Research article

Challenges and Interventions of eLearning for Under-resourced Students amid Covid-19 Lockdown: A Case of a Zambian Public University

Charity L.M. Kombe[i] & Dingase E. Mtonga[ii]

Abstract

This article reports the challenges of eLearning faced by under-resourced students in a Zambian public university during the 2020 Covid-19 lockdown. The article further examines the interventions made by the university to mitigate the challenges of eLearning faced by under-resourced students. The article is based on empirical data derived from an online closed- and open-ended questionnaire completed by 73 under-resourced students, and an interview with two university staff. The quantitative and qualitative data collected were analysed using descriptive statistics and thematic analysis respectively. The article provides evidence that under-resourced students encountered various challenges related to eLearning categorised under the following interlinked themes: technical, environmental, psychological, sociocultural, financial, and material. Lack of ICT facilities/devices (laptops, smartphones, tablets and desktops), internet, electricity, and support systems were the most critical barriers to eLearning. Findings further showed that the sampled university made efforts to mitigate the challenges faced by students during eLearning amid the 2020 Covid-19 lockdown. However, there were no focused interventions to specifically address the actual challenges under-resourced students encountered. Regrettably, this suggests that the needs of under-resourced students were overlooked. Thus, the authors suggest strategies universities should put in place to uphold the participation of all students during eLearning regardless of the circumstances.

Keywords

Covid-19 lockdown; eLearning; interventions; under-resourced students; university; Zambia

Introduction

On 18 March 2020, Zambia declared the Covid-19 outbreak when the first two cases were confirmed (Cabinet Office Circular Minute of 2020-CO 7/6/2). The pandemic affected various sectors in the country. The education sector was one of the most affected as learning institutions were compelled to abruptly close down on 20 March 2020 (Hapompwe et al., 2020; Mulenga & Marbán, 2020; Naciri et al., 2020; Sintema, 2020a).

i Dr Charity Lengwe Meki Kombe is a Lecturer and Researcher at Mulungushi University, Kabwe, Zambia. ORCid: 0000-0003-3207-6598. Email: cmekikombe@yahoo.com

ii Ms Dingase E. Mtonga is a Lecturer and Researcher at Mulungushi University, Kabwe, Zambia. ORCid: 0000-0002-9456-8830. Email: mtongadingase@gmail.com

To ensure continued learning, some universities opted to remain open by switching to eLearning (online learning) (Mulenga & Marbán, 2020). While this move was forward-looking, in Zambia eLearning is generally not a popular mode of instruction because the education system is largely based on traditional face-to-face instruction. The unpopularity of eLearning is attributed to various challenges such as power outages, unreliable internet access and lack of eLearning devices by instructors and students. Internet access is also expensive and largely restricted to urban areas (Chola et al., 2020). Poor ICT (Information and Communication Technology) skills and unfavourable academic conditions at home are also serious challenges to eLearning (Chola et al., 2020; Hapompwe et al., 2020; Mulenga & Marbán, 2020; Sintema, 2020b).

Studies conducted outside Zambia have revealed that students experienced challenges relating to eLearning during the Covid-19 lockdown (Dube, 2020; Hussain, 2020; Kapasia et al., 2020; Kunju, 2020; Upoalkpajor & Upoalkpajor, 2020). The aforementioned challenges for effective eLearning were more prominent amongst under-resourced students. This is, amongst others, because they have limited access to essential educational resources which consequently derail their education (Krodel et al., 2008; Adnan & Anwar, 2020; Pawloski, 2020). The desperate needs of these students become even more critical in times of emergencies such as the outbreak of Covid-19. For instance, Upoalkpajor and Upoalkpajor (2020) reported that the impact of Covid-19 was "… severe for underprivileged families … causing intermittent learning' (p. 25). As Dube (2020, p. 137) argues, it seems as though eLearning "favours … well-privileged learners, thus, widening the gap between the poor and the rich …"

In this article, an 'under-resourced student' is one who has limited or no access to certain resources to address a specific situation or negotiate a particular environment. Resources include finances, materials (pertinent instructional resources such as smartphones and computers); support systems (friends, family, and backup resources available to access in times of need); and mentors (any role model and highly proficient person such as a lecturer, ICT staff and student counsellor helping students get the most from their educational experience). The term under-resourced shall also refer to having inadequate resources, being poor and under-funded (Krodel et al., 2008; Payne, 2008).

In Zambia, a number of studies relating to Covid-19 vis-à-vis education have been conducted (Chola et al., 2020; Hapompwe et al., 2020; Mulenga & Marbán, 2020; Naciri et al., 2020; Sintema, 2020a). While some of these scholars (Hapompwe et al., 2020; Sintema, 2020a) observed that under-resourced students experienced eLearning challenges during the 2020 Covid-19 lockdown, strikingly, none of them critically examined the specific challenges such students encountered.

Therefore, the aim of this article is to report on the specific challenges of eLearning faced by under-resourced students amid the 2020 Covid-19 lockdown in a Zambian public university. Furthermore, the article examines interventions made by the sampled university to mitigate the challenges of eLearning faced by under-resourced students. The '2020 Covid-19 lockdown' refers to the period between 20 March 2020 when learning institutions in Zambia were closed to mid-July 2020 when data collection for the current study was concluded.

This discussion is significant as it is expected to inform policy and practice on the actual experiences and challenges under-resourced students go through when it comes to eLearning at universities. The research may also provide insight into universities on how to appropriately respond to challenges faced by under-resourced students to ensure equity in education. The study may also contribute to the existing body of knowledge on the subject and stimulate interest for further research.

