An Evaluation on the use of E-Learning Platforms during the COVID 19 Pandemic by Student Teachers and Lecturers at a Teacher Education Institution in Zimbabwe

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Abstract:- **The research focused on evaluating the use of e-learning platforms by student teachers and lecturers at a teacher education institution in Zimbabwe. The study employed interviews to gather data and tables to show data since it used mixed method to research. The study included a sample of 30 students from three intakes. Intake 23 (this cohort was in their final year of the course), Intake 24 (cohort on term seven), and Intake 25 (cohort on Teaching Practice Attachment) along with one lecturer from the department of information and communication technology (ICT) and ten lecturers from other departments in the college. Participants were randomly selected. The study established that e-learning platforms were not effectively used due to lack of ICT tools, financial challenges, lack of knowledge, poor connectivity, poor supporting culture and unfamiliar e-learning platforms. WhatsApp platform was popular among both students and lecturers. Both lecturers and students had challenges in accessing e-learning platforms. The study suggested that use of other e-learning platforms could be improved through donations of more ICT tools to tertiary institutions, provision of cheap e-learning data bundles by the service providers, conducting ICT workshops with both lecturers and students, and installation of more network transmitters in all areas of Zimbabwe. It also recommended that teacher education institutions subscribe to several e-learning platforms.**

Keywords:- E-Learning, Technology.

I. INTRODUCTION

Technology has ushered in new methods of teaching at all educational levels which became essential during the COVID 19 pandemic when face to face learning had to cease globally. In order to stem transmission of the virus in Malaysia, the Ministry of Higher Education ordered public schools and higher education to close, (Shahzad, Hassan, Aremu, Hussain and Lodhi, 2020). Education institutes had to close abruptly in March 2020. The pandemic forced teachers and students to abandon face-face lessons worldwide. They had to stay at their homes. Social gatherings were not allowed as these could fuel the spread of the pandemic and World Health Organisation (WHO) regulations on social distancing meant that no learning activities could continue and traditional methods of teaching could not be employed. Because of its many advantages, the Ministry of Higher and Tertiary, Innovation, Science and Technology Development encouraged learning institutions to consider e-learning more seriously. Lecturers in teacher education institutions had to use the e-learning platforms, to continue with teacher training programs. It was the only way to go for the continuation of learning for learners and tertiary students without face-to-face interaction. According to Simamora (2020) higher education lecturers and students had to employ alternative strategies to respond to changing conditions. Most tertiary institutions continue to reshape their educational systems and teaching strategies to foster interaction (Boondao, Komlayut and Punnakan, 2009).

II. LITERATURE REVIEW

> *Benefits of e-learning*

E-learning is the practice of learning via the use of electronic tools (Simamora, 2020). It includes the use of technological tools such as computers, laptos, ipads and phones with appropriate software for teaching and learning. Sivalingam and Ajith (2018) stated that the sole distance learning tool in the foreseeable future seem to be e-learning. Their work was published and e-learning has unquestionably emerged as the only option at all levels of education as well as in industries. It is regarded as one of the best methods of teaching in higher learning institutions because it has several advantages (Arkorful and Abaidoo, 2014). These authors add that e-learning is economic because no travelling expenses are incurred by both the lecturer and the students. Both students and lecturers can engage in academic tasks in environments they deem conducive at individual level. E-learning makes it possible for lectures and students to share knowledge regardless of location and distance (Maphalala and Adigun, 2021). Hassles for transport to work are reduced. E-learning platforms according to Yucel (2006) provide students with opportunity to work together to solve challenges. E-learning techniques and delivery methods offer students access to education than traditional methods which are rigid (Singh, O'Donoghue and Worton, 2005). When utilizing the later, students and lecturer have to be physically present at the institution. E-learning permits students the opportunity to consult at any time when they encounter

challenges (Guri Rosenbuilt 2018). It gives them the responsibility for their own learning (Yucel, 2006).

