A Systematic Literature Review on e-Learning Challenges in Higher Education during the COVID-19

Mweshi G.K[1], Matafwali M[2]; Buumba M. D[3]; Dokowe T.C.[4]

[1.] *Dean-School of Social Sciences- ZCAS university*
[2]*Lecturer-School of Social Sciences- ZCAS university*
[3]*Librarian -ZCAS university*
[4]*Librarian - ZCAS university*

ABSTRACT: This research paper is about thesystematic Literature Review on e-earning Challenges in Higher Education during the COVID-19. The outbreak of the COVID-19 pandemic created an inescapable implementation of eLearning methods that implied a sudden transformation in the education sector. The adoption of e-learning modes of study and teaching brought about challenges. This paper used a systematic literature review to analyse the e-learning challenges in higher education during the covid 19 pandemic. This was achieved with 3 research questions; what were the eLearning challenges that affected the students in the Sub-Saharan Africa higher education system during the Covid19 pandemic? What were the perceptions of Zambian Students on e-learning during the Covid 19 pandemic?How did eLearning affect the performance of Zambian students in higher learning during the Covid19 pandemic? The findings indicated that access to infrastructure and e-learning systems, inadequate preparedness to transition from face-to-face to e-learning, internet connectivity challenges, internet data costs, and erratic power supply were some of the challenges that came up. Further, perceptions of students and teaching staff also played a major role in the adoption of e-learning methods.

KEYWORDS:E-Learning, Challenges, inadequate preparedness, Erratic power supply, Internet, and internet data costs.

I. INTRODUCTION

With the challenges that were experienced during the Covid. 19, most of the businesses and education units were affected such that several education schedules were also disturbed, these global trends called for a more inclusive blended learning approach using more digital pedagogies to support and accelerate student learning have emerged in higher learning institutions since late 2000 [26]. The outbreak of the COVID-19 pandemic created an inescapable implementation of eLearning creating a sudden transformation in the education sector. eLearning or e-learning" or computer is the assisted learning or computer-aided learning and teaching or education.

According to [10], eLearning is any instruction that is delivered on a computer that has the following characteristics: Includes content relevant to the learning feature; uses instructional methods such as examples or practice exercises to help learning; uses a variety of media elements to deliver the content and methods; builds new knowledge and skills which are linked to improved organizational performance eLearning software [12] was used to create animated videos and interactive learning resources, game-based assignments, quizzes, and discussion boards. Based on the definitions from different scholars, it can be inferred that it is challenging to generally agree on the correct definition of eLearning. [4] also agree that the definition of eLearning is the subject of much debate in the education and technology communities.

E-learning is the software for managing the online distribution of knowledge [25]. The key features of e-learning, including online discussions, chatrooms, online quizzes, polls, and more access to educational content, are the main reasons for students' increasing interest in this new technology [7].

This paper adopted the use of research questions in setting out to address the underlying challenges faced in learning during COVID-19. The following are the questions that guided the review.

II. RESEARCH QUESTIONS

RQ1: What are the eLearning challenges that affected the students in the Sub-Saharan Africa higher education system during the Covid19 pandemic?

RQ2: What were the perceptions of Zambian Students on e-learning during the Covid 19 pandemic?

Q3: How did eLearning affect the performance of Zambian students in higher learning during the Covid19 pandemic?

III. BACKGROUND OF STUDY

To reduce the spread of the virus [25], most education institutions switched to eLearning using available education platforms. [25] estimated that 1,184,126,508 learners had been affected by school closures globally. The crisis provided an opportunity for the use of technology in education on one hand, and it offered students a fresh view of the role of technology in changing learning, supporting sustainable education, and allowing remote educational teaching through e-learning on the other hand [14]

With E-learning considered as a form of academic delivery of content many institutions have benefited from the reduction in the non-closures and not leaving their workplaces for residential classes [12]. Blended learning in higher education has been considered one of the most important trends in education and training today [11]. Blended learning has been appreciated as of greatest improvement to the learning outcomes with the inclusion of Web-based learning resources and activities for higher education students. Most studies have found that blended learning results in an improvement in student success and satisfaction [16].