Literature Review

Studies on education during the Covid-19 crisis are increasing. Although the specific objectives of the various studies differ, they generally focus on examining the impact of Covid-19 on education, assessment and its various stakeholders – students, teachers, school administrators, families, etc (Hapompwe et al., 2020; Kapasia et al., 2020; Sintema, 2020a; Upoalkpajor & Upoalkpajor, 2020). It is also apparent that the studies generally centre on examining the shift from the traditional face-to-face method of instruction to eLearning owing to the abrupt closure of learning institutions around the world (Naciri et al., 2020).

Seemingly, however, fewer studies at international level (Kapasia et al., 2020; Kunju, 2020) bring up the challenges that under-resourced students have encountered as learning institutions unexpectedly changed instruction from face-to-face to eLearning. There are examples, like a study conducted in India that assessed the impact of Covid-19 lockdown on undergraduate and postgraduate students at various colleges and universities of West Bengal. Findings indicated that students faced challenges relating to eLearning like poor internet connectivity, unconducive study environments, stress, depression, and anxiety. Students from remote areas and marginalised sections of society, in particular, faced unique challenges, like being denied eLearning due to lack of electricity and poor internet connectivity. Consequently, it was recommended that interventions be created to provide space for studying amongst students from the vulnerable sections of society (Kapasia et al., 2020).

While the study by Kapasia et al. (2020) provides useful insights regarding eLearning during the Covid-19 lockdown, amongst whom can be classified as under-resourced students, it does not go into much depth with regards to the detail of the specific challenges that this group of students faced. The current study therefore provides more insight into the discussion considering that it specifically focuses on under-resourced students in relation to the actual challenges of eLearning they encountered during the Covid-19 lockdown in Zambia.

Still in India, a survey was conducted amongst school students across the country to understand the consequences of the Covid-19 lockdown on their studies and the challenges encountered with regards to exploring alternative modes of learning. Findings revealed that the abrupt closure of educational institutions negatively affected students, especially those from the Economically Weaker Section (EWS) of the country. Most EWS students were unable to explore eLearning resources due to lack of eLearning know-how and the inaccessibility of needful eLearning necessities such as smartphones and internet. Further, above 70 per cent of the participants indicated that they found eLearning challenging because they had never done it before, while 79 per cent stated that they

were uncomfortable with it (Kunju, 2020). Findings by Kapasia et al. (2020) and Kunju (2020) provide a good basis for understanding the contextual similarities and differences of eLearning during the Covid-19 lockdown amongst different countries.

In Africa, literature on Covid-19 and education is gaining grounds (Dube, 2020; Hussain, 2020; Upoalkpajor & Upoalkpajor, 2020). Generally, the literature provides evidence on the impact of Covid-19 as well as lessons that have been learnt on the matter under scrutiny. The literature also focuses on the challenges that students and instructors encountered during the pandemic which include lack of appropriate resources for eLearning, unreliable internet connectivity, power outages, unfavourable learning environment, anxiety and stress, amongst others. The marginalised in society such as the under-resourced were the most affected. This is affirmed by scholars such as Dube (2020) who documents rural learners having been left out from learning as a result of lack of various means to access online learning in South Africa. These findings are echoed by Hussain (2020) who argues that the inevitable mode of instruction adopted by the Nigerian Federal Ministry of Education excluded the already vulnerable and disadvantaged students.

Available literature on Covid-19 and education in Zambia focuses on different areas with little attention paid to challenges under-resourced students encountered during the Covid-19 lockdown (Chola et al., 2020; Mulenga & Marbán, 2020; Naciri et al., 2020; Sintema, 2020a). For example, Sintema (2020a) examined the views of teachers of science, technology, engineering, and mathematics (STEM) at a public secondary school on the probable effects of Covid-19 on STEM education vis-a-vis performance of students in STEM subjects. Similarly, Hapompwe et al. (2020) investigated the impact of Covid-19 on grades 7, 9 and 12 learners' national examinations academic performance following the premature closure of schools. Chola et al. (2020) assessed students' perceptions towards eLearning amid the Covid-19 pandemic through an online survey involving 210 Physics students at a medical university in Lusaka. Notably, what cuts across in the literature is the concern about many learners not accessing eLearning.

The foregoing documented literature raises critical questions such as: 'How should governments and universities ensure inclusion and equity for all learners during emergencies?' 'In what ways could the Zambian government ensure continuity of learning amongst the vulnerable and disadvantaged students in times of crisis?' 'What would be the best policies and practices to emancipate the marginalised groups in eLearning during emergencies such as Covid-19 and beyond?'

Conceptual and Theoretical Underpinnings

This study is framed by the concept of Inclusive Education (IE) which, in its most 'traditional' conceptualisation, entails educational institutions that are made or transformed with the purpose of accommodating children with special needs (disabilities) and how they can adapt easily in the school environment (Florian, 2014; Schuelka, 2018; Schuelka et al., 2020). From a broader perspective, IE is used to name the process of recognising and giving 'support to the groups that are in any way marginalized' (Petrović, 2013, p. 31). The broader view of IE looks at the diversity of students and how learning institutions could respond to these differences (Armstrong et al., 2010).

IE can therefore be defined as learning that upholds personal, academic, and professional development of all learners irrespective of their age, gender, language, economic status, disability, and other forms of differences. In this regard, learning institutions are called upon to transform education to meet the needs of the student, i.e. transforming the system to accommodate the student and not vice versa (Armstrong et al., 2010; Tomlinson, 2014; Schuelka, 2018).

IE is anchored on the principle of 'Education For All' with the assumption that every learner has a right to equal and quality educational opportunities and benefits (Cobley, 2018; UNESCO-IBE, 2016). The provision of quality education is in line with the fourth Sustainable Development Goal which emphasises inclusive and equitable quality education (Boeren, 2019).

