Making Distance Education Inclusive to Students with Disabilities through ICTs in Higher Education Institutions in Zambia – A Concept Paper

Kenneth Kapalu Muzata
University of Zambia

Abstract

In a world where the provision of education for persons with disabilities has been a long time battle and still is, worsened by natural circumstances such as the Covid 19 pandemic requiring social distancing, a new thinking of broadening the education opportunities for students with disabilities through distance education emerges. This paper provides a reflection on the possibilities of utilising distance education to broaden the education opportunities for students with disabilities in teacher education institutions that offer distance education. With the help of literature review, the paper discusses the opportunities of using distance education as an avenue for delivering inclusive education to students with disabilities and finally makes recommendations.

Key words: Inclusive education, Distance Education, Teacher Education Institution, Disability, Students, Information Communication Technologies.

1.0 INTRODUCTION

Distance education, formally known as correspondence education started in Europe in the mid-19th century but has spread all over the world (Zambia-education, 2021) as a mode of teaching and learning that broadens access to education (Siaciwena & Lubinda, 2008). Although early definitions say distance education is an education with geographical separation between the teacher and the learner where there is no interaction between students, distance education actually has immense opportunities for interaction between the teacher and the learner, and among learners. Today, distance education is also known by the names such as distributed learning, Open and Distance Learning (Odel), and remote learning (https://www.zambiaeducation.info/distance-education).

Zambia is not new in the provision of distance education. In the 1940s, Zambia, then Northern Rhodesia was already involved in distance and open learning when many Zambians trekked for post primary qualifications through commercial colleges in South Africa and Britain. Even after independence when Zambia needed more manpower to run the economic sectors, Odel was in existence at the Zambia National Correspondence College and at the University of Zambia on a small scale (SAIDE, 1999). Although community perceptions towards distance education have been generally negative considering those who use this mode of

learning as less intelligent (Makunka & Ngoma, 2006), this mode of learning has in the recent past gained credence, attracting big numbers in universities and colleges. Presently, the Ministry of General Education has a directorate responsible for Open and Distance Education (Siaciwena & Lubinda, 2008). (Siaciwena, & Lubinda 2008) report that the Directorate of Open and Distance Education is offering radio lessons to lower basic Grades 1-4), middle basic (Grades 5-7), and upper basic (Grade 8) levels in order to reach out to children of school going age who are out-of-school or those who have no ability to access the formal school system due to inadequate space and facilities in schools. Surely, and mostly, those who have no ability to access the formal school system and uniquely excluded due to inadequate space include persons with disabilities of school going age. Poverty and distance to schools and lack of interest by parents in the education of their children and the impact of HIV/AIDs are also reasons advanced for the introduction of distance education at these levels. The Ministry of General Education also offers distance learning programs at teacher education level to upgrade teachers through the different colleges of education and universities. For instance, one famous programme for teacher upgrading is the Primary Teacher's Diploma by Distance Learning (PTDDL) offered through Chalimbana University in association with primary teachers colleges. The University of Zambia, Mukuba University, Copperbelt University and Kwame Nkrumah University also have distance education programmes offered to students. Private institutions are also preview to this mode of education delivery. The popularity distance education has gained over the years should be a necessary vehicle for broadening accessibility to higher education opportunities for persons with disabilities. There is however no reliable statistics of students with disabilities and the nature of disabilities enrolled on distance education programmes in the country.

Although literature on distance education for students with disabilities in Zambia is scarce, some literature seems to portray that students with disabilities in teacher education institutions have limitations in ICT related skills for education purposes (Muzata, 2018). For instance, Muzata (2018) in an assessment of soft skills among students with disabilities in teacher training institutions in Zambia reports as follows:

> *Nkrumah University students were more vulnerable in terms of not using technological compensatory skills followed by ZAMISE students. Though students were conversant with internet use, they do not use equipment such as embosser, talking watches and calculators, computers aided with speech output, computers with magnification software, reading machine or scanner, voice activated computers, electronic dictionaries, braille output voice recorders among others. It is not known whether the institutions do not have the equipment and it was also not known whether the few that used such equipment were the owners of such equipment or they were institutional* (pp: 9).

This paper therefore provides a reflection on how ODEL can be used to propel the education opportunities for students with disabilities in higher education institutions in Zambia. The paper proposes a change in mindset to utilise new innovations in education aimed at improving the quality of and or access to education for potential students with disabilities. The need to consider students with disabilities makes such innovations more inclusive and in line with sustainable development goals on inclusion, lifelong learning and equity. Certainly, for any nation to develop, "*though must not leave anyone behind*".