At the time of the Covid.19 global pandemic, normal life activities were disturbed in all sectors that included the education sector and experienced either partial or complete lockdown. It was during this time when the entire education institutions were closed [5], the teaching-learning process was interrupted, examinations were suspended and students were deprived of learning due to restricted mobility. It became apparent that government and education institutions were left to devise mechanisms to overcome the loss of time and prepare the lecturers and students for the situations arising in the future.

Considering that the pandemic was sudden and education stakeholders were not prepared for the pandemic, it was discovered as being a challenge to adopt other alternative education systems such as e-learning [5]. However, African countries with Zambia included, ICT resources, and technology-based society have been undergoing a phase to resume their educational activities early in the pandemic without facing any significant obstacles or technological transformations. Some countries and education institutions lacking enough resources for this sudden shift to online mode faced substantial issues in resuming their academic activities. But soon, several institutions have tried to switch to eLearning especially for the higher levels of the education mode even though others are still struggling to be in a very smooth, effective, and fruitful way.

IV. STUDY METHODOLOGICAL APPROACH

This review used the systematic review approach to explore literature related to the topic by reviewing existing articles.[22][24]) explain that systematic reviews aim to offer a full overview of research conducted in a specific field until the present date. The review provides objective summaries of what has been written and found about research topics. This is especially valuable or appreciated in wide research areas, where many publications exist, each focusing on a narrow aspect of the field. The authors started by identifying the relevant journal with related articles from the Emerald insight database, google scholar, and Ebsco host. The selected journals which were checked were published between 2015 to 2022.

The authors independently screened the literature using the aforementioned criteria. Following the screening stage, 25 articles were chosen that contained any information about the purpose of this study.

V. DATA ANALYSIS

As a follow, up to the search and selection of literature that was considered for the review; another step was considered to undertake the thematic analysis for the articles which were identified. To achieve this, a format for the structure appropriate to the study was considered corresponding with the published article by [5] As stated, the information for the study was cited, paraphrased, and entered into the spreadsheet. Later, the main subheadings focusing on the wide areas for eLearning were identified. Five different main subheadings were provided dealing with the student's perception of eLearning, lecturers, i.e., students' compatibility with e-learning (5 included articles), teachers' compatibility with e-learning (2 included articles), factors motivating the adoption of e-learning environment included articles), factors hindering the adoption of e-learning environment (3 included articles), and strategies for implementing effective e-learning (5 included articles). It is essential to mention that a particular article was found to deal with more than one central theme. Table 2 provides details of the selected papers regarding study details, the number of citations, and the central theme that the study is focused on.

VI. FINDINGS

E-learning was confronted with numerous challenges in many African universities during the pandemic because it was the only medium available for learning. The review identified various challenges which included the following:

VIII. ACCESS TO INFRASTRUCTURE AND E-LEARNING SYSTEM

Inadequate Information and Communication Technology (ICT) infrastructure were one of the major challenges faced. The COVID-19 pandemic caused an emergency transmission from face-to-face to online. Studies from Zambia, Botswana, Nigeria, Kenya, and others all reported infrastructure-related challenges during COVID-19 which hindered the effective delivery of eLearning. [17]; [2]&[20]. ICT facilities in schools are ill-equipped to foster e-learning. There was no supply of ICT tools such as computers or phones for schools to foster online learning in Kenya added that the lack of supportive structure in Kenya served as a hindrance to children in the access to online content [1].

[21] reports that, even though eLearning platforms were being proposed as a solution at the University of Botswana, the inadequacy of eLearning laboratories or SMART classrooms was one of the impediments faced. [7] also adds that when attempting to access the e-learning platform, students reported difficulties. This could be attributed to the e-learning platform's unusually high volume of user traffic. Furthermore, internet network coverage in most areas of Namibia is poor, which may have contributed to accessibility issues.

VIII. INADEQUATE PREPAREDNESS TO TRANSITION FROM FACE TO FACE TO E-LEARNING

The challenge was experienced because of the varying degree of preparedness of the institutions, Staff, and students. Transitioning was a challenge because some of the lecturers and students did not have any background/adequate training in ICT or knowledge on how to use the different platforms or tools associated with eLearning.

