelchair because he has no lower limbs to aid his movement but because he cannot afford, he walks on the knees and support himself with his palm when necessary. Persons with motoric impairment who have access to some devices got it from either foreign donors or some NGO’s. The country has money to spend on many but not on the few people who have disabilities to equip them so they can sail as far as they can like the nondisabled.

Assistive technology can be defined as a technology which is design purposely to assist persons with disabilities to improve their functional capabilities in order to do things which under normal circumstance wouldn’t have been possible for them to do and help to improve their wellbeing. When these technologies are used in the educational environment it helps students with disabilities to access their curriculum like their peers without being left behind. These technologies has help many people who are physically challenged to achieve a lot in life for example the late Stephen Hawking who imparted the world in spite of his disabilities in the area of science with his great mind but he didn’t do it without the help of assistive technology which helped his movement and communication. There are many others who are doing a lot in their own areas who haven’t come into the limelight even without assistive technology depending on the severity of the disability, but assistive technology makes them more efficient.

“I have never seen nor own any kind of hearing device because I don’t have money to buy”.

Unfortunately, some of these technologies are highly expensive and for that reason most countries in the developed world like in Norway the government provide for both individuals, schools and the public sectors so that persons with disabilities can stand in the same level as others. Speaking with some employers from the private sector they argued that, to employ a person with disability may be costly because it require some accommodative measures some would require an infrastructural renovation or special office tools like special computer with some programs or both, but the main aim of every organization is to make profit therefore every expenses should contribute to profit making therefore it will not be the best option to procure expensive devices and software in order to employ persons with disability when it is possible to have someone without disability with the same qualification forgetting that organizations have the responsibility of helping the less privilege in society in which they operate.

Accessibility of Public Websites

Website is supposed to be inclusively designed to prevent barriers of accessing information from the web by persons with disabilities. For this reason, there is a lay down standard from the Web Content Accessibility Guidelines (WCAG 2.0) to ensure equal accessibility of information on the World Wide Web. For example it is stated in WCAG 2.0 that all images in websites should be provided with a text description to ensure accessibility of the visually impaired who would be using screen readers or brail keyboard and videos must also have closed caption for the hearing impaired to understand but this isn’t the situation.

They mentioned again that there are websites that seem to be accessible, but they are unable to access contents which are in table especially statistical data which are presented in graphs. Image files are mostly without description to make it accessible to them. This discrimination keeps on because there is no entity to ensure that public websites are accessible to everyone and conform to (WCAG 2.0) guidelines.

The following are some of the responses they gave;

The first participant said, “most of the websites on the internet are not accessible to me so I can’t use the internet like others do, example I can’t check for availability of bus online because the site is not accessible to the NVDA”,

All four participants I interviewed who are visually impaired argued that most public website are not accessible to them for instants, there is an online portal where one can check for public transport in Mozambique, but it is not accessible to them. They also mentioned a site where goods and new products are advertised which is not accessible.

“A lot of audio and video files on the internet, radio and television are not accessible to us the hearing impaired”.

This means a lot information given on the internet, radio and television in form of audio and video are not accessible to the hearing impaired because it come without subtitle to interprets the audio or video nor an interpreter

“The internet is not fully accessible to me for example I visited the ministry of information website to gather some data, but I didn’t get what I wanted because all the data in table could not read by the screen reader”.

Ministry of information which forms a section of governance is responsible for reaching out to all citizen in any possible means with all necessary information about the condition of the state at any point in time. Because the ministry works with a lot of information it is impossible for them to go on radio, television, and so on to distribute all the information hence the need for the website. The websites provide every information meant for the public, but the information is not accessible to the visually impaired.

CHAPTER 5

Discussion

Universal/inclusive design is a topic worth discussion in every sector. This research began with two questions. First, “what barriers do persons with disabilities face accessing employment in Mozambique and how can ICT help in eliminating these barriers? The results show that persons with disabilities living in Mozambique encounter several barriers accessing employment. Some of the barriers face by persons with disabilities are in the following themes; Equal Opportunities in educational and employment and Accessibility of ICT (Affordability of Assistive Technologies, Accessibility of Public Websites). The results also show that technology has provided tools for instant screen readers and brail keyboard for the visually impaired, communication aid for the speech and hearing impaired, voice recognition system, virtual keyboards, joystick, use of gestures and eye-gaze control device, remote access to work, information, education for those with motoric impairment and many more to eliminate most of these barriers what is left is commitment on the part of stakeholders to join hands together to ensure the availability of these tools in their rightful places and also in the hands of the needy to promote inclusiveness in everyday life. The second question is “In what ways can ICT promote employment with persons with disabilities in Mozambique? The result also shows that through inclusive education and training on the use of the available tools that has emerged through technology advancement persons with disabilities can work independently without limitation or with minimum supervision or support. Technology advancement has created new opportunities for persons with disabilities to become entrepreneurs, developer and many more without the need for job haunting in the labor market where competition is high.