Since COVID 19 could not permit continued use of conventional methods of teaching and learning there should be a number of varying platforms that are accessible by both students and their lecturers in the convenience of their homes. These include WhatsApp, Zoom, Skype, Learning Management Systems (LMS), Webex, Google Classroom and Google Meet. According to Gorad (2001) using simply a Wi-Fi connection or data plan one may make a video and voice calls, send text messages, and more using WhatsApp a multiplatform service. WhatsApp's accessibility, cross-platform functionality, simple features are largely responsible for its popularity globally. Additionally, Zoom was considered as a useful tool for online learning. One may set up virtual video and audio conferencing, webinars, live chats, screen-sharing, and other collaborative capabilities using its cloud based video communications, (Bates and Poole, 2003). No account is required to join Zoom meetings, meaning nearly anyone can access it. To gain access to information/meeting lecturers and students share a link and password that are automatically. Additionally, Google Classroom is part of the technology platforms that may be used freely for learning. It is a learning management system (LMS) that simply creates, distributes, grades assignments and engage students in online or distance learning. In addition to the above, Garrison and Vaughan (2008) speculate that technology makes it easy to acquire educational resources and enhance learning opportunities.

➢ *Challenges of E-learning*

E-learning pose challenges to both students and the lecturers. According to Boondao, Komlayut, and Punnakan (2009), there are a number of obstacles that prevent the implementation of e-learning systems in higher education institutions, including connectivity, a lack of ICT tools, and power supply, poor supporting culture, lack of knowledge and financial resources. Moodle (2014) observe that the use of e-learning platforms cannot be successful due to financial incapacitation since in developing countries, there will be needy for purchasing ICT tools, such as smart phones, laptops, Wi-Fi routers and purchasing of data bundles. Andrew and Bradley (2005) observe that instructors and students lack computer skills. Bower and Kamata (2000) hinted that there are various criticisms of poor training in e-learning provided by institutions to academics. Simamora (2020) discovered in South-East Nigeria use of e-learning in response to COVID 19 was inadequately planned because of infrastructural and technical challenges. The author also claims that lecturers and students were unfamiliar with e-learning. The college under study work shopped the lecturers

on the use of some e-learning platforms. Guri-Rosenblit (2018) reports that the majority of universities in Israel have not addressed digital literacy needs of their academic staff. The author also established that 60% of the Stanford History Education Group of students failed to identify Internet sources and 40% of the academic faculty failed to trace information back to its original source. Connectivity is another impeding factor which hinders progress between the students and instructors. Andrew and Bradley (2005) observe that the use of e-learning platforms in tertiary institutions in developing countries has not always been successful, because of infrastructural challenges.

According to Chiripasi (2020) in The Herald of 13/ 07/ 20 in response to the COVID 19 pandemic, Econet introduced an e-learning discounted data bundles package for learning institutions to continue with their learning. As the world is growing in the use of technology, more students are believed to be technology savvy. A study by Carr (2000) in Saudi Arabia found that tertiary institutions were equipped with computer laboratories, where both students and instructors worked to improve their ICT skills, hence making e-learning more effective. The college had the necessary tools and manpower to develop ICT skills to both lecturers and students.

III. METHODOLOGY

This research adopted qualitative research paradigm which permitted studying the phenomenon in its natural setting. Interviews were employed to collect data from both lecturers and students in order to gain insights into their experiences on e-learning platforms during the COVID 19 induced lockdown. These allowed participants to express how they regarded the situation from their own point of view (Cohen, Manion and Morrison, 2018; 506). Convenience sampling was used to select the participants. who were accessible (Vanderstoep and Johnston, 2009; Leavy, 2018). This study targeted eleven lecturing staff members, and ten students from each Intake (Intakes 23, 24 and 25). Data was presented using tables and thick descriptions. The use of statistical data was deemed necessary in this study because the researchers wanted to evaluate the use of e-learning platforms using numbers.

➢ *Research questions*

The study attempts to address the following questions:
1. To what extend have lecturers and students embraced e-learning?
2. What challenges are faced by lecturers and students in utilizing e-learning platforms?