It is worth noting that despite its popularity, the curricula being transited to create e-learning instructions have not been altered and their design is also the same as that used in face-to-face settings. Mere regurgitation of materials extracted from books and classroom courses is a major error of e-learning curricula design. Irrespective of the divide on which seasoned educators are found, there is unanimous agreement on the huge differences that exist between e-learning and conventional classroom learning. (In other words, there is a need for curriculum re-design specifically to accommodate online environments. The transition will require institutions to evaluate, redesign or adapt current curricula and develop methods that position the students as moderators of learning aided by tutors. This will require developing teaching materials and presentations in a digitally and student-friendly way that attempts to preserve the social context of a classroom as this is critical to effective learning.

IX. INTERNET CONNECTIVITY CHALLENGES

Poor internet connectivity by network providers ranged from the slow network as users complained that the network is too slow and weak internet signal strength and physical connectivity experienced in remote areas. Many universities in sub-Saharan Africa were unsure how they would ensure continuity of teaching and learning because the majority of the university community lacked access to Internet services off campus. As a result of the connectivity challenges, some students were unable to access learning materials posted on

Moodle. It causes access disparities that disadvantage or favors different groups of students or individual students The Internet allows learners and instructors to access learning materials at any time and from any location because it creates, fosters, delivers, and facilitates access to materials that are not always available in hard print, such as journal articles and illustration videos (Bose, 2010).

In Ghana, teachers and students lacked access to digital devices and high-speed broadband [3]; [1] Students in Nigeria also complained about insufficient data bundles to access their online classes [1]. Another study by [15] found that poor internet connectivity posed a serious problem for students in Zambia's rural areas. For students who come from remote locations, poor internet connectivity is a barrier to a decent education. One student from Zambia as reported by [19] had this to say: Poor internet is a big challenge. Sometimes phones are off due to a lack of power while lessons are being conducted or work is being posted on various online

X. INTERNET DATA COSTS

The high cost of internet data connectivity is another challenge that was highlighted as an obstacle to e-learning. Many students said that their inability to use the university's e-learning platform was hampered by problems with data prices. This was made worse by the e-learning system occasionally loading too slowly, which caused some students to give up on using it. Costs have been cited as a key barrier to the successful adoption of e-learning in underdeveloped nations [25] including Namibia [14]. In addition [3] determined that the biggest issue affecting pupils in Ghana during the Covid-19 outbreak was accessibility. Experiencing data expenses while attempting to use a non-responsive system naturally led to negative views.

[18] also reports that students at the University of Zimbabwe (UZ) petitioned the institution's authorities asking them to concede plans for e-learning because students cannot afford the cost of the internet. The students described as "unjustified" the increase to 225% of mobile data tariffs by Econet Wireless, a leading mobile network operator.

XII. ERRATIC POWER SUPPLY

This was reported by many researchers in Sub-Saharan as one of the constraints. Adeoya, et al (2020) study reveals that one of the challenges that affected online teaching programs in Nigerian tertiary institutions was the countrywide electricity supply. Many Nigerians who live in urban areas where electricity is expected to be available 24 hours a day reported having electricity a few hours a day. This has prevented many students from participating in online education, whether they live in urban or rural areas. Power outages and restricted availability of electricity are common problems for rural students. Students who utilize mobile devices and PCs frequently face a dead battery, preventing them from completing the online course [1].

XI. HOME ENVIRONMENT

The students did not only have issues with just technology but also with social aspects that affected how they perceived e-learning. Some survey participants claimed that their homes did not promote learning. According to [22], Namibia continues to be one of the most unequal societies in the world, and many students who are enrolled in higher education live in densely populated areas. Therefore, it is not surprising that some family environments may not be favorable for learning.
[17] further indicated that overcrowded homes hindered the success of students' eLearning in the sense that they could not secure privacy to participate in the lessons effectively. 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.