Employing modern technologies in the educational system and public institutions in Africa for the development of persons with disabilities, youth and future generation is possible. The problem is that the issue of accessibility has not been confronted with passion as in most countries hence the gap. Persons with disabilities who through perseverance enter tertiary education complete with lots of lapses not because they are not capable but it’s all due to lack of tools and materials. After graduation they enter into

the job market in search of job with the same group of person who from the beginning of their studies competed with but not on fair grounds and they all attend similar interviews and they are exposed so their mates get jobs and they don't. Although persons with disability in this context may be excellent in areas that they are familiar with, but for the fact that they cannot work with the tools available like Microsoft office can deter an employer for employing such a person.

Figure 5.1 is a simplified representation of the relationship between education and employment. The quality and higher a person's level of education the more opportunities open to him/her for employment. Education Can be in the form of academic or skill-oriented program or apprenticeship training. If persons with disability will be given equal opportunities like those without disabilities in education, then the more chances they will have in the employment sector hence the need for equal opportunity in terms of education. It is very difficult to gain a lucrative job without a corresponding level of education. Lack of quality education on the part of persons with disabilities in Mozambique is a contributing factor to less opportunities in employment.

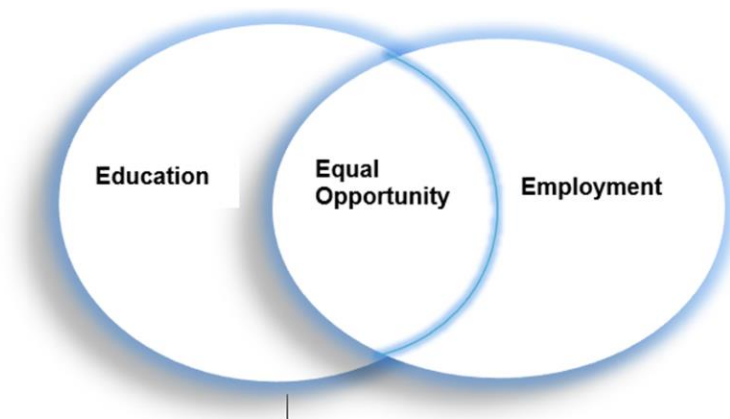


Fig. 5. 1

Building equal Opportunities

The results gathered from the fieldwork in Mozambique for this research work has shown that persons with disabilities do not have equal opportunities as those without disabilities for the following reasons;

- They lack educational facilities, trained personnel and learning materials to educate them unlike those without disabilities.
- they don't have equal opportunities to employment because some employers and other stakeholders perceive them as incapable which is not the case with persons without disabilities.
- ICT is not fully accessible to persons with disabilities to support independence on the part of persons with disabilities.

This support previous research work as identified in the literature review of this paper that persons with disabilities do not have equal access to education, ICT, and employment.

Building equal opportunity is no longer an option rather it is a must because it is against the law to set an unequal pace for people of the same level to compete. Looking at the benefits and the positive impact inclusive design has had on the everyday life of people it will be ethically not right to discriminate the less privileged in society. Inclusive design does not benefit the disable alone but everyone.

Building equal opportunity may be challenging due to diversity of individual needs but when the fundamental are provided then people will build on it to achieve greater things in life. Unlike the medical view on disability as problem with the individual which requires a cure or care the social model perspective shifts the problem from the individual and direct it to the barriers in the environment which creates the gap that hinders the disabled to function the way they should. Whereas the two views may be correct the solution can also come from there. If the disabled receive the needed health care and environmental barriers are removed, then there would no limit to what persons with disabilities can achieve.

Through interviews and observations, it was identified that persons with disabilities in Mozambique do not have equal opportunities like those without disabilities. The education system, employment, governance and other areas of life have not set equal opportunity for them. They suffer a lot of challenges due to gaps in the society, from infrastructures to tools, devices and materials and also the perceptions of some people concerning persons with disabilities makes it more difficult for them to secure jobs hence the need for ICT trainings to equip them on areas which are less capital intensive like computer and phone services and repairs, graphic design, web design, data entry, sale of IT gadgets and parts, printing and studio works, computer training so they can establish their own small businesses to generate income for them to become independent.