2.0 LITERATURE

For those who have access to computers and internet connectivity, distance education offers a very promising quality of learning equaling conventional teaching and learning modes (Burgstaler, Corrigan, & MacCarter, 2004). However, if the courses are not well designed to meet the learning needs of students with visual and hearing impairment, even with computers and technology, learning can still pose challenges (Burgstaler, Corrigan, & MacCarter, 2004). Online courses can be difficult to access if course designs are made so complicated that students with disabilities and especially those with mobility and visual difficulties can find it difficult to navigate web pages.

A powerful lesson can be drawn from the University of Washington in 1995 that developed online distance education courses with tools such as discussion, assignment submission and peer review developed by Educational Technology Group. After discovering that students with disabilities could not access the courses, improvements were made to provide access. In the Zambian situation, modifications can be made to online learning facilities to enable all students with varying needs access learning. The various facilities in moodle and astria modes of learning could be adapted to each type of disability (Muzata, 2020) in order for students with different needs to access learning.

At Zimbabwe Open University, management was applauded for considering applicants with disabilities on the application forms and general process. However, students faced challenges learning on distance. Challenges included disability itself giving restrictions to various learning situations, accessibility restrictions as some campuses have high stair buildings without lifts, and technological challenges which included lack of access to computers (Mutasa, Goronga & Tafangombe (2013). Other challenges included lack of modified materials although the only noted modification was the use of audio recorded cassettes and braille. However, programme support staff did not have knowledge of braille and sign language to be able to support students with hearing and visual impairment. Although no study confirms these challenges in the Zambian situation at distance education level, similar challenges exist in the higher education of students with disabilities in the regular degree programmes (Muzata, Simalalo, Kasonde-Ng'andu, Mahlo, Banja, & Mtonga, 2019). Students with disabilities at Zimbabwe Open University

also faced challenges in answering questions that required drawings, a challenge that was also reported by Muzata et al (2019) and Simui, Muzata, Sakakombe & Mtonga (2020) among students with visual impairment in the regular programme at the University of Zambia.

Further, in Zambia, although a study by Simui, Thompson, Mundende, Mwewa, Kakana, Chishiba, & Namangala, (2017) did not focus on students with disabilities, their study of Distance Learners' Perspectives on User-friendly Instructional Materials at the University of Zambia found many challenges facing practitioners in instructional design mainly concerning poorly resourced communities predominated by print as dominant medium of instruction. According to Simui et al (2017), print based instructional material would only be user friendly if it included accepted presentation and content layout, inclusion of objectives, use of interactive language, size of font and module, good coherence of ideas and use of illustrations. Others include the inclusion of activities; the explanation of technical terms, inclusion of real life situations, and assessment items (Simui, et al 2017). The study considered students without disabilities but somehow certain features addressed hint on inclusivity of education materials so that every learner can access distance material. For instance, the aspect of font size is a critical consideration for students that may have low vision. First, reliance on print based instruction maybe disadvantaging many learners with disabilities such as those with visual impairment, learning disabilities such as dyslexia and even some physical disabilities. Students who are blind cannot benefit from print based instruction unless their modules are embossed in braille. Considering the huge volumes that braille produces when transcription is done, it becomes almost impossible to have several modules in braille print for one student or more with visual impairment that depend on braille. The large volumes of braille modules would be a challenge for a student with blindness to store and carry during residential sessions. It also means all recommended illustrations may not be brailed and the interactivity reduced to have a minimal print out of braille module. This possesses a cost and time threat for production. The piece of writing by Simui et al (2017) does not however suggest that the University of Zambia is static to the utilisation of print as the only mode of instruction for distance education delivery.

The Directorate of Distance Education in 2016 introduced the Astria e-learning platform for delivering instruction to distance education students. The Astria e-learning platform is an advanced interactive platform that allows students and lecturers, students and students and Odel management to interact. It has several features such as online submission of assignments, quiz tests, discussion forums, files uploads and downloads among others. Students can access modules and other learning materials on the platform. They can send messages and questions for clarification via the Astria learning platform. However, Muleya, Simui, Mundende, Kakana, Mwewa, & Namangala (2019) noted that even though the University had migrated to the digital learning management system, the culture of wanting to

use print material in their study by students remained the same, Learners further had limited interactivity with their instructors and among themselves despite the system having the functions. The challenges of online or digital learning systems may pose more challenges to students with visual, hearing and other disabilities enrolled on distance learning. Thus, the challenges that students with impairments face in accessing and using Astria have not yet been explored.