XIII. BARRIERS AFFECTING THE IMPLEMENTATION OF E-LEARNING

The e-learning methodology of teaching is gradually gaining the edge, and soon its prevalence will surpass the traditional teaching methodology. Still, there are specific barriers that are affecting the successful implementation of e-learning systems. These barriers are manifold; barriers from the students' side, instructors', institutional, and technological barriers. Studies [3] have shown that the absence of face-to-face interaction and lack of classroom environment are the major obstacles that hinder the successful implementation of e-learning systems. Similarly, a study [5] conducted on HEIs in Saudi Arabia identified 16 significant obstacles affecting e-learning systems' implementation. The instructors' barriers included the lack of ICT skills, e-learning knowledge, resistance to change, lack of time to develop e-learning courses, and motivation. The obstacles related to technology and

infrastructure included inappropriate infrastructure, low bandwidth internet, and lack of technical support. The barriers related to management included the lack of financial support, e-learning training, inadequate policies, and instructional design; while the obstacles from the students' side included the lack of ICT skills, e-learning knowledge, proficiency in the English, and motivation.

XIV. LACK OF TRAINED INSTRUCTORS IN TERMS OF ICT

Another study by Kamba (2009) proposes somewhat similar barriers to the implementation of e-learning. It posits that lack of trained instructors in terms of ICT and lack of technical support hinder effective e-learning systems. These barriers have a more severe effect on e-learning implementation when it comes to developing countries. Olum et al. (2020) conducted a study in Ugandan universities that attributed the less popularization of e-learning to a low level of awareness regarding e-learning, low computer literacy, the huge financial cost of implementation, and severe connectivity issues.

While, students in Pakistani universities face challenges of low proficiency in the English language, cultural beliefs, and students' inadequate access to the internet and computers [5]. This low proficiency in the English language and lower technological skills result in a lack of self-motivation among students regarding using e-learning systems. Students' low confidence in using technology might also be why students' low motivation to adopt e-learning ultimately become an obstacle to implementing e-learning systems at HEIs [2].

XV. PERCEPTION OF E-LEARNING IN HIGHER LEARNING INSTITUTIONS IN ZAMBIA

Despite having computer knowledge, students in Zambia had mixed perceptions of eLearning. At the University of Zambia, some students had a negative attitude toward learning, particularly the new technologies that come with it. The following were the perceptions of students towards eLearning. [19] carried out a study on Higher Education and Programme Delivery in the Context of COVID-19 and Institutional Closures: Student Responses to the Adoption of e-Learning at a Public University in Zambia. The results revealed that the students' body responded immediately to the adoption of e-learning by staging a campaign against the adoption of e-learning, as captured in

the campaign message.The Student Union stated in their submission to the Ministry of Higher Education that: e-Learning was not feasible, as many factors impede the success of this provision because the University of Zambia is a pro-poor institution. For example, many students were delayed in registering that semester, which defeated the purpose of the provision, as only registered students were able to access the eLearning platform [19].

Students did not consider having access to e-learning on campus to be a benefit. Male students with prior computer knowledge and students with positive attitudes toward new technologies were all less favorable to e-learning on campus than other students.

XVI. POSITIVE PERCEPTIONSPERCEPTION OF E-LEARNING

Although some studies have reported students' negative perceptions of elearning, other studies reported positive perceptions. Some students perceived E-learning to be convenient for lessons, easy for assignment submission, and easily accessible. [9] study conducted at Lusaka Medical University revealed that 97.9% of students were aware of E-learning, while only 2.1% were unaware of it. The majority of students had a positive perception of E-learning, with only a few barriers such as gender, internet access, and domestic activities.

Students perceived E-learning to be suitable for lessons, easier assignment submission, and straightforwardly accessible online learning resources. Students, on the other hand, were opposed to online laboratory and tutorial lessons. A study by [14] on Undergraduate Student Experience Of E-Learning in Higher Education, A Case Study of Unza also had similar conclusions on the perceptions of the students towards eLearning. The study regarding perceptions concluded that Students were enthusiastic about e-learning based on their self-efficacy, enjoyment, usefulness, and eLearning behavior.