The invention of ICT has created a lot of job opportunities for many people in the world including persons with disabilities that we all can testify, and this can happen in the life of persons with disabilities in Mozambique. The result also shows that role of ICT in reducing unemployment among persons with disability is inevitable. ICT has provided us with tools which can enable persons with disabilities to work in different professions independently like those without disabilities. If the government will invest in them by building a special ICT center where the disabled can be trained in the field of ICT it will help create job opportunities for them. They have since look forward to seeing the government to create more opportunity for them but it's not happening, the business industries are not ready to engage them, they keep rejecting them. The government being the largest employer can make their dreams be realized in their lifetime.

Accessibility of Educational Materials

The result showed that educational materials are not accessible to persons with disabilities in Mozambique. The curriculum assigned by the ministry of education to be used for teaching and learning are not accessible and that has resulted in elimination of

visually impaired group from learning important subjects like mathematics, physics, chemistry, and biology. The only resource available for persons with hearing impaired is sign language so where there are no interpreters they don't benefit from the teaching. There are no hearing aids to support them in their studies, so they have limitation. There is no available program which supports those who have difficulties in learning. Educating persons with disability comes with some challenges depending on the degree of the disability which requires some additional skills by teachers and tools depending on the degree of the disability. This shows that person with disability have challenges with their education. The implementation of ICT in educational system is supposed to enrich, transform teaching and learning and also strengthen inclusion but on the part of persons with disabilities in Mozambique the story is different, ICT has not bridge the divides between teaching and learning for persons with disabilities and persons without disabilities. Lack of technologies in the educational system in Mozambique has cause deficiencies making it impossible for persons with disabilities to be on level grounds with their peers who are without disabilities.

Considering opportunities, the visually impaired alone are losing due to lack of study materials to learn mathematics and all the science courses they are overwhelming. The very areas where few people study but have great and divers job opportunities is what they are unable to do due to barriers so they are forced to study what the majority are studying and even in that with some limitations and at the end of it all they have to compete for the few vacancies with the majority.

This contributes to the reports and previous research work which propose that educational systems in most countries across the world are not accessible to persons with disabilities.

Accessibility of employment

The result gathered under this section confirms to previous research and countries reports which states that persons with disability lack access to employment compare to those without disabilities as revealed in the accessibility of employment section in the literature review.

Some countries have policies which oblige organizations to have a quota for persons with disabilities and the less privileged and refusal to comply warrant a fee penalty which is paid to the government, but other countries don't have such policies. Reports reveal that most organizations in these countries who enforce this policy prefer to pay the fee rather than employing persons with disabilities. This propose the degree to which organization discriminate against persons with disabilities.

The responsibility of ensuring reasonable accommodation for all employees by organizational heads is what some employers have ignored but highlighted the disabilities of some employees and prospective employees to suggest that these persons are incapable due to their disabilities therefore they can't fit in the working environment. It is very unfortunate that some employers have become barriers to prospective employees who have disabilities.

If persons with disabilities can't fit in the working environment then the problem can't be shift on them alone as some employers are doing now because the environment, stakeholders and other factors also play a crucial rule in their mobility and functionality therefore with the required technologies and inclusive design these barriers will longer exist. The problem of discrimination amongst persons with disability exist probably because people have refused to confront the issue with passion and dedication which happens to be the best tool in attacking every challenge as said by Diamandis and Kotler. If the problem of discrimination among persons with disability which is a global issue shall be tackled collectively by bridging the gap between the disable and the able then some individuals, families, community nations and the entire world would be relieve from the harsh consequences that faces these group as a result of unemployment.

If organization will adhere to disability policies and train persons with disabilities in the form of internship training and train workers on disability related issues for comprehensive knowledge on the subject matter, then the fear of incapability on the side of persons with disability will be eradicated.

Accessibility of ICT

Accessibility of ICT means the ability of people being able to use digital devices or machines and software regardless of their ability or disability. My result, research work and report which investigate accessibility of ICT in countries shows that less than 25% of countries involve persons with disability in making policies which concern ICT accessibility and monitoring which is contradict article 4.3 of the CRPD. Another revelation from the survey also shows that only 37% of countries have ICT accessibility programs in their universities therefore majority of students who graduate from universities in the field of ICT do so without knowledge of accessibility. There are also 55%, 50%, 67%, 58% of countries with no policies on web, TV, Mobile and e-books accessibility respectively to ensure digital accessibility (G3ict, 2018). A research conducted in Nigeria revealed that accessibility of ICT varies depending on the geographical location and financial status of the individual (Kari, 2007). The findings showed that individuals living in rural areas do not have access to ICT because they are low income earners and also lack infrastructural development. Another research conducted in India also had similar findings thus, ICT is not accessible to persons in rural areas and low income earners whether disable or able (Mradula Tiwari, Ritu Chakravarty and Jayant Goyal , 2014). Individual differences as far as disability is concern create different accessibility needs even for persons within the same disability group. Therefore it is the responsibility of an employer to ascertain the technological needs of an employee to create inclusive workplace as well to ensure that every employee is well equipped to be efficient in the organization (Lynn Gitlow, Kathleen Flecky, 2019). There is no doubt that ICT isn't fully accessible to all disability groups but with present day technological tools available a lot can be achieved if those in need shall be provided with these technologies.