IV. FINDINGS AND DISCUSSION

Table 1 Use of e-learning platforms by lecturers and students

Group	WhatsApp	Google classroom	Google Meet	Zoom	Moodle LMS	Webex	Virtual Classroom
Lecturers	8 (80%)	3(30%)	0	0	1(10%)	0	2 (20%)
Intake 23	8 (80%)	3 (30%)	0	0	0	0	0
Intake 24	6 (60%)	2(20%)	0	0	0	0	0
Intake 25	6 (60%)	4 (40%)	0	0	0	0	0

From the table above, it can be seen that seven e-learning platforms could be utilized by lecturers and students. Results from the lecturers proved that 80% of them were able to deliver their service to the students using Whatsapp, 30% were able to use Google Classroom and 20% of the lecturers had Virtual Classroom for their private business because students were not familiar with that platform. Only three lecturers out of ten were able to deliver their services via Google classroom. From the class of Intake 23 students 80% were able to use WhatsApp platforms while 30% used Google classroom. Amongst the Intake 24 students, 6 out of 10 students were able use WhatsApp platforms compared to only 2 students who were able to use Google classroom. 6 out of 10 students in Intake 25 used WhatsApp, but only 4 out of 10 students managed to log in to Google classroom. In addition to the above findings, only two lecturers showed that they tried to use the Virtual Classroom platform as they used these platforms whilst pursuing their PHDs with international institutions. All the participants from the 4 cohorts were not familiar with the Zoom and Webex platforms. The ICT lecturer also said that lecturers in the college were not adept with e-learning platforms therefore used WhatsApp platform mostly. The lecturer also mentioned that 40% of the lecturers used Google class. It was discovered that lecturers tended to avoid other platforms because they were comfortable with WhatsApp.

According to the study's findings, WhatsApp and Google Classroom were widely used by both lecturers and students at the college. This was a clear sign that some of the platforms were unpopular to them and that impacted the efficacy of the outcomes of e-learning. 80% of the lecturers and 76% of the students could utilize WhatsApp productively this could be due to the fact indicated by Gorad (2011) who cites WhatsApp as user-friendly cost free and multi-platform messaging application. Participants in the study found it to be able friendly and comfortable. It encouraged participants to learn through voice conversations, videos, texting.

WhatsApp and Google Classroom are platforms which are globally popular due to their accessibility, (Garrison and Vaughan, 2005). Google Classroom had 30% for both lecturers and students which managed to use it for the teaching and learning activities. It was used effectively by a small percentage for creating, distributing, grading assignments and engaging on learning remotely due to it accessibility. The reasons could be that its bundles are affordable and data bundles were given at low prices by the service providers.

However, Google Meet had only 10% from one lecturer who had the knowhow and was familiar with the platform. Also, all other platforms had zero percent uptake as they were unfamiliar and un-popular to participants. These include Zoom, LMS, and Virtual Meet just to mention a few. Guri-Rosenblit (2018) found that lack of confidence to utilize advanced technologies by many academics affects the learning/teaching process. Lack of familiarization among staff could be attributed to lack of training or unwillingness/reluctance to embrace technology in teaching and learning (Singh, O'Donoghue and Worton, 2005). They further say that lecturers must possess appropriate skills needed for the success of e-learning. Even though e-learning is student-centered methodology, and according to BJEKIĆ a KRNETA and MILOŠEVIĆ, 2010) based on the social constructivist and constructivist ideas, lecturers must have the pre-requisite skills to facilitate learning. E-learning does not mean that lecturers are no longer necessary.

