

**INEQUALITY, ONLINE TEACHING AND QUALITY EDUCATION,
“EXCLUDING THE EXCLUDED” IN INSTITUTIONS OF HIGHER
LEARNING IN ZIMBABWE: HOW TO BUILD INCLUSIVE INSTITUTIONS?**

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Abstract

The covid pandemic has been marked by negative outcomes locally, regionally and globally. The sudden closure of institutions of learning, copious teaching and learning dynamics emerged giving rise to dire demand for blended learning. The study explores the intersection of gender, socio-economic status, disability as well as online learning and how this impacted on vulnerable learners' access to quality education during the pandemic and its aftermath. The paper was framed within the exclusion and social justice theoretical frameworks. The design was phenomenological, focusing on the lived experiences of vulnerable female, orphans, those living with disabilities and learners from low socio-economic status. Midlands State University and the vulnerable groups were purposively sampled. Key university informants were officers from information and technology services, the library, Quality Assurance and Professional Development, Disability Resource Centre, student affairs division respectively giving a total of 5 key informants. Focus group discussions were held with 6 orphans from child headed households, 5 male and 7 female students from low socio-economic status from both rural and urban areas and 14 students living with differing disabilities, giving a total of 32 participants. Selection from other vulnerable students beside those living with disabilities was based on voluntariness and the need for a gender matrix. Online

teaching and learning created a digital access gap with the most vulnerable experiencing various types of exclusions. To achieve effective teaching and learning, the paper recommends inclusive pedagogies and sustainable learning frameworks that allow the achievement of SDG 4 on equitable and inclusive education.

Keywords: Equitable education, exclusion, home schooling, inclusive education, irresponsible environment, vulnerable

Introduction

At the 2030 Agenda for Sustainable Development (SD) at UN in 2015, Quality Education (QE) was viewed as a primary driver of the progress across all the 17 Sustainable Development Goals (SDGs). Quality Education is also key in achieving peaceful, prosperous, productive and development-oriented societies that meet the needs of the current generation without compromising the ability of future generations to meet their own needs (Krywult-Albanska & Albanski, 2021). There is a close relationship between quality education (goal 4) and reduction of inequality (goal 5) and (goal 10). All forms of inequality and quality education are very much dependent on all types of poverty; environmental, educational, systematic and economic poverty. All these determine the quality of education in any country (Parker, 2013).

Beside quality education, Goal 4.7 seeks to achieve inclusive and equitable education promoting lifelong learning opportunities for all. This is because education is a fundamental human right according to the 1948 Universal Declaration of Human Rights (Marios, Marios & Aaron, 2016). End of extreme poverty (goal 2)

is linked to the achievement of goal 4 because quality education depends on learners who are healthy, well-fed (nourished) and ready to participate. Quality education also depends on support by safe learning environments with adequate facilities and resources and well-trained staff on various alternative pedagogies (Adams, 1993).

In 2019, the covid 19 pandemic dragged educational institutions and organizations into online learning and tele-working. Educators were forced to put aside the pedagogy that they had known, trusted and used over time. Lecturers became learners as they were confronted with new ways of doing things (Kilgour, & Nortcote, 2018). The covid pandemic became the driver to justify the growth of online learning. Krywult-Albanska & Albanski(2021) advances that one of the largest disruptions created by covid 19 pandemics occurred is the education system. About 1.6 million students were affected worldwide. Schools closed early in 2020 around the world forcing educational institutions to engage in virtual learning. The pandemic and its total lockdown also disrupted the economic activities worsening poverty. The online learning and poverty exacerbated the existing educational disparities and

reduced opportunities for most vulnerable groups, like females, orphans and the rural poor as well as those living with disabilities. The pandemic deepened social inequalities in the world aggravating gender discrimination, a setback in the progress of gender equality, yet gender equality is an important factor in development. The UN Secretary General described the pandemic 'crisis as having the woman's face with sky rocketing forms of violence and discrimination against women (Ibid: 2021). The pandemic compromised SDGs 4, on inclusive and equitable education, 5 and 10 on reducing inequalities adopted by UN General Assembly in 2015.

Discriminated by online learning were 460 million students across the globe. These did not have internet access, electricity, computers and mobile devices to participate in virtual learning while their schools were closed (Krywult-Albanska & Albanski, 2021). The affected were mostly poverty-stricken learners from rural areas. The learning outcomes of learners from disadvantaged families were worsened. The virtual realm and remote instruction were a compromised substitute for in person schooling. The challenges resulted in declining learning time, low levels of engagement resulting in what is termed 'lost learning' by Krywult-Albanska & Albanski, 2021. After the pandemic, only well-off families were far more likely to send their children back to school potentially worsening educational inequality and disparities

even among those learners with access to internet.

Generally, in developing countries, there is lack of access to high-speed internet and access to internet enabled devices. There are alarming gaps between different countries and within the same country. Some educational institutions are lagging behind in digitalization, putting learners in a disadvantaged position. There were new inequalities in digital skills gap resulting in initial rejection of e-learning by many African students and organizations arguing that e-learning was unaffordable, impractical and elitist. The Zimbabwe National Student Union (ZINASU) spoke person, Mawaya totally rejected the e-learning proposal in 2020 citing that the majority of students had no reliable electricity and network connectivity (Mukeredzi, Kokutse & Dell, 2020). The Zimbabwe Electricity Transmission and Distribution Company (ZETDC) had stated that only 41% people had access to electricity in Zimbabwe. The majority of the people live in rural localities and are not connected to the electricity grid.