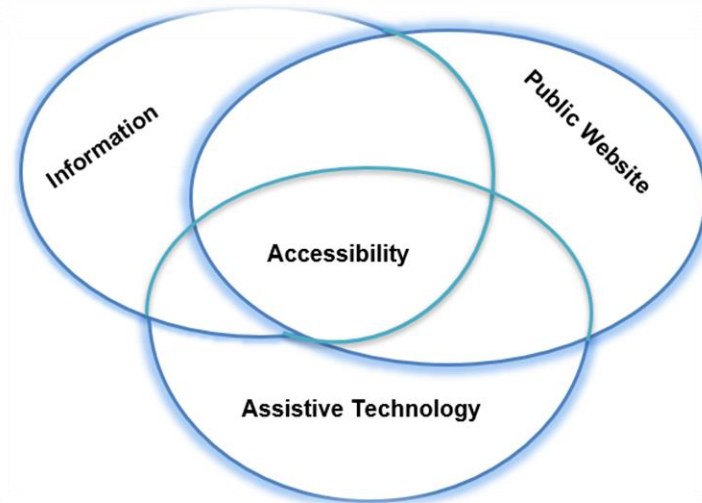


Fig. 5. 2

Figure 5.2 illustrates three areas the results of this research work identified accessibility challenges for person with disabilities in Mozambique. The areas include Public website, information and assistive technology.

Access to Information

Access to information is one of the fundamental human right which provide them knowledge on their right and responsibilities. It informs people decisions at any given time. It is through information people are well-versed with current state of affairs of their nation to make informed decision. People can make accurate prediction of the future only when they have correct information of the past and present.

Lack of accessibility of information affect them in many ways. Adverts on job vacancies and product are not accessible to them so most of these job vacancies go without their knowledge. Some of them have very little knowledge about products and services available in their geographical location so they have very little to choose.

Lack of information in the political realms hinders their chances of partaking in some political activities. Most of them have very little knowledge in political affairs to make informed decision in politics which plays a major role in the affairs of their citizenship and rights.

Accessibility of Assistive Technology

The cost of assistive technologies depends on the complexity of it therefore severity of the disability determines the type of technology needs. For these reason countries like Mozambique where there are no technology policies makes it difficult for persons with disabilities to have access due to the expensive nature of these technologies. The use of these technologies by persons with disabilities is to enhance the level of efficiency at work and assist them to overcome barriers therefore, without assistive technologies they face a lot of challenges which interns render them inefficient. Technologies like JAWS or Window-Eyes, Brail, NVDA, ZoomTeext and Magic, OrCam and many more works better now than before and they are able to assist the visually impaired to work independently. Ava is also another technology that has been design for the hearing impaired with the capability to convert sounds into text even in the professional setting where there may be group conversation. These technologies come with variations in cost so, there are some which are not very expensive, but the unfortunate part is that majority of persons with disabilities in Mozambique and the like cannot afford even the cheapest due to their financial constraints.

Accessibility of Public Websites

The result shows that public websites in Mozambique are not accessible to persons with disability for the following reasons. Visually impaired persons use screen readers to access content on the internet meanwhile, contents in tables, statistical data, images, links do not have text description which makes it impossible for screen readers to interpret to them. Also, videos and audios lack subtitles and text description which also make it inaccessible to the hearing-impaired persons. This supports previous research that shows that websites are not accessible to persons with disabilities. Though there are laws, standards, and legislation to ensure inclusive design and to avoid discrimination at all levels, but research has proven that there are still more to be done. Persons with disabilities living in Mozambique stated clearly the challenges they face whenever they visit public websites to gather information. Persons with disabilities also have right to information therefore; as governance, banking, and business are going online it is unlawful to do that without taking into consideration these group. The above

shows that right to information which is one of the fundamental human rights of persons with disabilities has long been violated in the sense that as technology is transforming governance, business, education and other aspect of life it does not go in parallel with persons with disabilities, they are left behind.