The practice of IE calls for an understanding that requires a continuous process which strives to sustain the participation of all students. It also aims at restructuring the cultures, policies, and practices in learning institutions as a response to the diversity of learners (Schuelka, 2018; Schuelka et al., 2020). Schuelka (2018) brings out success elements to effective implementation of inclusive education which include inclusive polices and legal support that promote high outcomes for all students; adequate and equitable distribution of school resources and facilities; sufficient teacher training in inclusive thinking and techniques; flexible curriculum that offers personalisation; and supportive leadership.

Grimes (2010) developed a useful list of indicators to evaluate the level of inclusive education in Laos (Asia) that could be applied in other contexts. These indicators basically focus on vulnerable learners having a sense of belonging in a school; being supported by school staff and treated fairly; their voices valued; access to all lessons; and having a conducive environment to enable them to succeed in their learning.

IE also calls for the "*presence*, *participation*, and *achievement* of all learners" (Booth & Ainscow, 2011; Messiou, 2017). This implies that learners must be in attendance and actively engage in learning in order to have a positive educational experience. Booth and Ainscow (2002, p.3) define participation in terms of collaborative learning in shared learning experiences with learners "being recognised, accepted and valued".

In addition to IE, this study was also framed by ideas advanced under the Critical Emancipatory Research (CER). The CER is associated with the critical theory established at the University of Frankfurt in the early 1920s. The CER has its "philosophical roots in several traditions such as Marx's analysis of socio-economic conditions and class structure, Habermas' notion of emancipatory knowledge and Freire's transformative and emancipatory pedagogy" (Nkoane, 2013, p. 99). The aim of CER is not merely to explain or understand society but to transform it. The task of the researchers therefore is to challenge people in authority and uncover any repressive structures that suppress people and facilitate disparities (Patton, 2002).

The CER also seeks to explain and encourage participation and to shape the world into a better place for all. To do so, CER researchers problematise "historical and social conditions of crisis, oppression, inequality and replace them with emancipatory ones" (Sinnerbrink, 2012, p. 370). The CER endeavours to ensure that no one is excluded from experiences that transform their lives while promoting inclusion, social justice, equality, and human rights.

IE and CER are both relevant to interrogate learning amongst under-resourced students amid the Covid-19 lockdown due to the following reasons. First, the concept of IE and CER aim at ensuring that all categories of people, regardless of their vulnerability, have access to common provisions and equitably participate in experiences that can emancipate them (Grimes, 2010; Nkoane, 2013). Secondly, IE and CER both promote 'emancipatory' values such as equity, social justice, inclusion and human rights amongst disenfranchised groups. Both frames therefore provide a valuable lens to ponder on the challenges of eLearning faced by under-resourced students during the Covid-19 lockdown. Further IE and CER offer a frame to appreciate the 'emancipatory' interventions that could be made by the universities to ensure inclusive and equitable eLearning.

Research Methodology

This research adopted a cross-sectional survey design which employed qualitative and quantitative methods of data collection, where data was collected and analysed at a specific point in time (Creswell, 2014; Yin, 2017).

A public university from Zambia was purposively sampled as it is one of the institutions that conducted eLearning during the 2020 Covid-19 lockdown. The sampling of participants in the study was done in collaboration with the student affairs and student counsellor officers. A list of 83 students who presented themselves as 'under-resourced' by virtue of having limited or no access to finances to meet their educational needs was availed to the researchers by the university. The student affairs and student counsellor officers revealed not having a 'formal' system in which the university captures under-resourced students. They pointed out that those that are classified as under-resourced usually present themselves to the office of the student affairs and student counsellor as such. The fact that the students present themselves to the aforesaid offices implies that the number of under-resourced students could have been more than the 83 captured at the time of the study.

This research employed two data collection methods namely, an online questionnaire created using 'Google form' and interviews. The online questionnaire link was sent to the 83 identified students through email, WhatsApp and Short Text Messages. Ultimately, 73 students successfully participated. An online questionnaire was deemed an appropriate mode of data collection for the students because the study was conducted during the 2020 Covid-19 lockdown.

The questionnaire contained closed- and open-ended questions. Closed-ended questions were used to collect biographical and quantifiable data such as the type of devices and online platforms used by the students during eLearning. The open-ended questions were used to collect qualitative data such as personal challenges related to eLearning experienced by participants during the lockdown.

Face-to-face interviews were conducted with staff in charge of students' affairs (SISA) and a university student counsellor (USC). The two participated in the study by virtue of being custodians of information on under-resourced students. The interview with the SISA and USC focused on obtaining data such as the challenges reported to the university on eLearning by the under-resourced students and how the institution responded to the challenges. The face-to-face interviews were a suitable mode of data collection because

they provided the researchers with an opportunity to gain an in-depth understanding on the subject under investigation.

The quantitative data collected through the online questionnaire was analysed using descriptive statistics and presented in figures and tables. The qualitative data collected through the questionnaire and the face-to-face interview was manually analysed by reading through the data repeatedly; coding and categorising it into themes. The analysed data was presented and interpreted in line with the objectives of the study, the literature review, and conceptual and theoretical underpinnings.

To ensure the validity and reliability of the quantitative findings, the questionnaire was reviewed by experts and piloted while the trustworthiness of the qualitative data was achieved through member checking, an extensive discussion of the results, and use of verbatim quotes obtained from the interviews and questionnaires. The findings were also triangulated through the use of two methods of data collection and the involvement of two categories of participants (Creswell & Creswell, 2017).

Ethical Considerations

Ethical principles were adhered to by obtaining permission from the sampled university to carry out the research focusing on under-resourced students. Consent was obtained from the participants and they were informed of their voluntary participation and right to withdraw from the study. Confidentiality was taken care of by not exposing details of any participant and the sampled institution. Furthermore, no financial benefits were offered to participate in the research (Creswell & Creswell, 2017).

Findings and Discussion

This section presents and discusses the findings of the study. It commences with the biographical data of the students followed by the rest of the findings under two headings derived from the study objectives.