XVII. EXPOSURE TO ONLINE TEACHING SKILLS AND COMPETENCIES

While some Lecturers faced challenges as reported by the study conducted by [15] onOnline Teaching during COVID-19 Pandemic in Zambian Universities: Unpacking Lecturers' Experiences and the Implications for Incorporating Online Teaching in the University Pedagogy; the lecturers

also stated that online teaching was beneficial because it allowed them to teach from anywhere at any time. Furthermore, they also claimed that the pandemic had turned out to be a blessing in disguise. According to lecturers, they were exposed to online teaching skills and competencies, as well as opportunities to develop productive and versatile characteristics.

While the education system is moving to a learner-centered model from lecturer-centered learning, as observed by [19], a system of blended learning (that is: traditional and eLearning) is expected to be used for efficient cost-benefit. Some lecturers who were asked to discuss the uptake of lecturing during the Covid 19 pandemic as cited by [11] did state that extra effort was required while teaching through e-learning systems as there was a need for the utilization of tools matching their principal learning style by students who needed to be training. They further stated that effective implementation of e-learning could only be achieved when students are thoroughly trained regarding the use of the technology being employed by HEIs [29]

XIII. PERFORMANCE OF ZAMBIAN STUDENTS IN HIGHER LEARNING DURING THE COVID19 PANDEMIC

Most countries went into lockdown between March and May 2020, leaving the educational institutions with a pedagogical shift from their traditional methods of eLearning, which only catered to distance learning. The rapid distance learning via online learning caused by COVID-19 for some students in rural areas negatively influenced various communication kinds that distance learning implies due to the network's weakness. The lockdown, which was meant to enforce the COVID-19 protocols of social distancing, hindered access to schools and teachers thereby affecting student performance.

A study by [16] reveals that online learning positively impacts students' academic performance. The study further points out that the three categories that define students' academic performance include: students' learning motivation, students' learning achievement, and students' engagement which are discussed below:

XIX. STUDENTS LEARNING MOTIVATION

Online learning has a positive impact on students' learning motivation that later supports the student's academic performance. It can be seen from the average score of 61,25% of total respondents agreeing that online learning does impact their learning motivation while 28,12% of the total respondents strongly agreed with the statements given. This means that 86.37% of total respondents do believe that online learning has a positive impact on their learning motivation. The use of e-learning affects motivation which also has a positive effect on student performance, motivation to learn, and a positive effect on learning outcomes [14]. When the students are motivated, they tend to engage more in the e-learning process. Thus, they can achieve learning objectives (Kim & W. Frick, 2011). The use of Moodle E-learning platform which consists of some interesting features can increase the motivation of undergraduate students for the learning process [2].

Another study by [16] entitled "The Effect of eLearning on Student Learning Achievement" found that the eLearning website significantly affected learning motivation, individual performance, and student learning outcomes. On the other hand, a study by [14] revealed that students at the University of Zambia felt that eLearning did not provide them with learning motivation similar to face-to-face learning.

XX. STUDENTS LEARNING ACHIEVEMENT

[16] further posits that online learning positively impacts students' learning achievement which later supports the student's academic performance. It can be seen from the average score of 63.21% of total respondents agreeing that online learning has an impact on their achievement. 28.21% of the total respondents strongly agree with the statements given thereby implying that 91.42% of total respondents do believe that online learning has a positive impact on their learning achievement. Meanwhile, 8.57% of the total respondents disagreed that online learning has an impact on students' learning achievement. On the other sides, the study conducted by [15] showed that student participation in online tutorials does indeed improve course completion rates and achievement. The online learning environment and supportive online behaviors are both important intermediaries between students' achievement goal orientations and their academic expectations [2].

XXI. STUDENTS' ENGAGEMENT

The same study by [16] revealed thatonline learning hasa positive impact on their learning engagement as seen from the 88,22% of total respondents who were of the view that online learning has a positive impact on their learning

engagement.   According to [12], there is a generally positive relationship between the use of learningtechnology and student engagement and learning outcomes. This is because students are given more opportunities to interact with instructors, collaborate with peers, and engage themselves in the learning process thereby enhancing the overall student motivation and engagement in learning [3].