Recommendations

This section gives some possible solution to the problems identified in all the areas of the research. It has been grouped into three categories which are based on the outcome of the result. The first is 'Practice', the recommendation given at this point is to help bridge gap between teaching and learning for persons with disabilities and those without disabilities to remedy the negative perceptions on persons with disabilities. The second is Policy which give ideas on some areas government can offer support to the disabled and enforcement of laws to ensure equal access. The last is Future which give recommendation on areas that need more research work as far as accessibility is concern in Mozambique and Africa as a whole.

Practice

There is a need for sensitization for the people to understand that disability is not inability neither is it a curse rather it is the barriers in society which makes it difficult for persons with disabilities to function in certain situations. Thus, persons with disabilities are also citizens who have goals and ambitions they want to pursue in life. People should not see them as incapable rather they should be seen as people who can also contribute to the development of the economy with needed support. Most of the participants disclosed to me the number of times they have been called for interviews and immediately the interviewers notice their disability they ask who did their curriculum vitae for them. The questions then shift from the job and all attention is drawn to their impairments.

Another way of reducing unemployment rate on the part of persons with disabilities through ICT is by establishing ICT training center which will train these groups to specialize in areas such as graphic design, software engineering, web design and so

on. With that they can become entrepreneurs as it is the goal of some of them. To make it very effective it should be functioning in way that the center on its own shall generate income to pay the trainees' whiles they are on the job training. That is the only way they can support themselves and also have the zeal to be trained. This will also reduce the burden on the government and motivate those who are on the street to engage in skilled training program rather than being on the street.

Government can help by creating a platform where persons with disabilities will display their potentials for the public to realize that it is not only their counterparts in the western world who can use technology in the advance levels but they are also capable and can work efficiently like any other person with the help of assistive technology. If the public are previewed to their abilities it will remove the fear of inefficiency from the minds of employers and that can also help in creating equal opportunities for them.

Policy

Schools, hospital, roads and other social amenities are constructed by governments. The money used for these projects is for the state. Person with disabilities are also citizens of these states therefore, every government project should not be commissioned unless it demonstrates full accessibility to persons with disabilities. It is time policy makers ensure inclusiveness in society.

There is the need for assistive technology policy to help equip persons with disability. Now persons with disability depends solely on family and foreign donors for these devices and because they are expensive only few have access to them. These group suffer a lot of challenges in their daily lives assistive technology can eliminate.

The government also needs to equip its institutions with assistive technologies so they could employ or enroll the disabled. Old structures, technologies, machines and tools should be renovated and upgraded respectively for equal accessibility and usability.

Government can subsidize in the procurement of assistive technologies for the private sector as a motivation to equip them as well to employ persons with disabilities. It can

also be in the form of tax reduction on all form of assistive technologies to reduce the importation cost.

Sign language can also be put in the educational curriculum like any other language studied in schools for every student to learn how to communicate using sign to eliminate communication barriers which is causing hindrance to the energetic but speech and hearing impaired from gaining employment.

Future

Look into why till today disability laws have not been implemented in some African countries. What is them back, how can it be implemented to benefit everyone and what impact would the implementation have on the community?

How does discrimination among the less privilege affect their physical, psychological, and emotional wellbeing, the impact it has on community and governance, possible and preventive measure.

Conduct research in how to bridge the gap between disabled and able persons in terms of equal access to education and employment in African countries. What would be the measures to put in place and what should be prioritized to avoid unnecessary burden on the community? What measures should be put in place to avoid abuse of this welfare it which seeks to bridge the gap between the abled and disabled.

Conclusion

The research conducted has revealed that issues with accessibility are universal though it is more serious in some countries than others and must be addressed collectively. It has a significant emotional and psychological effect on people living with disabilities which need to be investigated in detail. Some countries in Africa have laws and policies regarding accessibility and the right of persons with disability but have not been implemented and Mozambique is no exception. This failure of executing the law has contributed to the discrimination and stigmatization of disabled person. The accessibility problems face by people with disability is as result of poor execution of accessibility

laws in the build environment. In some areas those who are to enforce the laws are defaulters themselves and for that reason they are unable to enforce it. Lack of education and training programs on the part of people with disability has been a factor of low employment rate in this group. The education system lacks the needed materials and technologies that will help improve the learning ability of these group of people hence the high rate of school dropout in this group. It is about time authorities ensure that laws and policies on disability right are implemented. Apart from ensuring that laws and policies are implemented leadership in organization are responsible for educating and training employees about diversity in making employees to understand that disability is not inability and people with disabilities are also endowed with great abilities. They are to create an environment that promote and Motivate employees to act inclusively and avoid stigmatization in order to achieve a more inclusive workplace. This could be achieved by diverse training, workshops and cultural events within the organization as well as equitable treatment of the employees.