Biographical data of participants

Table 1: Distribution of participants from each school by gender

Faculty/School	Number of participants	Gender	
		M	F
Education	14	07	07
Agriculture & Natural Sciences	05	02	03
Social Sciences	05	03	02
Business Studies	05	02	03
Science, Engineering & Technology	41	32	09
Medicine & Health Sciences	03	01	02
Totals	**73**	**46** (63%)	**27** (37%)

Source: Field data (July 2020)

As indicated in the table, more males (63%) than females (37%) participated in the study (Table 1). This was expected because the list of under-resourced students obtained from the university from which the participants were drawn contained more males than females. As highlighted in the methodology, under-resourced students present themselves to the university in order to be identified as such. Therefore, two questions arise: Could it be that males are more prone to vulnerability than their female counterparts? Are females shy to be identified as under-resourced? These questions still require further interrogation.

Objective 1: Challenges of eLearning faced by students

To contextualise the major findings of the study, results on participants' involvement in eLearning before and during the lockdown are examined. Thereafter, eLearning platforms and devices used by participants during the lockdown are presented and discussed.

Students' involvement in eLearning before and during the lockdown

Most of participants (79%) compared to a few (21%) reported that they had never been involved in eLearning before the lockdown (Figure 1). This raises a question as to why eLearning is under-utilised in the sampled university. This is despite the fact that the sampled university has basic on-campus internet and eLearning facilities. This calls for further research.

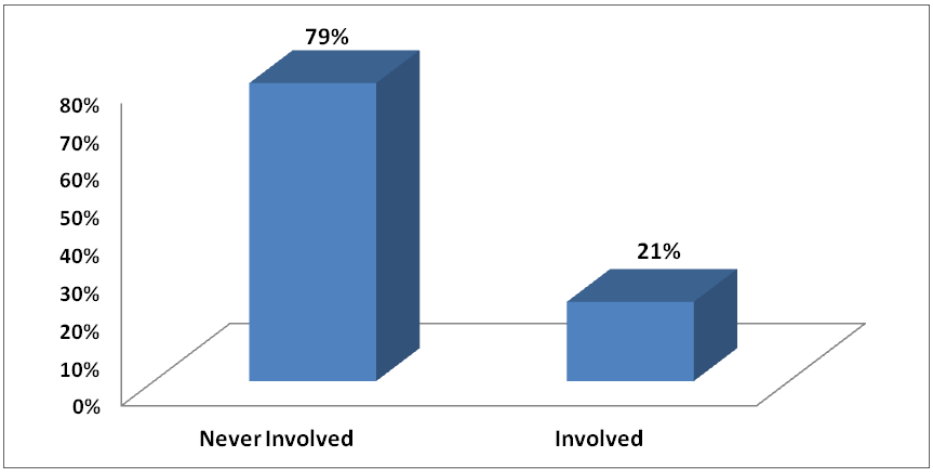

Figure 1: Students' involvement in eLearning before the lockdown (*Source: Field data, July 2020*)

Almost all the students (95%) were involved in eLearning during the lockdown while 5 per cent reported not being involved (See Figure 2). Students who participated in eLearning reported different levels of involvement with 33 per cent indicating that they were 'very involved' to 'involved' compared to 62 per cent who were 'rarely' to 'very rarely' involved. For the 5 per cent of students who reported not being involved in eLearning, the findings suggested that they were eager to participate but excluded due to various challenges to be discussed in the subsequent section.

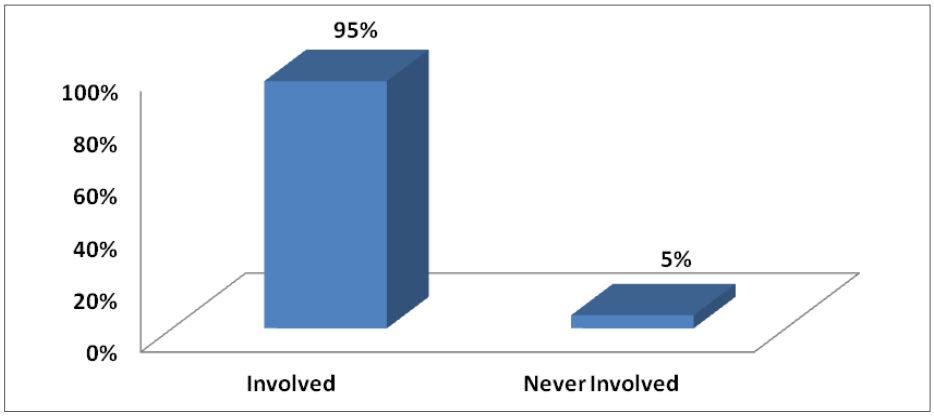

Figure 2: Students involvement in eLearning during the lockdown
(Source: Field data, July 2020)

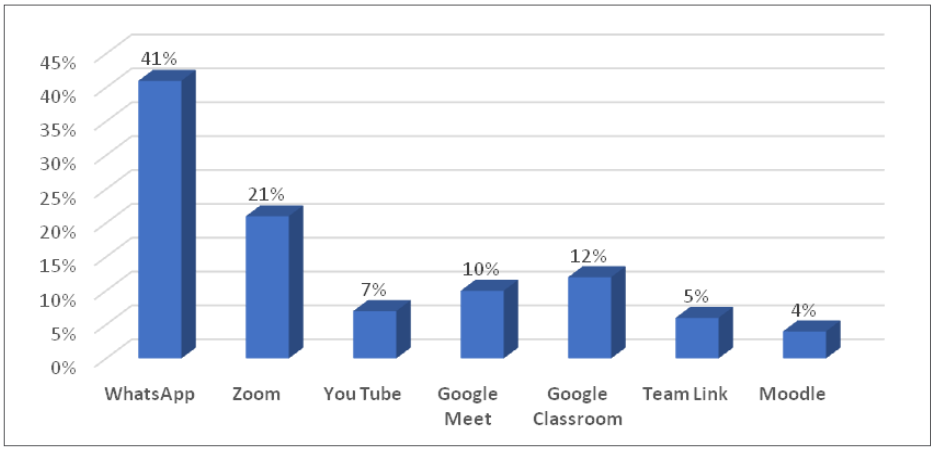

Figure 3: eLearning platforms used during the lockdown
(Source: Field data, July 2020)