Mukeredzi et al (2020) further highlighted that very few people had access to mobile networks and smart phones for e-learning. A dispute sprang up in one of the Universities when students were asked to register online or risk exclusion from accessing the e-learning platforms of the University. The e-learning platform was reported to be beyond reach to

many. The expenses together with shortage of electricity and poor internet connectivity would result in marginalization of those with outstanding tuition fees. Learning should be accessible and affordable to students in line with the policy of Education for All (EFA) and the Zimbabwe National Development Strategy 1 (NDS1) of 'leaving no place and no one behind' mantra thus advocating for equal opportunities for everyone. ZINASU estimated that in 2020, 8000 students deferred their studies as a result of economic hardships worsened by covid 19 and the online learning that caught people unaware and unprepared.

In Ghana, the National Union of Ghana Students called the government to stop online learning until a resolution was made between the University authorities and students. The University was to refrain from conducting examinations or assessments during this period. Students demanded financial waivers, free online data and bursaries. There were physical and non-physical challenges that worsened the digital gap among students. Those on Trust Loan Funds suffered the most (Mukeredzi et al, 2020).

South African students called for a boycott of online classes arguing that it is not equally available to all students. The Forum for Women Educationists (FAWE) who also reiterated that the alternative e-learning platforms deepened inequalities among institutions and students. Matsilele

(2021) cited how digitalization negatively impacted on institutions' capacity to deliver during the pandemics as a result of skills gap, access to digital connection and affordability of digital tools. He further points out that the rate of adoption of online teaching during and in the aftermath of the corona virus is largely dependent on the above. The historical imbalance became apparent during covid-19 in particular, inequality in online teaching and learning.

The historic inequalities persist even in the aftermath affecting the vulnerable groups who are already suffering from historic exclusions by poverty, gender, rurality and living with disabilities. Shumba, Muntanga & Macha (2020) colluded that covid 19 had caused multiple crisis to the already stretched Zimbabwean education system that was trying to recover from cyclone Idai thereby increasing the burden of learners in serious need, the orphans, children living with disabilities and many other vulnerable children whose participation in learning was affected by closure of schools.

In Poland, parents considered online learning as of lesser quality taking into consideration the above circumstances. Unequal access to learning technologies resulted in unequal access to quality education by the disadvantaged groups thus they were excluded from quality education. The vulnerable learners then experienced various forms of exclusion resulting from deep rooted

marginality. Gender gaps and inequalities persist in the face of startling social and economic transformations (Ridgeway, 2013). There seem to be processes that continue to recreate or deepen gender inequalities. Online or digital space is one of the areas where exclusion of women is being firmly entrenched.

Globally and nationally, statistical data on digital inclusion is scarce and is usually not disaggregated. According to the Global Systems for Mobile Communication, social-cultural norms fuel gender stereotypes on use of technologies which are reinforced at family level (GSMA, 2019). Parents directly or indirectly discourage girls from using technology during early socialization thus shaping girls' future in science and technology. It is estimated that gender divide in internet usage in Africa is over 25% (GSMA, 2019). In terms of access to computers, findings reveal that from ECD to polytechnic colleges, 59.9% male students have access to computers, against 40.1% of female students. In terms of mobile subscriber database, Econet Wireless Zimbabwe recorded 8.5 million in March 2019. About 5.2 million of those were males against 3.3 million females and yet Zimbabwe's population consists of more females than males. Gender inequality in terms of access, ownership of digital devices, use, as well as digital fluency in Zimbabwe still exists. Statistics, though not so detailed are a reminder that women and girls continue to fall behind in opportunities to effectively access, own and use ICTs, to improve

their livelihoods (Mariwo-Mbanje, 2020). If not addressed, the digital gender divide can lead to inequalities in other areas thereby stalling the achievements of SDGs by 2030 especially goal 4 on quality, inclusive and equitable education.

It is against this background that this paper seeks to determine the demands of online learning and quality education in the context of inequalities. It also seeks to explore the challenges experienced by the orphaned learners from child headed households, rural learners, those living with disabilities and woman as well as the intersection of inequality, exclusion and quality education in order to develop methodologies and pedagogical frameworks to include the excluded vulnerable groups in quality education.

Theoretical Framework

The paper is informed by the digital exclusion and social justice theories. Digital exclusion theory explains technological exclusion of vulnerable groups. Exclusion from use of technology both direct and indirect impacts access of information and services. This has ripple effects to denying access to active living by way of use of internet, discussion forums, communication, networking, mobile shopping, digital learning as well as opportunities to full participation as a citizen (Martin et al, 2016). Social justice theory in this paper explains the role of technology in exclusion (digital divide) and inclusion (that is, mitigating social exclusion) by

ensuring that the disadvantaged have access to it (Molala and Makhubela, 2021). Exclusion also deprives the disadvantaged of opportunities because of multiple structural challenges such as gender, living with disabilities, living in poor rural backgrounds, and being an orphan from a child headed household. The paper pushes for the latter where online learning serves to include the disadvantaged groups.