Employers also have the responsibility of tapping into artificial intelligence and the advancement of technology to create an inclusive working environment to open more opportunities for persons with disability rather than discriminating them due to their disabilities.

It is believe that every person is created in a unique way and when equal opportunities are being given to all then people with disabilities can contribute immensely to the development of the world, as the saying goes besides a person disability there is an endowed ability, therefore, it will be a great lost to an individual, family, community and a country as a whole to leave some people left behind due to their physical disabilities without tapping into their capabilities.

Limitation

The research location is Maputo the capital of Mozambique and only thirteen persons with disabilities and ten personnel from different organizations in Maputo were recruited for the data gathering as stated in the methodology. The thirteen personnel didn't cover all disability groups neither the ten personnel represent all the organizations in Maputo. Therefore, the conclusion is based solely on the data gathered from these thirteen participants. It is possible the result would have been different if more than thirteen persons from the disability group and more than ten representatives from the business environment has been recruited for the research work.

Appendix

Interview Guide:

- What is your experience like in education?
- What role is ICT/Assistive technology playing in your education?
- Which areas do you think need changes?
- How would you put these changes to use?
- How accessible is the learning materials and the school environment to you?
- How accessible is the web to you?
- Is the syllabus of the special school same as the mainstream school?
- In what ways do the government support parents with children who are disable?
- How accessible are the ATM machines and other electronic devices used for business transaction to you?
- What has your experience been like of job hunting?
- What role did ICT played?
- What has your experience been like in the job?
- What role is ICT playing in your job in terms of accessibility?
- What has your experience been like working in different industries?
- How has your experience been like when you first started working and how has that changed now?
- What role has ICT played?
- What was your experience when searching for your first job and what was your experience when searching for your most recent job?
- What is your experience of the working environment or the accessibility of the working environment?
- What role does ICT play in making the working environment accessible?
- What areas in your industry do you think accessibility is good?
- What areas do you think need improvement?
- What are the possible solutions?
- What role can ICT play in solving this problem?
- How would you put these changes into practice?

- How would the changes enhance your working ability?
 - What do you think ICT can do to make the environment more accessible to you?
 - How accessible are the website of public offices in Mozambique to you?
 - Is there anything you think ICT can do to change your world?
-
- Would you employ persons with disabilities in your industry?
 - Why would you or won't you employ them?

References

- Abdul and Maulabakhsh. (2014, October 30-31). *ScienceDirect*. Retrieved from ScienceDirect:
<https://www.sciencedirect.com/science/article/pii/S2212567115005249>
- ACT, W. I. (1998). *United States of America Patent No. Public Law 105-220--Aug. 7, 1998* .
- Adjei, N. N. (2013). *UIB*. Retrieved from UIB Web Site:
<http://bora.uib.no/bitstream/handle/1956/6853/108993260.pdf?sequence=1>
- Aluwihare-Samaranayake, D. (2012). Ethics in Qualitative Research: A View of the Participants' and Researchers' World from a Critical Standpoint. *International Journal of Qualitative Methods*, 65.
- Angela, B. M. (2015). Employment of Persons with Disabilities. *Procedia - Social and Behavioral Sciences*, 980.
- Arne and Yusman . (2009). *Living Conditions among People with Disabilities in Mozambique A National Representative Study*. Blindern: SINTEF REPORT.
- Arvinder Kaur, Diksha Dani. (2014). *Banking websites in India: an accessibility evaluation*. India: CSI Publications.
- Barak, M. E. (2017). Managing Diversity Toward a Globally Inclusive Workplace . In M. E. Barak, *Managing Diversity Toward a Globally Inclusive Workplace Fourth Edition* (p. 7). Los Angeles: SAGE.
- Basel Al Mourad and Faouzi Kamoun. (2013, September 6). Accessibility Evaluation of Dubai e-Government. *Journal of E-Government Studies and Best Practices* , pp. 1-2.