Findings (Figure 3) showed that the most frequently used eLearning platform was WhatsApp (41%) followed by Zoom (21%) with Moodle (the official institutional eLearning platform) being the least (4%). Most students stated that they preferred to use WhatsApp because they were familiar with its features and because it was reasonably affordable when it came to data bundle usage. This finding is similar to other study results (Cetinkaya, 2017; Mulenga & Marbán, 2020; Suardika et al., 2020; Susilo, 2014) that showed WhatsApp as an emerging valuable educational tool in other educational set-ups. This is especially for under-resourced students, who may only have smartphones and low data availability.

Moodle was the least preferred platform because students reported not being familiar with it. This reveals gaps in the training the university offered to its students. The students also indicated having some difficulties accessing Moodle due to technical challenges such as poor internet connectivity.

To access eLearning, students used various electronic devices which included smartphones (89%), laptops (7%), desktops (3%) and tablets (1%). This finding aligns with Chola et.al. (2020) who found smartphones to be the most frequently utilised devices amongst students at a private university in Zambia. Worth noting is that many students (78%) reported borrowing devices from parents, siblings, friends, and other relatives, confirming the struggles under-resourced students encounter in their learning (Krodel et al., 2008).

E-learning challenges

Four interlinked themes regarding challenges of eLearning experienced by under-resourced students during the 2020 Covid-19 lockdown were identified as illustrated in Figure 4.

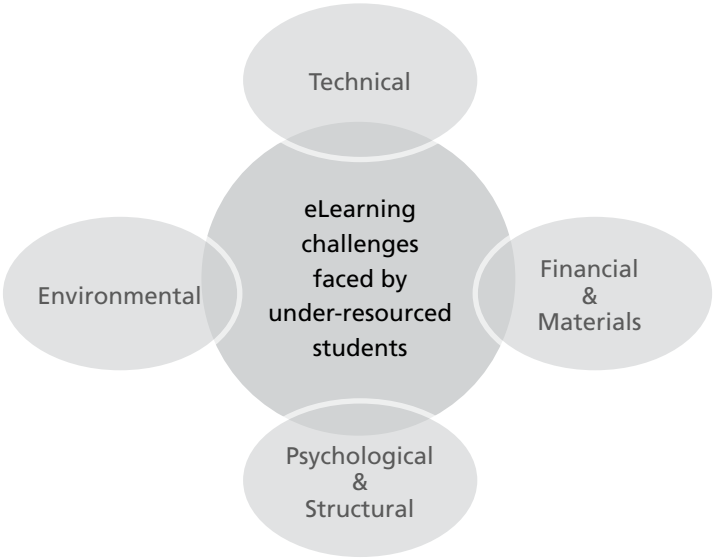

Figure 4: Themes on challenges of eLearning
(Source: Field data, July 2020)

Theme 1: Environmental challenges

Environmental challenges were reported in the form of crowded homes, noisy locations, lack of internet and electricity provision. Overcrowded homes hindered the success of students' eLearning in the sense that they could not secure privacy to effectively participate in the lessons. Furthermore, some family members were reported doing different activities such as playing loud music, and children playing around during lessons. Some students further lamented that the locality of their homes was near the marketplaces where there were various noisy activities. A student lamented:

> *Home is not a convenient place to do e-learning due to so many disturbances … so much activity happening at home…* (Male Participant 20)

Another participant also complained:

> … *my neighbourhood is too noisy to concentrate.* (Female Participant 31)

Students coming from remote parts of Zambia complained that they were not connected to the power grid and internet which completely cut them off from accessing eLearning and important information. The affected students stated finding various means to access online lessons and important information pertaining to their studies. For instance, a student said they had to travel to the nearest place in order to access internet and power, as stated below:

> *I stay in a remote area where there is no power, no internet. The nearest place where I can find internet and power is about 10 to 12 kilometres. This made it very difficult for me to participate in online learning …* (Male Participant 18)

The finding that students were cut off from eLearning due to lack of power and internet connectivity coincides with results established in India where students were reported to have been excluded from accessing eLearning due to similar reasons (Kunju, 2020; Kapasia et al., 2020).

Theme 2: Financial and material challenges

Findings on financial and material challenges to eLearning included inaccessibility to learning materials and lessons due to lack of eLearning devices, data bundles and non-payment of tuition fees. According to the policy of the sampled university, each student was expected to meet at least the 50 per cent payment of tuition fees before accessing the institutional eLearning platform (Moodle).

The finding that students lacked the necessary eLearning devices confirms the high number of students who used borrowed devices. Findings also affirm the negative financial impact the pandemic had on under-resourced families where one student reported a parent having no source of income due to the Covid-19 lockdown, as indicated in the subsequent quotation. This finding is in line with Upoalkpajor and Upoalkpajor's (2020) study results which indicated that the impact of Covid-19 was severe for underprivileged families.

> *E-learning for me was a big challenge because my father did not manage to pay my fees. He has not been paid his salary because the bar where he was working from closed due to coronavirus. This prevented me from accessing Moodle where most materials were uploaded by the lecturers.* (Male Participant 3)

It raises serious concerns that such students were further disadvantaged from the most basic mode of instruction due to unpaid fees. The university could have devised considerate means of collecting fees.