Literature Review

General Demands and Expectations of Online Learning Mode

Online learning requires each University to have sufficient resources and infrastructure for it to be effective from the laboratories, knowledgeable human resources, to the internet service providers. A university cannot successfully implement e-learning without proper attributes of its infrastructure (Chitanana, Madzima & Makaza, 2017). This is entirely true because at some Universities the laboratories are too small and cannot accommodate many students thereby making internet access difficult. In addition, not every computer in the laboratories can be used for educational purposes. In relation to internet connectivity, with an increase in bandwidth there is an increase in costs which undoubtedly affects the finances of State Universities taking into consideration the current hyperinflation environment in Zimbabwe. Logging into google classroom and attending virtual lectures can be very expensive for the university and the students.

In May 2020, Econet introduced an e-learning data bundle that was priced cheaper than the normal data bundle as a way of trying to promote online learning.

That bundle is still being used even today but students still have challenges with poor connectivity. The service is slow, such that a student can spend hours trying to log into the learning management system but still fail. When it comes to virtual classes, the lecturer and students fail to make presentations because of poor connectivity as they are constantly booted out from the platform. Learning becomes compromised and in some cases the lecture will have to be cancelled but the students still sit for exams at the end of the semester (Chitanana, Madzima & Makaza, 2017).

As time progressed, state universities introduced the Learning Management System (LMS), a software that helps create, manage, organize and deliver online materials to learners. This system was introduced as a means of trying to curb the demerits of using WhatsApp and it was deemed to be more effective. Before the Covid-19 era, the LMS had been in use by most State Universities but was not mandatory because of reliance on face-to-face learning. For instance, National University of Science and Technology (NUST) first introduced their learning management system called SAKAI in 2012 while Zimbabwe Open University (ZOU) had theirs in 2016 called My Vista. These LMSs are still

being used up to this date although more improvements need to be made for Zimbabwean learners to realise the full benefits of online learning (Fry, 2022).

Research from four institutions in Zimbabwe, namely University of Zimbabwe, NUST, ZOU and the University of Zimbabwe show that from the 86 lecturers interviewed, 22% lacked interest in teaching online (Chitanana, Madzima and Makaza, 2017). This lack of interest by lecturers was evident by the absence of lecturers on the platform during their teaching period. According to Tanyanyiwa and Madobi (2012), from a sample of 20 ZOU students, half of them highlighted the issue of absenteeism elucidating that there was low attendance at tutorial sessions by part-time tutors wasting the resources of the students who would've travelled a long way just to get to where there is internet access.

For the success and effectiveness of online learning, the government has to create an enabling environment that guarantees equal access to education for all. This includes investing in infrastructural development, alternative learning methods for orphans and other vulnerable children (OVCs) to ensure 'No one is left behind' (Parliament of Zimbabwe, 2021). Online learning left vulnerable students exposed resulting in the regression by all VCSs in terms of quality education (Parliament of Zimbabwe, 2021). Rural schools reported an increased dropout in 2020,

perpetuating a cycle of intergeneration transmission of poverty and inequality. Remote learning demands appropriate hardware, software and high-speed internet connection which is currently a major challenge in Zimbabwe. (UN 2020) noted that online or distance learning disadvantaged most students including the disabled in terms of necessary equipment, internet access, material and technical support, audio narrations, simplified text, sign language and brailled content.

There is also a demand of supporting learning environment with digital infrastructure with appropriate facilities for online learning including the training of lecturers and teachers in online teaching and learning. Kumar (2021) asserted that digital transformation also calls for shift to digital inclusive pedagogies – what he calls re-imaging pedagogical approaches to teaching and learning. The learning activities should be made accessible to all students for effective experiential learning. This involves making video conferencing, TEAMS, forums, google meet assistive devices accessible to them. This is possible if right policies, investments, procedures and protocols are implemented by educational institutions. UN (2020) also concur that technology alone does not guarantee good learning outcomes, to support digital learning, there should also be training of students and lecturers in inclusive assistive technologies.

Mobilization of alternative pedagogical resources from national

and international platforms is key, in addition to the above, Zimbabwe has a policy and legislative framework for the learning environment. It is a signatory of Unilateral Declaration of Human Rights, in which education is a basic right and has clauses on non-discrimination.

It has also signed the Declaration of International convention on social, economic and cultural convention on the Right of the Child (CRC). The Constitution of Zimbabwe amendment number 20/ 2013 where the Education Amendment Act of 2020 expounded that children have a right to State Funded Education. The Government introduced Basic Education Assistance Module (BEAM) to support financially disadvantaged learners in primary school. These are policies on inclusive education and a Disability Act and recently Harmonized Social Cash Transfer (HSCT) to the vulnerable households all in a bid to achieve EFA and quality education. Despite the above, vulnerable learners continue to experience exclusion of various forms.