- Bitner, M. J. (1992). Servicescapes: The Impact of Physical Surroundings on Customers and Employees. *Journal of Marketing*, 57.
- Bobeică, I. (2018, April 19). *Center for Innovation Research and Teaching*. Retrieved from Center for Innovation Research and Teaching Web Site:
https://cirt.gcu.edu/research/developmentresources/research_ready/qualitative/ethics
- Brisbois, R. (2014). *Business Benefits of Accessible Workplaces*. Ontario: The Conference Board of Canada (incorporated as AERIC Inc.).
- Briscoe and Mulligan. (2014). Digital Innovation: The Hackathon Phenomenon. *CREATIVEWORKS LONDON WORKING PAPER NO.6*, 1&2.
- Brostrand, H. L. (2006). Tilting at Windmills: Changing Attitudes Toward People with Disabilities. *Journal of Rehabilitation*, 4.
- Chandrasekar, D. K. (2011). WORKPLACE ENVIRONMENT AND ITS IMPACT ON ORGANISATIONAL PERFORMANCE IN PUBLIC SECTOR ORGANISATIONS. *International Journal of Enterprise Computing and Business Systems*, 1-3.
- Christensen, et al. (2014). The Relationship Between the Design of the Built Environment and the Ability to Egress of Individuals with Disabilities. *Review of Disability Studies*, 1-2.
- Clarke and George. (2011). The Role of the Built Environment in the Disablement Process. *American Journal of Public Health*.
- Commission, E. a. (2017). *Being disabled in Britain*. correspondence@equalityhumanrights.com.
- Coriale, Larson and Robertson. (2011). Exploring the Educational Experience of a Social Work Student with a Disability: A Narrative. *Social Work Education*, 422.
- Creswell, J. W. (2009). *Research Design Qualitative, Quantitative, and mixed Method Approaches*. London: Sage Publication, Inc.
- Creswell, J. W. (2009). *Research Design. Qualitative, Quantitative and Mixed Method Approaches*. Los Angeles: Sage Publication.
- David J Luck and Ronald S Rubin . (2009). *Marketing Research*. New Delhi: Prentice Hall PTR.
- Dori et al. (2013). Outdoor Built Environment Barriers and Facilitators to Activity among Midlife and Older Adults with Mobility Disabilities. *The Gerontologist*, 268.
- D. o. (2012, 03 15). *United States Access Board*. Retrieved from United States Access Board Web Site:
<https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards>

- Edwards and Holland. (2013, p. 3). *What is qualitative interviewing?* London, New York: Bloomsbury Publishing Plc.
- Everett, C. (2019, November 25). *diginomica.com / Government*. Retrieved from Government: <https://diginomica.com/what-role-can-technology-play-helping-get-more-disabled-people-work>
- Forgrave, K. E. (2020). Assistive Technology: Empowering Students with Learning Disabilities. *Informa UK Limited*, 122.
- G3ict. (2018). *Global Initiative for Inclusive Information and Communication Technologies*. G3ict.
- Gary King, Robert O. Keohane, Sidney Verba. (1994). *Designing Social Inquiry Scientific Inference in Qualitative Research*. New Jersey: Princeton University Press.
- Gawronski, M. (2014). *UNIVERSAL DESIGN FOR LEARNING: PERCEPTIONS OF FACULTY AND STUDENTS*. Colorado.
- Geneva. (2013). *Mozambique Civil Society Report on the Implementation of the ICCPR*.
- Gill, Stewart, Treasure and Chadwick. (2008). Methods of data collection in qualitative research: interviews and focus groups. *BRITISH DENTAL JOURNAL VOLUME 204 NO. 6 MAR 22 2008*, 291.
- Gliner, Morgan and Leech. (2009). *Research Methods in Applied Settings*. New York: Routledge Taylor & Francis Group.
- H. L. Brostrand. (2006). Tilting at Windmills: Changing Attitudes Toward People with Disabilities. *Journal of Rehabilitation*, 4.
- Hammad, T. (2018). Education of people with disabilities: a capability-context framework of culture. *Disability and Society*, 685.
- Hennink, Hutter and Bailey. (2010). Qualitative Research Methods. In H. a. Hennink, *Qualitative Research Methods* (pp. 8-9). California: SAGE.
- Imrie and Kumar. (2010). Focusing on Disability and Access in the Built Environment. *Disability and Society*, 357.
- Imrie, R. (2011). Universalism, universal design and equitable access to the built environment. *Disability and Rehabilitation*, 873.
- Jain and Surinder. (2014, January 1). IMPACT OF WORK ENVIRONMENT ON JOB. *International Journal of Scientific and Research Publications, Volume 4*, 547. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.429.3175&rep=rep1&type=pdf#page=548>