The foregoing finding was affirmed by the SISA who had the following to say:

> *There are a good number of under-resourced students who could not afford a smartphone … Some students deferred their exams due to financial challenges …*

Theme 3: Technical challenges

Technical issues consisting of power outages, poor internet connectivity, lack of computer skills and absence of effective institutional support systems were reported as barriers to eLearning. In terms of load shedding, one of the students had the following to say:

> *There is serious load shedding in our area because power goes even for three days and sometimes, we only have it in the night … e-learning is conducted during the day, so I missed out a lot. At least our friends from well to do families use generators …* (Female Participant 7)

Technical challenges in relation to poor internet connectivity was affirmed by the SISA who reported that the university received numerous calls from students on the failure to access Moodle due to poor internet connectivity as indicated in the excerpt below:

> *As a university, we received many calls from students reporting challenges to access Moodle due to poor internet.*

Students also reported lack of technical skills as a barrier to effective eLearning. They also indicated ineffective and inefficient institutional support systems whenever they encountered technical challenges. A participant complained:

> *… I reported my challenges through the contact numbers given but no help was given by the university … they always said if your friends are managing how are you failing, which was a very unfair statement.* (Female Participant 71)

Owing to the foregoing, it appears that the under-resourced students received little institutional help to mitigate challenges they encountered during eLearning. This is against the principles of inclusive learning which advocate for the provision of equitable access to education by all students (Schuelka, 2018). Considering the situation, the institution could have put in a place an effective 24/7 call centre to address technical challenges.

Theme 4: Psychological and sociocultural challenges

Psychological and sociocultural challenges is another theme that emerged from the findings encompassing stress, anxiety, isolation, inadaptability to change and household chores. Stress, anxiety, and isolation were linked to the various challenges students encountered. For example, some students were anxious as they could not access materials and important information posted on Moodle. Other students also reported stress especially towards the final examinations because they had missed some lessons. In some cases, students expressed feelings of isolation because of unreliable and inconsistent mentors and support systems.

Many students also found it difficult to adapt from face-to-face to eLearning which confirms previous findings that many students find it challenging to adjust to eLearning (Xu & Jaggars, 2013). This difficulty to adapt could be attributed to the fact that the majority of the students had never been involved in eLearning and lacked the necessary technical know-how. For example, two students stated: *"To be honest, I don't like online learning"* (Female Participant 71) and *"We should just open school and learn physically …"* (Male Participant 11). These students' sentiments were corroborated by the SISA who had

the following to say: "most students were used to having face-to-face classes, and suddenly changing to online learning proved to be very difficult for them to adapt …"'

In some cases, students were distracted from eLearning as they were expected to do some house chores during lessons. This was mostly reported by female students who had to engage in various domestic activities such as cooking and taking care of young siblings. For instance, a participant had the following to say:

> *Learning from home is challenging especially for a girl-child, we have to work, cook, and run the house in absence of mom, in short, a lot of duties to attend to.* (Female participant 29)

The above finding is echoed by Chola et al. (2020) who indicated that females could be disadvantaged when it comes to eLearning. However, they did not ascertain the actual factors that made them disadvantaged. Kakumbi et al. (2016) add that the girl-child in Zambia is culturally expected to do various household chores which stands as a barrier to her education. In line with the CER, there is a need to liberate the girl child from oppressive cultural beliefs and practices and replace them with emancipatory ones which advocate for inclusion, social justice, equality and human rights (Sinnerbrink, 2012, p. 370).

Objective 2: Interventions by university authorities to mitigate challenges

In order to have a broader perspective of the interventions that were put in place to mitigate the eLearning challenges encountered by under-resourced students, participants were asked to submit their responses. Most students (92%) reported that the university did not put in place any particular intervention to mitigate the challenges they encountered during eLearning. However, some of them mentioned the free 100 megabytes (MB) bundles provided to all students to enable them to access Moodle, while others talked of the contact numbers they were given to call in case of technical challenges. For example, a student lamented: *"… nothing, the only notable thing I noticed was providing a number from the ICT Department for challenges with Moodle and free 100 MB bundles"* (Male Participant 19).

It is also important to note that the students lamented that the 100 MB offer was not adequate to access all lessons in all courses, especially when it came to downloading big files. One wonders how the allocated MB were arrived at.

The SISA and USC confirmed the submissions by the students on the interventions put in place by the university and added the following: Unlimited access to Moodle following partnership with a local mobile network provider; offering educational tablets (Edu Tabs) on credit; video lessons on how to use Moodle; giving students three chances to upload quiz responses on Moodle in case of failure on first or second attempt; and a 24-hour duration for writing and uploading examination answer scripts for each course.

The researchers observed that the offer of unlimited access to Moodle was not mentioned by any student. This implies that the students may not have been aware of the service offered due to communication lapses in the system. Unlimited access to Moodle was a laudable intervention by the university to ensure inclusion and participation in eLearning for all students. However, the intervention appeared not to have value because most of the sampled students were not conversant with it.

From the findings, the university made efforts to put in place some interventions to ensure students' participation in eLearning. However, further consideration could have been given to under-resourced students in response to principles of IE and CER. For instance, educational tablets were offered on credit to everyone without considering the already existing financial challenges faced by the under-resourced students. This is as reported by the SISA:

> *We have quite a number of students who can't even afford a smartphone and are considered to be really vulnerable … they were encouraged to get Edu Tabs on credit though it was an extra cost added to them.*

The SISA further added:

> *… apart from the arrangement with the two mobile network providers …, nothing was done particularly to respond to the needs of the under-resourced … this interview is actually an eye-opener to start considering planning for such category of students …*

The above findings point to a lack of inclusive thinking and techniques at the sampled university (Schuelka, 2020). This is a gap that requires urgent attention.