Intersection of Inequality, Exclusion and Quality Education

It is worthy to study the impact of digital exclusion on vulnerable groups to examine the relationship between social inequalities and digital exclusion (Jackson (2006). This paper takes it further to assess the impact of digital exclusion on quality education in the context of existing inequalities being experienced by orphaned learners, child-headed households,

women, poor rural learners and those living with disabilities. There is a strong relationship between inequality, digital social exclusion, vulnerability and quality education. Jackson (2006) identified an interlock between digital exclusion and educational attainment. He further cited that digital exclusion has the potential to exacerbate social inequalities in the era of technology enhanced learning.

Van Dijk (2005) discovered that there is a sequential relationship between social inequality and unequal access to digital technologies. ICT exclusion follows from other social dimensions of exclusion which in many cases are structural. Since the 1970s, use of ICT has spread unevenly and many still remain digitally excluded (Dutton et al. 2014). Digital participation is linked to overall participation in culture of internet use. Royal Society of Edinburg in (2016) described the digital participation as a right with a 'virtuous cycle' of benefits in other areas like employment, health well-being and in education. Internet use has benefits in education, training, field work, healthcare and increase social interaction through access to information services. Inequality and social exclusion are multi-dimensional involving lack of economic, social and cultural capabilities; access to resources that enable one to take part in a social system (Helsper, 2012).

Molala and Makhubela (2021) noted that technology or digitalization has unintended consequences of increasing disparities. Disproportional access

give rise to a phenomenon referred to as digital divide among people, countries and regions (Turiansky, 2020). It also involves disproportional digital skills and competencies between people and the majority who bear the brunt of this digital divide are those who are in areas without ICT infrastructure devices, rural and under-resourced. Social inequalities cause the digital divide and the same digital divide is fertile ground breeding and perpetuating social exclusion (Molala and Makhubeka, 2021). They further highlight that social exclusion is a major human right issue globally and manifest in abject poverty. Their findings reveal that digital divide (social exclusion) has adverse effects on health, social services, education and general socio-economic development of individuals or communities.

OE is a multifaceted concept involving all aspects of the child and the educational institution, its surrounding community the rights of the whole child, survival, protection, development and participation (Adams, 1993:5). It depends on the quality of the child's environment and the quality of educational resources. For quality of education to be achieved, the learners must be healthy, well-nourished, with supportive learning environment (family, education, institution, surrounding community and nation). Issues of lack of access due to poverty affect attendance, retention, resource capacity, access to digital devices among others.

Only 20% of aid goes to education in low-income countries according to the global partnership for education (GPE) in (Rueckert, 2019). The average cost of funding for education in developing countries is \$1.25 per day per child. There is currently \$39 billion gap to providing quality education to all children by 2030. Despite free primary education, learning still remains too expensive and families remain locked in a cycle of poverty that goes on for generations excluding the poor from quality education. Rueckert (2019) further posits that, in many developing continents like Africa education remains theoretically free. There are formal and informal fees, compulsory materials (items) extra lessons which are unaffordable to many poor families.

UN (2020) proposed that the definition of education should be expanded to include the right to connectivity to remove barriers affecting the marginalized groups. The most vulnerable were those who have poor digital skills and the least access to hardware connectivity required for distance learning solutions. Those in lower socio-economic backgrounds were half as likely to have access to internet as their more advantaged peers. Even those who could access content, some were not fluent in the language of digital instruction hence did not benefit from the new learning support. The crisis had unequal effects depending on existing vulnerabilities.

The pandemic exposed the inequality of the education sector especially in the vulnerable communities exacerbating exclusion that has been haunting the sector for years particularly in developing countries. It is estimated that about 89% of learners in sub-Saharan Africa do not have access to household computers, while 82% lack access to the internet as well as the traditional tools like the radio and television. Learners from poor families and vulnerable positions suffer, given that poverty and education are inextricably linked (Parliament of Zimbabwe, 2020).

Challenges Experienced by Vulnerable Groups in Online Learning during Covid-19 and Its Aftermath

ICTs are a pre-requisite to equal and full participation in society as cited by Scheiter et al (2015), yet there has been relative lack of research into the social impact of digital exclusion as well as the social role of ICT use as a dimension of social exclusion. According to Martin et al (2016:4) ‘social exclusion is a complex and multi-dimensional process involving lack or denial of resources, rights and services resulting in inability to participate fully in the normal activities available to the majority of people in a society’. The exclusion is in the economic, social, cultural and political arenas.

Krywult-Albanska and Albanski (2021) reveal that vulnerable learners, women, rural and learners with disabilities suffered the most in

Poland. There was no high-speed internet in rural areas. The usage was low even when available because of low skills among rural learners. Epstein and Yuthas (2013) observed that access of electricity in rural and urban poor was another hindrance. Improving access would not solve the problem if the scarce pool of other resources remained inadequate. EFA report 2008 noted that 40% of teachers in poor rural Africa have no subject guides and learning materials are scarce. About 70% of learners are rarely allowed to take books home. Online learning for rural students lacking access to electricity and internet was non-existent. Kilgour and Northcote (2018) cited that students acknowledged the importance of online learning to those who have access but viewed it as an inconvenience to the poor, rural and orphaned.