Haankuku, (2016) in a study of challenges of learning mathematics by distance in private and public universities, respondents rated the quality of materials, feedback from lecturers and periods for residential lowly. Haakuku (2016) argues that teaching of mathematics demands interactivity via video conferencing.

Kakana, Mundende, Muleya, Simui & Namangala, (2020) report that distance students at the University of Zambia are aware of the Open Access Repository and were able to find information using the Open Access Repository service. However, this study does not say whether students with disabilities were part of the sample or not and does not report the nature of challenges students with disabilities face using the university library. However, Kakana, et al (2020) recommends a more inclusive improvement to the library infrastructure and learning materials.

From the literature on distance education in Zambia, students with disabilities on distance education appear to be ignored in studies so far conducted. Yet, a number of students have knowingly passed through the University of Zambia distance education mode and have graduated. This paper should provide an opportunity for researchers to conduct research on disability at the University of Zambia.

3.0 ICT CONSIDERATIONS FOR STUDENTS WITH DISABILITIES ON DISTANCE LEARNING

ICTs can make distance education a successful tool for inclusion of students with disabilities in higher education. Its (ICT) considered as an equalizer (Muzata & Mahlo, 2021). There is no doubt that ICTs can provide access to the general curriculum for students that have disabilities. The following suggested ICTs can be used but the list is not limited.

3.1. Audio Recorded lessons

Lecturers teaching on distance can record lessons and store them on CDs or transferable files for distribution s to students with some disabilities who can benefit from hearing. Students with visual impairment, some physical disabilities, slow learners and those with some distinguished learning disabilities can benefit from this initiative. Muzata (2013) found audio lectures very helpful to not only students with visual impairment but also those without disability, helping them improve academic performance and developing a sense of lessened physical distance between students and lecturers. The advantages of audio recorded lectures are that they are easy to produce by lecturers and they are portable and easily transferable. They can be stored on flash discs, CDs, on computer and even on

phones with adequate storage. This portability makes learning easier students with disabilities. Thus the recorded lectures in acceptable formats preferably MP3, are playable in car, radio or and modern TV sets have provisions for placing flash discs to play audios. Lecturers teaching on distance need to be supported by providing them with MP3 recorders, although nowadays, good phones can still be used to record lessons that can be shared with students. For learner support section in distance education, production of MP3 lessons and distribution to students with disabilities should be ensured. In case, with the Astria platform, provisions should be made to place audio recorded lessons online for download by students.

3.2. Computers installed with Job Access to Windows

Computers installed with Job Access to Windows, commonly known as JAWS can provide accessibility to the general higher education curriculum by students with visual impairment. The JAWS help to read for the student all forms of readable files saved as Microsoft word, PDF, or other (Muzata, 2020; Muzata, & Mahlo (2021). Distance education providers can provide linkages to students to access such software licenses for students with visual impairments.

3.3. Social media platforms

Several social media platforms can be transformed into learning arenas for students with disabilities. For instance whatsapp can be used to share video lesson clips as well as audios. It also offers face to face online conversations, typing and other facilities that teachers and learners can make full use of for learning purposes. Simui, Mwewa, Chota, Kakana, Mundende, Thompson, Mwanza, Ndhlovu, & Namangala, (2018) have documented the use of whatsapp in teaching and learning. Other available social media platforms are face book, twitter, google gmail chat and meeting platforms such as google meet, zoom and others. The platforms require efficient internet connectivity and accessible smart phones or lap and desk top computers.

3.4. Computers installed with signing software and sign language video lessons

Current technologies also suggest that education for learners who are deaf should be made easier by use of computer software used to generate signing avatars necessary for interpreting technical concepts that pose particular hurdles for sign-language interpreters especially in technical subjects like science and mathematics (Ndonyo, Matafwali & Chakulimba, 2017). Sign language video lessons would be very helpful to deaf students on distance learning. The videos can be provided on VCDs or DVDs or they can be uploaded on Astria elearning platform provided the platform has adequate for storage of learning materials.

3.5. MP3 Recording devices

There are various MP3, and MP4 recording devices that students can use to record lectures during residential sessions. Students need to have such equipment and the learner support department of distance education needs to store such devices for students to borrow and use during residential sessions. Adequate knowledge and skills should be imparted in students with disabilities to use the various ICT gadgets such as phones, laptops to record lectures and store for further learning. Students should also be introduced to audio books available online for download.