Regrettably, the USC (see excerpt below) revealed that there was no defined system to collect data on under-resourced students, making it difficult to have definite data. This is another identified gap that requires immediate intervention. This is because inclusive education calls for a firm system to data collection and management (Grimes, 2010; Schuelka, 2018):

> *… the current arrangement is that students come on their own to present their problems to the student counselling centre … It is from this information where we draw the under-resourced students.*

Overall, the findings indicated that the university might be putting less value on practices and policies that promote inclusion, equality and social justice. This stands against the ideals of IE as well as CER (Schuelka, 2020; Sinnerbrink, 2012).

Limitations of the Study

Findings of this research cannot be generalised to other universities because the study was confined to one public university. However, the results provide useful insights that could be applicable to similar contexts.

Conclusion and Recommendations

The article provides evidence that under-resourced students encountered various challenges related to eLearning during the 2020 Covid-19 lockdown. The challenges are categorised under the following interlinked themes: technical, environmental, psychological, socio-cultural, financial, and material. Lack of devices, internet, electricity and support systems were the most critical barriers to eLearning. Findings showed that the university made attempts to mitigate the challenges students faced during eLearning. However, there were no distinctive interventions to specifically address the challenges under-resourced students

encountered. Sadly, this suggests that the needs of these students were overlooked. The question is, why could this be the case? Could it be that the university does not have effective policies to promote inclusive education? This calls for further research.

In the light of the study findings, the practices of IE and CER, the study makes the following broad recommendations: First, there is a need at national level to have clearly defined policies tied to an effective implementation strategy to specifically cater for under-resourced students. This recommendation is to be taken up by the Zambian Higher Education Authority (HEA) and domesticated at individual higher learning institutions. Secondly, HEA should ensure that lecturers, university leadership and entire staff are oriented in inclusive thinking and techniques in order to promote inclusive education. It is also important that the voices of marginalised groups in education are heard and valued. This could be effectively done through various channels such as student associations.

The following specific recommendations apply to universities: ensure equitable delivery of eLearning to under-resourced students by exploring and implementing low technological modes of eLearning; providing for free affordable devices and access to eLearning platforms; effective training on ICT to students; reducing the threshold on tuition fees and sourcing sponsorship for vulnerable students. In addition, it is imperative that universities devise a firm system of data collection and management of under-resourced students to ensure equitable distribution of resources. Researchers are also implored to use CER to interrogate the plight of under-resourced students as this could be an effective means to emancipate them. Overall, universities should constantly strive to support the participation of all students regardless of the circumstances, especially in times of emergencies (Grimes, 2010; Schuelka, 2018).

Potential Conflict of Interest

The authors declare that they have no competing interest.

Funding

This research received no specific grant from any funding agency, commercial entity, or non-profit organisation.

References

Adnan, M. & Anwar, K. (2020). Online Learning amid the COVID-19 Pandemic: Students' Perspectives. *Online Submission, 2*(1), 45-51. https://doi.org/10.33902/JPSP.2020261309

Armstrong, A.C., Armstrong, D. & Spandagou, I. (2010). *Inclusive education: International policy & practice*. Sage.

Boeren, E. (2019). Understanding Sustainable Development Goal (SDG) 4 on "quality education" from micro, meso and macro perspectives. *International Review of Education, 65*(2), 277-294. https://doi.org/10.1007/s11159-019-09772-7

Booth, T. & Ainscow, M. (2002). *Index for inclusion: Developing learning and participation in schools* (3rd ed.). England: Centre for Studies on Inclusive Education (CSIE). https://www.eenet.org.uk/resources/docs/Index%20English.pdf [Accessed 8 February 2016].

Cabinet Office Circular Minute of 2020-CO 7/6/2. Enhancement of Government Response to the Outbreak of the Coronavirus Disease (COVID-19).

Cetinkaya, L. (2017). The impact of WhatsApp use on success in education process. *International Review of Research in Open and Distributed Learning, 18*(7). https://doi.org/10.19173/irrodl.v18i7.3279

Chola, R., Kasimba, P., George, R. & Rajan, R. (2020). Covid-19 and e-learning: Perception of freshmen level physics students at lusaka apex medical university. *Age, 15*(19), 63. https://bit.ly/3fDUn98

Cobley, D. (2018). *Disability and international development: A guide for students and practitioners.* Routledge. https://doi.org/10.4324/9781315208558

Creswell, J.W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches* (4th ed.). Sage.

Creswell, J.W. & Creswell, J.D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage.

Dube, B. (2020). Rural online learning in the context of COVID-19 in South Africa: Evoking an inclusive education approach. *Multidisciplinary Journal of Educational Research, 10*(2), 135-157. https://doi.org/10.17583/remie.2020.5607

Florian, L. (2014). What counts as evidence of inclusive education? *European Journal of Special Needs Education, 29*(3), 286-294. https://doi.org/10.1080/08856257.2014.933551

Grimes, P. (2009). *A quality education for all: A history of the Lao PDR Inclusive Education Project 1993-2009*. Save the Children. https://bit.ly/3sIPHTi

Hapompwe, C.C., Kukano, C. & Siwale, J. (nd). Impact of Covid-19 on Zambia's 2020 general education examination candidates' academic performance in Lusaka: E-learning issues. http://192.168.1.248:8080/xmlui/handle/123456789/179

Hussain, T.A. (2020). Education and COVID-19 in Nigeria: Tackling the digital divide. SOAS Blog. https://study.soas.ac.uk/covid-19-nigeria-digital-divide/

Kakumbi, Z., Samuel, E.B. & Mulendema, P.J. (2016). Pupil home background characteristics and academic performance in senior secondary schools: A case study of selected secondary schools in Kitwe District, Zambia. *Journal of Education and Practice,* 7(22), 19-25. https://files.eric.ed.gov/fulltext/EJ1112816.pdf