Due to poverty, education remains a social institution that reflects and reproduces the socio-economic and cultural disadvantages that prevail in society (Bourdeau & Passeron, 1977). Students from economically disadvantaged families are more likely to attend schools characterized by worse infrastructure and outdated pedagogical practices compared to those from more affluent backgrounds. Poverty also forces families to choose which gender goes to school and girls end up lacking provision for schooling. Rueckert (2019) emphasized that failure to educate girls is ‘catastrophic’. A generation of young women has been left out due to

economic and cultural reasons by the current online pedagogical methods.

Approximately 93 to 150 million children with disabilities are out of school or lack access to special provisions (Rueckert, 2019). Currently, there are no special provisions relating to online learning methodologies and devices for people living with disabilities. Teachers in one of the special needs schools in Bulawayo pointed out that 'A one size fit all approach to covid 19 response, means children with disabilities are often excluded' (Mutizwa, 2021:1). Social distancing and sanitizing interfered with assistive devices. Face masks were a barrier to the education of those who depended on lip-reading and facial expressions. Transparent protective cover shields would have been of help if made available. Online devices, were simply not accessible to students with hearing disabilities.

UNICEF produced 100 copies of story books that were transcribed into braille but these did not account for those living in poverty out of special schools. The low-tech-solutions for Radio Education programs were not practical for children with intellectual disabilities and those hard of hearing. Special needs learners are also excluded from home-based learning and online testing. The above issues are a tip of the iceberg (Mutizwa, 2021). Not all educational programs and activities can be successfully implemented online. Every proposed solution had its own challenges

emanating from existing structural causes.

Methodology

The paper was framed within the exclusion and social justice theoretical frameworks. The design was phenomenological, focusing on the lived experiences of vulnerable females, orphans, those living with disabilities and learners from low socio-economic status. The vulnerable groups were purposively sampled from one state University. The sample consisted of 15 students living with disabilities, 6 (2 females and 4 males) orphaned living in child headed households, 13 (8 females and 5 males) from low economic status and 7 (4 females and 3 males) purposively selected from rural and urban areas respectively. Each group was subjected to a focus group discussion. Vulnerable students were drawn from the population of 288 under-privileged students registered under university Student Affairs who were on a work for fees program which is a university run internal scholarship fund targeting the disadvantaged.

The program allows students to be employed on part-time bases and the university pays their tuition fees, provides meals and accommodation. Students apply for the scholarship and qualification for recruitment is through background check to ascertain the disadvantage and the nature of vulnerability in-order to offer holistic assistance. The 5 key informants who

responded to in-depth interviews were staff representatives from the library, e-learning office, educational technology specialist, Quality Assurance and professional Development officer, an officer from the University Disability Resource Centre and a Student Affairs Practitioner giving a total sample of 40 respondents. The sampling of individuals from each of these vulnerable groups was based on voluntariness. Some of the students were quoted verbatim.

Findings And Discussion

Demands of online teaching and learning

In-depth interviews with ITS specialists for e-learning revealed that for online learning to be successful, institutions need secure relevant soft and hardware tools. Both hardware and software were expensive resulting in inadequate investment in the infrastructure. Online learning was introduced against the backdrop of unsupportive and inadequate infrastructure. Educational technology specialist highlighted that there should be alternative technologies adapted to rural areas which use alternative sources of power for example, power banks, solar powered equipment, televisions and radios. Alternative, assistive and adaptive computer hardware devices are needed to suit different kinds of disability for example, head gear for those without hands together with talking boards. These should be available as digital technology for use in learning. Screen readers with audio can interact with the

computer, use of voice search for research can also be used but they were found to be expensive to license. The university had one such computer for all the three computer screen readers had software licensed by the donor and this had since expired.

The Educational technology specialist also echoed that for the benefit of vulnerable groups, there should be a shift to offline teaching tools of lower costs that are an imitation of google classroom learning management system. These were more economic in terms of connectivity or use other sources of energy. The librarian cited that candle readers are one of such provided by the library for use without the internet because it uses a battery. The library can load as many as hundred core tests on the candle reader however they had very few to cater for those living with disabilities, in the rural and urban, the poor and orphans in child headed families who cannot afford internet gadgets. The use of flexible devices like discs, flash drive for downloading to read offline should be continued as some computers cannot download.

The ITS specialist highlighted that in addition to high-speed internet, middle to high specifications, cloud servers and accessories for online gadgets are needed to enable simultaneous corrections. Some of the gadgets used had no capacity to download and save large documents, had low memory hence the need for middle -range gadgets with big discs space or memory cards to download content off

line or online. Many institutions, MSU included, have inadequate virtual learning environments. Students need new laptops with durable batteries, power-banks and adapters among others. The vulnerable cannot afford these. WIFI is unreliable at university and non-existent in most homes. The interactive boards are useful and inadequately used by technologically unskilled educators and students.

The Quality Assurance and Professional Development (QAPD) colluded that inequalities and digital divide impact negatively on vulnerable groups. To start with, the educators are not trained on inclusive pedagogies. The University has a post-graduate diploma in tertiary education but it offers a general pedagogy training. The QAPD also carries out training workshops on general and online pedagogies as well as assessment and project/dissertation supervision but the skills are far from the pedagogies for the excluded. Lecturers are not trained on the use of assistive devices for those living with disabilities. Some applications in google classroom need interpretation and demonstrations using sign language. Students need assistance on downloading tests and doing them offline on time.