XXII. DISCUSSION

Although the global decision to close the educational institutions was rational to keep social distancing in a quest to stop the spread of COVID-19; the immediate switch to online learning was coupled with many challenges as most of the learning institutions, especially in Africa were not fully prepared for online learning. One of the reasons for lack of preparedness was the part of students not being familiar with how to navigate eLearning that includes e-learning platforms such as Moodle, Sakai, and Blackboard [27]

A study conducted by Mwiinga, Mulauzi, Daka, and Mwila at the University of Zambia reported that Most of the students felt that they only had basic skills to navigate through the different learning platforms. They were not familiar with Moodle. Another study by [3] on the challenges of eLearning at a university whose results indicate that students were not ready for exclusive eLearning because they lacked knowledge and skill in the use of eLearning platforms. The respondents reported that they had to acquire skills while the learning was taking place, and this proved to be stressful. They further pointed out that due to poor knowledge of the use of eLearning platforms such as Moodle, they felt less motivated to learn online. These results indicate that exclusive eLearning was done in a hurry due to COVID-19 disruptions and so students had to learn to navigate through different platforms while lectures were running. This caused a lot of stress and anxiety among learners. In addition, due to poor knowledge and skills, some students felt less motivated to use eLearning platforms. The study further established that many students had not received prior training on the use of eLearning platforms by the University of Zambia.

A study on Opportunities and Challenges of Exclusive E-Learning during Covid-19: A Case of the Fourth Year Records and Archives Management Students of the University of Zambia revealed that there was poor institutional support for technical challenges. It established that most of the students consulted their colleagues if any problems were encountered on Moodle. [12] in

their study reported similar findings which indicated that the Universities surveyed did require to focus of learner engagement while building on the technical capacity to provide optimal conditions for eLearning. These results show that universities were to a large extent not ready to adopt exclusive eLearning. However, as argued by [19], even if many universities decided to migrate courses online because of COVID-19, this decision was long overdue given the advances in ICTs; eLearning has now become the mode of choice for curriculum decisions. This is because if used correctly with appropriate conditions, eLearning promises many benefits as earlier alluded to.

Despite many challenges faced in eLearning, some institutions reported improved students' performance during the COVID-19 pandemic. The study conducted at ZCAS University revealed that the techniques for e-learning did result in the achievement of good results for academic performance. E-learning has been noticed to be a better platform for the online teacher-student formal classroom relationship. [16] acknowledge that the main benefits of using e-learning technologies are the flexibility and accessibility of the information. Other principal benefits of the use of e-learning technologies are the savings that learning time and efforts, promotion of students' intellectual abilities and skills, improving teacher-student interaction, and expanding students' knowledge [17]. This inadvertently improves student motivation to be engaged in the learning process thereby increasing the chances of academic achievement/performance.

However, a study conducted at Unza during the implementation of eLearning revealed that the students felt isolated and were not motivated to engage in the learning process. They pointed out that with eLearning; they felt more isolated with limited opportunities to have group discussions with their peers because eLearning removes the motivation that comes from learners' physical interaction with instructors and peers. And so, there is a need for instructors to intentionally motivate learners by engaging learners during live online classes; by encouraging peer-to-peer interaction through collaborative activities or one-on-one virtual interactions between instructors and learners. By engaging the learners directly, they become part of the discussion and they hold the information or lesson they are taught much better [14]. These findings are consistent with [4] who argue that student motivation is a critical part of success in education.

XXIII. REFLECTION ON COVID-19 PANDEMIC EXPERIENCES

Higher education institutions should reflect on COVID-19 pandemic experiences- sudden closure of campuses, transition from traditional to remote learning, economic consequences, and uncertain educational plans- in constructing education frameworks [6]. However, educational sectors did not only encounter the challenges of COVID-19 pandemic but also natural calamities [7]. It is important that online learning should be planned carefully to achieve meaningful results. Long-term solutions should be considered in the delivery of instruction to students [13]. But a prompt response by providing accessible, efficient provisional learning support is necessary rather than creating a new educational framework to address immediately the current situation. Thus, engaging students in making the curriculum framework is necessary [8]. And, planning should include the community and stakeholders as well to address future challenges [23].