Kapasia, N., Paul, P., Roy, A., Saha, J., Zaveri, A., Mallick, R., Barman, B., Das, P. & Chouhan, P. (2020). Impact of lockdown on learning status of undergraduate and postgraduate students during COVID-19 pandemic in West Bengal, India. *Children and Youth Services Review, 116*, 105194. https://doi.org/10.1016/j.childyouth.2020.105194

Krodel, K., Becker, K., Ingle, H. & Jakes, S. (2008). Helping under-resourced learners succeed at the college and university level: What works, what doesn't, and why? www.ahaprocess.com/files/HelpingURLSucceed_whitepaper05152009.pdf

Kunju, S.S. (Ed.) (2020, April 9). Lockdown hits poor students hard, 86% unable to explore online learning: Survey. https://www.ndtv.com/education/covid-19-lockdown-hits-poor-students-hard-86-unable-to-explore-online-learning-survey-2209009

Messiou, K. (2017). Research in the field of inclusive education: Time for a rethink? *International Journal of Inclusive Education, 21*(2), 146-159. https://doi.org/10.1080/13603116.2016.1223184

Mulenga, E.M. & Marbán, J.M. (2020). Prospective teachers' online learning Mathematics activities in the age of COVID-19: A cluster analysis approach. *EURASIA Journal of Mathematics, Science and Technology Education, 16*(9), em1872. https://doi.org/10.29333/ejmste/8345

Naciri, A., Baba, A., Achbani, A. & Kharbach, A. (2020). Mobile learning in Higher education: Unavoidable alternative during COVID-19. *Aquademia, 4*(1), ep20016. https://doi.org/10.29333/aquademia/8227

Nkoane, M.M. (2013). Creating sustainable postgraduate supervision learning environments through critical emancipatory research. *TD: The Journal for Transdisciplinary Research in Southern Africa, 9*(3), 393-400. https://doi.org/10.4102/td.v9i3.186

Patton, M.Q. (2002). Two decades of developments in qualitative inquiry: A personal, experiential perspective. *Qualitative social work, 1*(3), 261-283. https://doi.org/10.1177/1473325002001003636

Pawloski, T.H. (2020). Challenges and opportunities: Leveraging the power of the brain for students in and of poverty. National Youth-At-Risk Conference. 108. https://digitalcommons.georgiasouthern.edu/nyar_savannah/2020/2020/108

Payne, R. (2008). Under-resourced learners: 8 strategies to boost student achievement. Texas: aha! Process. http://www.ahaprocess.com/wp-content/uploads/2019/09/Under-Resourced-Learners-Excerpt.pdf

Petrović, Z.S. (2013). Implementation of the inclusive educational model in schools. *FACTA UNIVERSITATIS – Philosophy, Sociology, Psychology and History, 12*(01), 29-40. http://facta.junis.ni.ac.rs/pas/pas201301/pas201301-03.pdf

Schuelka, M.J. (2018). Implementing inclusive education. https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/14230/374_Implementing_Inclusive_Education.pdf?sequence=1

Schuelka, M.J., Braun, A.M. & Johnstone, C.J. (2020, January). Beyond access and barriers: Inclusive education and systems change. In *FIRE: Forum for International Research in Education, 6*(1). https://doi.org/10.32865/fire202061198

Sinnerbrink, R. (2012). Critical theory as disclosing critique: A response to Kompridis. *Constellations, 19*(3), 370-381. https://doi.org/10.1111/cons.12003

Sintema, E.J. (2020a). Effect of COVID-19 on the performance of grade 12 students: Implications for STEM education. *Eurasia Journal of Mathematics, Science and Technology Education, 16*(7), em1851. https://doi.org/10.29333/ejmste/7893

Sintema, E.J. (2020b). E-learning and smart revision portal for Zambian primary and secondary school learners: A digitalized virtual classroom in the COVID-19 era and beyond. *Aquademia, 4*(2), ep20017. https://doi.org/10.29333/aquademia/8253

Suardika, I.K., Suhartini, L. & Pasassung, N. (2020). Using Whatsapp for teaching a course on the education profession: Presence, community and learning. *International Journal of Mobile and Blended Learning (IJMBL), 12*(1), 17-32. https://doi.org/10.4018/IJMBL.2020010102

Susilo, A. (2014). Exploring Facebook and Whatsapp as supporting social network applications for English learning in higher education. In *PDE Professional Development in Education Conference 2014*, 11-12 June, Park Hotel Bandung. http://repository.ut.ac.id/id/eprint/4930

Tomlinson, C.A. (2014). *The Differentiated Classroom: Responding to the Needs of All Learners* (2nd ed.). ASCD.

UNESCO-IBE (2016). *Reaching out to all learners: A resource pack for supporting inclusive education*. Geneva: UNESCOIBE. http://unesdoc.unesco.org/images/0024/002432/243279e.pdf

Upoalkpajor, J.L.N. & Upoalkpajor, C.B. (2020). The impact of Covid-19 on education in Ghana. *Asian Journal of Education and Social Studies*, 23-33. https://doi.org/10.9734/ajess/2020/v9i130238

Xu, D. & Jaggars, S. (2013). Adaptability to online learning: Differences across types of students and academic subject areas. https://doi.org/10.7916/D82N59NB

Yin, R.K. (2017). *Case study research and applications: Design and methods* (6th ed.). Sage.

How to cite:

Kombe, C.L.M. & Mtonga, D.E. (2021). Challenges and Interventions of E-learning for Under-resourced Students amid Covid-19 Lockdown: A Case of a Zambian Public University. *Journal of Student Affairs in Africa, 9*(1), 23-39. DOI: 10.35293/jsaa.v9i1.1426