Professor Nzvimbo, the head of ZIMCHE, in one of his visits to the University reiterated that quality education is driven by educators' skills of general pedagogy, andragogy and heutagogy. Interviews with specialists on online pedagogy revealed that digital content is lacking so is the

personnel that can create such content. Universities have embarked on a heritage-based education curriculum (5.0) but educators have not yet or are unable to generate and design digital content and multi-media presentation for such content. The skills for such are lacking in universities. Universities rely on online digital content which contradicts with local content contextualized to heritage-based education and the environments. Training is needed for online communication, graphic skills for content creation and packaging, that is, pedagogy of diversity (inclusion) and online research skills.

The educators have no skills for creating technological content for learning especially interactive material such as videos, graphic material as well as cameras for demonstration. Graphic engineers are needed to work with educators to create interactive content and package it according to the course outlines. Educators need to be trained on the use of various online learning platforms such as COURSERA, UDEMY, EDX and MOODY in addition to the google classroom.

Challenges and experiences of vulnerable groups in online learning and teaching during covid 19 lockdown and its aftermath

Challenges and experiences of online learning by students living with disabilities

What emerged as common to all students with disabilities is that the majority come mainly from

impoverished backgrounds, which goes to support the common adage that disability and poverty are intertwined entities. This background further disadvantages them in that their families fail to offer adequate support systems for them to participate effectively in online learning. Firstly, most of them did not have the required assistive devices to enable them to participate well. Some assistive devices such as book readers, recorders, computers with screen reader software and magnifiers which are available at the university, were not available at home. For example, only 5 of the 20 students with disabilities have laptops and 15 have smart phones that they can use for learning. Some have phones that cannot access internet and cannot be used for learning.

The research through the DRC key informant established that students living with disabilities were faced with lack of online gadgets as most of them came from poor socio-economic backgrounds. The lack of financial capacity and moral support from their home environment, as most parents do not regard education to be an important tool to those living with disabilities compounded the challenges. It was also noted that financial challenges were rampant, and also attitudes where parents and guardians do not prioritise the needs of the student with disability. Students with disabilities were further disadvantaged as their fellow students could engage in menial jobs to get money for data bundles, they mainly solely rely on parents and guardians for financial support.

The visually impaired still used traditional braille instead of the perkinsbrailles, stillus and stencils during examinations. They also lacked recording tools to record online lectures, as braille writing was slow and noisy. Book readers on printed material were either non-existent or very few. Computers could be used if the screen reader software had been installed. Magnifiers were non-existent. The Covid-19 pandemic and online learning forced students to be away from campus for longer periods than face-to-face learning. This worsened 'lack of access' issues. If the visually challenged students were off campus, they could not access the braille and reading gadgets. Being home meant laptops, phones, internet, braille and reading gadgets were inaccessible and even assistance by DRC personnel. To some, especially those in rural areas, electricity was also a challenge. Lecturers and DRC officials had to send them braille material to be collected from the nearest place but travelling was also a challenge resulting in them failing to collect the material or accessing them late causing ill preparedness for texts and examinations. Most students living with disabilities had their fees paid by social welfare which normally delayed fees payment resulting in late registration resulting in them failing to access google classroom lessons.

Students with low vision complained about straining their eyes in trying to access material online, for example seeing and reading and following up

power point lecture presentations through google classroom. The visually impaired highlighted that at times during online lectures, diagrams may be used to show information and they missed such information. If a lecturer increase pace during lecture presentation it would be difficult to keep up and to take down notes as they use braille to write. They would need to record the lecture proceedings so that they can take down notes afterwards thereby spending more time on a task. The same goes for the students who have quadriplegic conditions or those whose hands are affected and may have challenges in writing fast. These students also lamented of lacking the technological knowhow to access online learning and to use the necessary gadgets if they gain access to them. The visually impaired require gadgets that have screen reader software on computers/talkback on their phones and magnifiers to use when reading.

Online tests were also a challenge to the visually impaired and those whose hands are affected. They pointed out that their tests are timed and, in most cases, they did not complete the task because of speed. In face-to-face scenarios, they were usually given more time to write but the timed tasks are a real challenge. To make it worse, lecturers were not knowledgeable on the pedagogics of inclusion. Students with physical disabilities, especially those with challenges in walking and those who use wheelchairs, highlighted that network instability was a challenge and they were forced

to move to areas where network was available so that they could attend online lectures, send assignments or access learning material posted on the learning platforms. Movement to such areas would imply seeking assistance from someone to take them there.

This created a more pronounced challenge in rural areas where network challenges are more evident. Areas with uneven terrain were also difficult to manoeuvre for someone using wheelchair, crutches orhas difficulties in walking. Another challenge closely related to this was the unavailability of electricity in rural areas where most of the students with disabilities stay. This means they have to send people to shops, schools and areas where they can have their gadgets charged or they have to go there so that they can attend lectures without fear of running out of battery during lectures. Such challenges in most cases prevent students with disabilities from effective learning, as they tend to miss some lectures.