With the world moving towards digitalization and the students getting more compatible with the eLearning environment, it is likely to contribute to good student cognition, as it is becoming necessary for every student to get hands-on eLearning as the technology [7]. With most students exposed to technology, the benefits of e-learning application usage are usually seen as important [10]. Using e-learning tools has been seen as an appropriate form to help distance learning students to get through their studies and for enhancing students' computer expertise which in turn improves students' engagement in lesson activities and ultimately academic performance

XXIV. RECOMMENDATIONS

i.   The study recommended that technical support is needed for both lecturers and students to enable reliability in online learning.
ii. Further, there is also a need for support in terms of tools as well as engagement with students through distance learning This would come in handy in instances where both the instructors and students do not possess the much-needed skills to teach and learn via the eLearning platforms.
iii. Instructors to focus on more learner-centered styles to keep the students engaged during the lessons.
iv. HEIs to come up with policies that encourage continuous professional development on emerging trends in ICTs to equip both instructors and students with the much-

needed skills and competencies of teaching and learning online.

XXV. CONCLUSION

In conclusion, the role of institutional support in eLearning cannot be overemphasized as it is a crucial factor for the successful implementation of any educational innovation.Therefore, this points to the fact that the institutions needto put more effort into sensitizing the students about available technical support. It should as well be noted that while e-learning has proved to be of great benefit to support the students based geographically in distant places as an alternative method to conventional learning, an improvement is required for the improvement of lecturers' effective utilisation of pedagogical learning experience of the students. An improvement of the robust online infrastructure is also required for the access to avoid impeding on the effectiveness of online learning.

REFERENCES
[1]. Adarkwah, M. A. (2021). An outbreak of online learning in the COVID-19 outbreak in Sub-Saharan Africa: Prospects and challenges. Global Journal of Computer Science and Technology.
[2]. Adeoye, I. A., Adanikin, A. F., & Adanikin, A. (2020). COVID-19 and E-learning: Nigeria tertiary education system experience.
[3]. Aboagye, E., Yawson, J. A. & Appiah, K. N. (2020). COVID-19 and e-learning: the challenges of students in tertiary institutions. Social Education Research, pp.1-8. https://doi.org /10.37256/ser.212021422
[4]. Arkorful, V., & Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. International journal of instructional technology and distance learning, 12(1), 29-42.
[5]. Awan R.K, Gul Afshan G., Memon A.B.(2021) Adoption of E-Learning at Higher Education Institutions: A Systematic Literature Review
[6]. Bolumole, M. (2020). Student life in the age of COVID-19. Higher Education Research & Development, 39(7), 1357-1361.
[7]. Brisbon III, R. H. A., Lovett, H. I., & Griggs, E. D. (2020). Higher Education in New Orleans Post Hurricane Katrina

through COVID19. About Campus, 25(3), 5-7.

[8]. Bryson, J. R., & Andres, L. (2020). Covid-19 and rapid adoption and improvisation of online teaching: curating resources for extensive versus intensive online learning experiences. Journal of Geography in Higher Education, 44(4), 608-623.

[9]. 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.

[10]. Clark, R. C., & Mayer, R. E. (2008). Learning by viewing versus learning by doing: Evidence-based guidelines for principled learning environments. Performance Improvement, 47(9), 5-13.

[11]. Drossos, L., Vassiliadis, B., Stefani, A., Xenos, M., Sakkopoulos, E. and Tsakalidis, A. (2006), "Introducing ICT in traditional higher education environment: background, design, and evaluation of a blended approach", International Journal of Information and Communication Technology Education, Vol. 2 No. 1, pp. 65-78.