3.6. The e-learning platforms

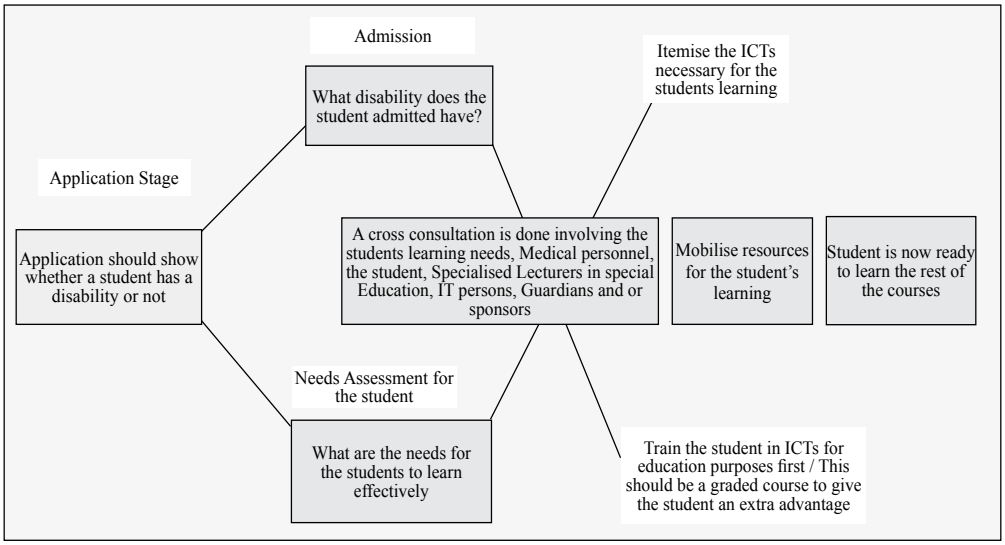
As in the case of the University of Zambia, Astria is main e-learning platform for distance education students while moodle has been used by regular students during the Covid 19 pandemic closure. For students with impairments such as vision and hearing, learning maybe problematic if they are not well inducted into using the learning platforms, yet the platforms can provide effective independent learning. Students need to be inducted in all the features on the platforms so that they can access information, and interact with lecturers and other students.

4.0 CONCLUSION

Higher learning institutions should make all learning platforms for students accessible to all. Thus, universities' repositories, e-learning libraries and internet should be fully utilised to improve learning for students with disabilities. Article 24 of the UNCRPD and the Zambia disability Act of 2012 are explicit on this that there should be no form of exclusion of learners or students with disabilities at any level of education and that institutions should make reasonable accommodation of the individual's requirements is provided to facilitate their effective education (UNCRP, 2006; Zambia Disability Act, 2012). In Zambia, the guidelines for effective inclusion of learners with disabilities are being domesticated through the disability act of 2012 and the Zambia 2013 curriculum framework to ensure that all education opportunities available to citizens should equally benefit persons with disabilities. For instance, the disability act of 2012 highlighted the need for reasonable accommodation in the education of learners with disabilities and the 2013 curriculum highlights the use of adapted technologies to improve the quality of learning for learners with disabilities in schools. Distance education thrives on many principles, but flexibility is the most critical feature that requires to be maximally utilised to help especially students with disabilities. In teaching and learning and most importantly in assessment, practitioners need to be considerate of various ways to include students with disabilities in learning. Equipping students with disabilities with ICT skills empowers them towards independent living and learning (Muzata & Mahlo, 2021).

The following figure exemplifies the process that would ensure that students with disabilities' needs are considered for learning purposes:

Figure 1: Model for incorporating ICTs in distance education of students with disabilities



Source: Author

Figure 1 illustrates that students with disabilities' needs should be considered well in advance at the time of application and their subsequent admission into the distance education learning mode. The figure considers that students with disabilities' admission should call for various experts to guide their enrollment. Thus, a needs assessment is required to help establish a suitable distance learning atmosphere for students with disabilities. After the needs assessment, the needs are mobilised and students and their teachers are trained in the use of specialised equipment for distance learning purposes. The ultimate result is an inclusive distance education, a mode that considers the learning needs of all regardless of their abilities and or disabilities. With such a mechanism, the adverse effects of Covid – 19 pandemic (that has caged people in homes) on education access especially for persons with disabilities would be abated. An inclusive distance education concept through ICTs would also help broaden access to education for persons with disabilities.

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