Students with psychological disability indicated that online learning caused them a lot of anxiety, confusion and depression especially when they are failing to keep up with proceedings or understand material sent to them. They would be more comfortable with face-to-face interactions with their lecturers and classmates when they needed assistance.

Those in rural areas, from poverty-stricken families did not have cell phones or some do not afford data bundles. To some, electricity and

internet connectivity was scarce and unreliable. Sometimes the University would give them access to campus facilities during vacation to access online resources. However, this has financial implications on them too. The result has been largely neglecting and exclusion of the already excluded vulnerable students.

Challenges of online learning experienced by orphans from Child headed families

Most orphans from child headed families are riddled with poverty and students indicated that they could not afford to buy laptops and smartphones to facilitate on-line learning. Student 'A' elaborated that; *"I don't have a laptop or smart phone and I always register late every semester due to lack of funds. Without registration I don't have access to the library to use desktop computers in the library"*. This situation may lead to lagging behind in school work, feelings of inferiority as they compare themselves with other more affording students and in some cases, students may dropout from school.

Students reported on the lack of financial resources to purchase data to access internet for online learning while at home. The issue of not having access to reliable electricity also posed a challenge to as they would miss scheduled lectures due to electricity blackouts. To some, access to online gadgets like SMART phones was a challenge. They only have *"zimbudzi"* simple phones for communication and not for internet

use.

Challenges experienced by female students

Female students from low socio-economic backgrounds indicated that the problem of balancing household chores, doing menial jobs to fend for their families and attending to their school work was of major concern in their daily lives. One student stated, *"My learning environment at home is not conducive as I sometimes fail to read due to other chores and noise from the children. When I am at home, I am expected to do the chores then study at night but I will be so tired, there is a lot to do at home"*. This places the female student at a disadvantaged position, as they are likely to lag behind in their school work or under-perform as their study time is spent on household chores. With feminisation of poverty, few females have access to internet gadgets. Mbanje-Muriwo (2020) revealed that out of 8,5 million recorded users of Econet wireless, in 2019, 5,2 million (59.9%) were males while 3,3 million (41.1%) were females with access to internet. In addition, females were less technological savvy due to socialisation that excludes them from use of technology.

This was also worsened by stereotypical and cultural beliefs that restrict women to household responsibilities. Females have no freedom of movement to internet cafes

or computer centres in town or to visit other male or female colleagues for assistance. In addition to the above, the universities have inexperienced personnel on gender responsive pedagogies. It is even worse for female students from poor backgrounds living in rural areas. Online is a night-mare for orphans from child-headed, rural and poor backgrounds. Pedagogy of inclusion is needed yet it is lacking. The Educational technology specialist and the e-learning manager colluded that the University lacks trained people for diverse pedagogies.

Challenges faced by students coming from rural areas

Students reported that network in the rural areas was generally poor, 75% of the sampled students indicated that they had no electricity at their rural homes. Another student highlighted that *“I have to walk 12km to the nearest shopping centre where I can get electricity and better network coverage so that I can join my online class and sometimes I will be very tired when I get there as it is always very hot”*. These scenarios inevitably make access to online learning a challenge.

Students coming from poor families indicated that they had no financial resources to purchase suitable gadgets for online lecturers. Another student stated that *“in my case data is a luxury especially getting myself a smartphone because of the responsibilities of my siblings”*.

Learning environments, online learning and quality education

The learning environments were described as unfavourable by more than half of the respondents due to disturbances such as noise and being compelled to attend to household chores. The majority of students reported that blended learning does not afford them access to quality education. One of the students elaborates that, *“I can barely afford to buy data bundles so I get updates from friends who would have attended the online lecture so I can’t ask questions if I don’t understand what they learnt”*. This revelation indicates that students get learning materials offline from their peers after the online lecture, a situation that immensely compromises the quality of learning.

Blended learning was appreciated by a few students who felt that online learning complemented face to face learning and was cheaper in some ways. One student reported that *“blended learning makes it easier to do group work and discussions and it was less expensive than being at school physically as accommodation and food were very expensive”*. Blended learning was ideal to students who had access to the gadgets, electricity, internet and data. Although learning was blended, vulnerable groups tended to lag behind during online learning compared to face to face learning.

Existing Strategies for The Vulnerable Groups

The research established that the library was making endeavours to reach students of all walks of life. They lend candle readers to the

disadvantaged students. They had also introduced a mobile/Physical library with mobile books to lend to students off-campus, however, one has to be at any of the MSU campuses to access the service. The library had a WhatsApp number which was open till midnight in addition to the widget electronic research guide manual by faculty librarians. In fact, every faculty had a dedicated librarian who ran a live chat with students and staff through the internet. There was a team of 5 library officials who train students and staff on the use of electronic resources and offer research consultancy. The library has an electronic resource centre at DRC; however, students lack access to gadgets and proper training. There were 15 candle readers, 50 laptops, 5 desktops, 7 machines with permanent software for screen readers for a total of 62 disadvantaged students with special needs.