- Jawad Abbas, Asif Muzaffar, Hassan Khawar Mahmood, Muhammad Atib Ramzan and Syed Sibte Hassan Rizvi. (2014). Impact of Technology on Performance of Employees. *World Applied Sciences Journal*, 271-273.
- Johanna and Berth. (2017). *European Semester 2016/2017 country fiche on disability*. Sweden: The Academic Network of European Disability experts (ANED) .
- Kari, H. K. (2007). Availability and accessibility of ICT in the rural communities of Nigeria. *Emerald Group Publishing Limited*.
- Koprivica, N. (2017). *European Semester 2016/2017 shadow fiche on disability*. Montenegro: Academic Network of European Disability experts (ANED).
- Kportufe, G. S. (2015, October). *IISTE*. Retrieved from IISTE Web Site:
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.822.2101&rep=rep1&type=pdf>
- Lynn Gitlow, Kathleen Flecky. (2019). Assistive Technologies and Environmental Interventions in Healthcare: An Integrated Approach. In *Assistive Technologies and Environmental Interventions in Healthcare: An Integrated Approach* (p. 107). Hoboken USA: John Wiley & Sons.
- Lynn Gitlow, Kathleen Flecky. (2020). Assistive Technologies and Environmental Interventions in Healthcare: An Integrated Approach. In W. Blackwell, *Assistive Technologies and Environmental Interventions in Healthcare: An Integrated Approach* (p. 107). Hoboken, USA: John Wiley & Sons.
- Mozambique 2016 Human Right Report*. (2016). Retrieved from
<https://www.state.gov/documents/organization/265494.pdf>
- Mradula Tiwari, Ritu Chakravarty and Jayant Goyal . (2014). AVAILABILITY AND ACCESSIBILITY OF INFORMATION COMMUNICATION TECHNOLOGY (ICT) AMONG DAIRY FARMERS IN UTTARAKHAND, INDIA. *International Journal of Research in Applied, Natural and Social Sciences (IMPACT: IJRANSS)*, 50.
- Muhammad Bakhsh , Amjad Mehmood. (2012). Web Accessibility for Disabled: A Case Study of Government Websites in Pakistan. *10th International Conference on Frontiers of Information Technology* (pp. 342-347). Islamabad: IEEE.
- Nandi and Mandernach. (2016). Hackathons as an Informal Learning Platform. *Proceedings of the 47th ACM Technical Symposium on Computing Science Education* (p. 346). New York: ACM.
- P. Gill, K. Stewart, E. Treasure & B. Chadwick. (2008). Methods of data collection in qualitative research: interviews and focus groups . *BRITISH DENTAL JOURNAL VOLUME 204 NO. 6 MAR 22 2008* , 291.
- Paliament, U. (2010). *United Kindom Patent No. 4/2010 445975 19585*.

- Peter H. Diamandis and Steven Kotler. (2014). *Abundance: The Future Is Better Than You Think*. In *Abundance: The Future Is Better Than You Think* (p. 10). New York: A Division of Simon & Schuster, Inc.
- Philippa et al. (2008). Mobility Disability and the Urban Built Environment. *American Journal of Epidemiology*, 506-514.
- Pinto and Kuznetsova. (2016/2017). *Country report on the European Pillar of Social Rights*. Portugal: The Academic Network of European Disability Experts (ANED).
- Policies and Activities*. (2017, December 5th). Retrieved from European Commission:
<http://ec.europa.eu/social/main.jsp?langId=en&catId=1137&newsId=9019&furtherNews=yes>
- Raja, D. S. (2016). *Bridging the Disability Divide through Digital Technologies*.
- Rohwerder, B. (2018). *Assistive technologies in developing countries*. UK: UK Department for International Development.
- Ruškus, J. (2017). *European Semester 2016/2017 country fiche on disability*. Lithuania: Academic Network of European Disability experts (ANED).
- Sida. (2014, December). Retrieved from Sida:
<https://www.sida.se/globalassets/sida/eng/partners/human-rights-based-approach/disability/rights-of-persons-with-disabilities-mozambique.pdf>
- Šiška, J. (2017). *European Semester 2016/2017 country fiche on disability*. Czech Republic: Academic Network of European Disability experts (ANED).
- Society, T. B. (2014). *Code of Human Research Ethics*. Leicester: The British Psychological Society.
- Standards, Department of Justice ADA. (2010). *United States Access Board*. Retrieved from United States Access Board Web Site: <https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards>
- Trochim, W. M. (2006, October 20). *Web Center for Social Research Methods*. Retrieved from Web Center for Social Research Methods: <https://socialresearchmethods.net/kb/unitanal.php>
- Tudzi, Bugri and Danso. (2017). Human Rights of Students with Disabilities in Ghana: Accessibility of the University Built Environment. *Nordic Journal of Human Rights*, 282-284.
- Yahia Mahmoud Al-smadi, Dr. Ibrahim A. El-Zraigat. (2012). Challenges of Educating Students Who are Deaf and Hard-Of-Hearing in Jordan. *International Journal of Humanities and Social Science*, 157.
- Zvonko and Elena; Giampiero and Ciro. (2016/2017). *European Semester 2016/2017 shadow fiche on disability*. Macedonia/Italy: Academic Network of European Disability experts.