[12]. A and Dwivedi P; Bobek S and Zabukovšek S. Z. (2019)Factors affecting students' engagement with online content in blended learning; pp. 1500-1515 © Emerald Publishing Limited 0368-492X DOI 10.1108/K-10-2018-0559

[13]. Johnson, N., Veletsianos, G., & Seaman, J. (2020). US Faculty and Administrators' Experiences and Approaches in the Early Weeks of the COVID-19 Pandemic. Online Learning, 24(2), 6-21

[14]. Kaunda, G., Banda, E., Mphingamaga, S., Zulu, D., & Mukena, M. (2020). Undergraduate Student Experience Of E-Learning In Higher Education, A Case Study Of Unza. The University Of Zambia.

[15]. Lufungulo, E. S., Mwila, K., Mudenda, S., Kampamba, M., Chulu, M., & Hikaambo, C. N. A. (2021). Online Teaching during COVID-19 Pandemic in Zambian Universities: Unpacking Lecturers' Experiences and the Implications for Incorporating Online Teaching in the University Pedagogy. Creative Education, 12(12), 2886-2904.

[16]. Means, B., Toyama, Y., Murphy, R. and Baki, M. (2013), The effectiveness of online and blended learning: a meta-analysis of the empirical literature", Academia.edu., available at: www.academia.edu/download/ 43209482/study__online_and_blended_le arning.pdf

[17]. Mtonga, D. E., Kombe, C. M., & Chali, E. M. M. (2021). Freshers'experiences of online learning at a Zambian public university. Mulungushi University Multidisciplinary journal, 2(1).

[18]. Mukeredzi, T. (2020). Students reject online learning as data costs hiked by 225%. University World News. Retrieved May5, 2020.

[19]. Mwale, N., & Chita, J. (2020). Higher education and program delivery in the context of COVID-19 and institutional closures: Student responses to the adoption of e-Learning at a public university in Zambia.Technology-based teaching and learning in higher education during the time of COVID-19, 9-33.

[20]. Ngwacho, A. G. (2020). COVID-19 pandemic impact on Kenyan education sector: Learner challenges and mitigations. Journal of Research Innovation and Implications in Education, 4(2), 128-139.

[21]. Ntshwarang, P. N., Malinga, T., & Losike-Sedimo, N. (2021). eLearning tools at the University of Botswana: Relevance and use under COVID-19 crisis.Higher Education for the Future, 8(1), 142-154.

[22]. Paul, J., Lim, W. M., O'Cass, A., Hao, A. W., & Bresciani, S. (2021). Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR). International Journal of Consumer Studies. https://doi.org/10.1111/ijcs.12695

[23]. Parnia, A. (2020). As COVID-19 Batters Higher Education, A Proposal to Move Online Fast. New England Journal of Higher Education.

[24]. Rousseau, D.M, Manning,J. & Denyer, D. (2008) 'Evidence in management and organizational science: Assembling the field's full weight of scientific knowledge through syntheses.' The Academy of Management Annals, 2(1):475–515, doi:10.1080/19416520802211651.

[25]. United Nations Educational, Scientific and Cultural Organization. (2020). COVID-19 impact on education. Retrieved from https://en.unesco.org/covid19/educationres ponse. [16 June 2022]

[26]. Van Wyk M.M (2018), Economics student teachers' views on the usefulness of a flipped classroom pedagogical approach for an open distance eLearning environment, Department of Curriculum and Instructional Studies, University of South Africa, Pretoria, South Afarica{Updating}

[27]. Costa, C., Alvelos, H., & Teixeira, L. (2012). The use of Moodle e-learning platform: a study in a Portuguese University. Procedia Technology, 5, 334-343. https://doi.org/10.1016/j.protcy.2012.09.037

[28]. Olum, R., Atulinda, L., Kigozi, E., Nassozi, D. R., Mulekwa, A., Bongomin, F., Kiguli, S. J. J. o. M. E., &Development, C. (2020). Medical education and E-learning during COVID-19 pandemic:awareness, attitudes, preferences, and barriers among undergraduate medicine and nursing students at Makerere University, Uganda. 7, 2382120520973212. https://doi.org/10.1177/2382120520973212

[29]. Birch, D., & Burnett, B. (2009). Bringing academics on board: Encouraging institution-wide diffusionof e-learning environments. Australasian Journal of Educational Technology, 25(1).https://doi.org/10.14742/ajet.1184