These gadgets were distributed across 3 campuses. The University expects students to provide themselves with gadgets and assistive devices including those manufactured at MSU for example, MSU hearing aids were available for sale. The library also had an information desk to assist both students and staff on use of library e-resources, however, students could only access the library resources after registering and those coming from low socio-economic backgrounds tended to register late. In addition to the lack of access to internet resources affordable to vulnerable students, the university lacked to a greater extent the online inclusive pedagogies of diversity.

Proposed Strategies

The University should ensure that all students benefit from blended learning. The respondents felt that the University should resort to the old roadmap where all students attended physical lectures to enable equal access to quality education. Students suggested that *“the Universities should officially continue with full semesters since COVID – 19 restrictions have been lifted so that all students have access to lecturers and learning resources”*. Some felt the university should provide data bundles for students that allow for internet connectivity and online learning. *“The University should offer data bundles to learners or better go back to traditional learning of face-to-face lectures”*. However, online learning can be very useful if disadvantaged students had access to required devices since globally, education is now technologically driven. Reverting to traditional mode of delivery will still mean lagging behind in technology driven education and economy. Lecturers should be trained on the needs of students with disabilities so that they use inclusive approaches in their teaching, for example, explaining diagrams for the benefit of students with visual challenges.

Tertiary institutions can offer training to students on how to use technological gadgets for online learning and how to manoeuvre online learning platforms like Google classroom and moodle among others. Lecturers can also record lectures so that those who need

them can access them at their convenience. Lecturers are also encouraged to use the English language as a mode of instruction as screen reader software distorts other languages in reading. Network service providers should increase accessibility, network speed and reduce costs to ensure no one is left behind. There was need to source for funding to purchase gadgets for students with disabilities to use for online learning. Advocacy on the rights of persons with disabilities, especially in accessing education should be done so that communities, parents/ guardians, educational institutions and government are supportive towards, SDG 4 on quality education. The Government can also offer subsidy for data bundles to enable institutions to purchase data for students.

Conclusion

Inequalities emanating from gender differences, low socio-economic status, living with disabilities, orphanhood and living in child headed families are delving online learning in the education sector. Although the situation was worse during the Covid-19 pandemic lockdown without face-to-face sessions, students continue to be saddled with the challenges because online learning has remained a significant mode of instruction. The University, students and staff had not adequately prepared required resources such as of gadgets, internet connectivity, reliable power supply, skills training and content preparation. The University ICT policies of

technology driven learning and 'bring own device' by students do not address issues of inequality in technology-based learning. The policy of 'bring own device' assumes that every student can afford gadgets for use in online learning.

The government also has a policy of duty-free online gadgets but the foreign currency to buy those remain out of reach for vulnerable groups. The University does not have ICT specialists for the pedagogy of those living with disabilities. The University also does not have ICT personnel experienced in inclusive pedagogy for students with diverse classroom needs. The internet does not reach most rural areas in the country creating a digital divide between rural and urban, between the rich and the poor students as well as between genders. There was lack of both digital content and personnel to support online learning. Content originally designed for face-to-face learning was being used for online learning using traditional delivery strategies.

The educators were unable to design multi-media and graphic academic material and package it for online learning. Universities have not started working on online content or employing personnel with skills for production of material for technology driven education. Although the library is doing its best in assisting various students to access e-resources, all efforts depend on whether the students have electronic gadgets for use. The candle readers, research support, live

chats, widget electronic research guide are effective if issues of inequality and access by students together with technical pedagogical skills by educators have been addressed. Otherwise, inequality, poverty and gender remain as challenges impacting negatively on the quality education received by the affore-mentioned vulnerable groups in Zimbabwe.

Way forward

The paper recommends:

- Training of educators and other support staff on pedagogy of diversity (render responsive andragogy, heutagogy and general special needs, pedagogy to appeal to various vulnerable groups.
- Use of high tech, low tech and offline services for accessibility by all student groups in society
- Deliberate efforts should be made by the government and the institutions to procure technological infrastructure and gadgets with inequalities and issues of vulnerability in mind
- A gradual shift to online teaching with sessions for face-to-face as in the modularization mode of teaching (3-4 weeks face-to-face then teaching online for the remainder of the semester)
- Training of lecturers and other support staff on production of online-content for use in online learning
- Educators produce and upload e-learning module guides with online content for use by students
- QA directorate to produce a handbook to assist in online teaching and learning.
- The Universities improve e-learning infrastructure, reliable energy support and internet connectivity
- Institutions ensure adequate bandwidth, data bundles for lecturers and other e-learning support staff
- The e-learning manager consider having staff knowledgeable in production of graphic content for heritage-based education for use to reduce over-reliance on downloaded material which is not contextual to our situation
- The university employ in DRC an ICT e-learning specialist to assist students with various forms of disability
- The University expand the DRC to have all forms of assistive technologies and desks for assistance and support for each group in the DRC.
- The library establishes a DRC library to cater for various groups to access the content for learning through the use of various devices in addition to the existing efforts.
- The government and institutions deal with known vulnerable students as a separate category when it comes to registration and access to e-learning facilities for example, access to the library uploaded, e-learning materials, assignments and the library e-resources.

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