Table 2 Access to ICT tools

Group	ICT Tools	Percentage
Lecturers	**7**	**70%**
INTAKE 23	**8**	**80%**
INTAKE 24	**9**	**90%**
INTAKE 25	**8**	**80%**

It can be clearly seen from the table above that a good number of participants had access to ICT tools. The 7 lecturers (70%) had access to ICT tools, thus they had enough ICT tools to use and 30% were not able to use the e-learning platforms because they had no access to ICT tools, which hindered the delivery of lectures. Those who had access to ITC tools, when interviewed about how they afford ICT tools they responded as follows, "toziva phone ndiyo yezerawo redu kwete zvimwe izvi" (we only have knowledge in using cellphones not all other ICT tools). Basing on the results from Intake 23, 80% had enough ICT tools to use and 20% could not afford the tools. In Intake 24, students who had access to ICT tools were 90% and 10 % were not able to receive and participate on lessons from any of the e-learning platforms due to unavailability of ICT tools. From the table above, Intake 25 had 80% of students who had access to ICT tools and received their lessons from e-learning platforms and 20% did not have appropriate ICT tools to receive the lectures. Similarly, Jardani (2020) notes that students spend lots of time on technological devices-texting, watching and using other applications. Students interact with technology tools daily but not for teaching/learning purposes. The ICT lecturer said that:

'*Students and lecturers do not have machines to access Virtual Platforms, these platforms are beyond the reach of many.*'

Table 3 Connectivity and financial resources

Group	WhatsApp	Google Class
Lecturers	8(80%)	3(30%)
INTAKE 23	9(90%)	3(30%)
INTAKE 24	6(60%)	2(20%)
INTAKE 25	7(70%)	4(40%)

Financial resources and connectivity involved the procurement of data bundles to participate on Google Class and WhatsApp platforms. From the investigations done, there were data packages from Econet services which required financial resources. The table was drawn basing only on the two used e-learning platforms (WhatsApp and Gloogle Classroom). The research findings on connectivity and financial resources showed that 80% of the lecturing staff was able to connect and get in touch with students on WhatsApp and 30% managed to connect better on Google Classroom. 90% of Intake 23 students was able to use the e-learning platforms because there was better connectivity and could afford WhatsApp bundles and data bundles to use for Google Classroom. 60% of Intake 24 students used the e-learning platforms effectively as they were in areas in with good connectivity in their areas. 70% of the Intake 25 students also managed to use the WhatsApp effectively and appeared on daily basis in their day-to-day learning. The ICT lecturer reported that network challenges affected E-Learning and that unwillingness to shift to new ways of teaching and learning were challenges faced by lecturers. The ICT department workshopped lecturers on utilizing Google Classroom during lockdown. They were more comfortable with the traditional ways of doing things. E-learning requires financial resources which could have been inadequate during the COVID 19 pandemic since some bread winners were not working and resources available were utilized to procure foods stuffs. Simamora (2020) found that students had challenges to procure data bundles to connect to internet resulting in low attendance of classes.

Interviews done showed that an average of 76, 7% of students was able to use and communicate on WhatsApp as connectivity was good at any time and everywhere. Google Classroom had about 30% of the lecturers who managed to use it in the delivery of their service to the students. A larger percentage of 40% from the Intake 24 was recorded as they were in areas where network was strong as the application needed strong network coverage which ranges from 3Gig to 4 Gig network. Intake 23 had about 30% of students who appeared in the class in Google Classroom application.

The participants showed that financial resources for using WhatsApp are cheap and affordable. Concerning the use of Google Classroom an average of 30% students were able to connect and get in touch with their tutors due to good connectivity. Muangkeow (2007) revealed that many students lack resources to successfully take part in online learning. Also, Omora et al (2012) say that economic status affects access to e-learning. During lockdown, lectures moved to online modes in an attempt to complete the academic year though not all students were able to access the internet. Most of the challenges were on the following resources; access to electricity in the households, unstable internet connection and lack of suitable devices like smartphones, laptops or tablets. These resources were likely to dictate the quality of learning that students received.

Internet connectivity is a major determinant factor in the success of e-learning. This failure to use these e-learning platforms was fueled by poor connectivity and financial resources. According to Bates and Poole (2003), connectivity and financial issues are factors linked to the effective use of e-learning platforms in tertiary institutions. Oroma, Wanga and Ngumbuke (2012) report that infrastructure in developing countries is poor and inadequate. Infrastructure includes power, internet and roads. Also, Jardani (2020) indicates that access to internet is a key factor in e-learning. One of the students responded indicated that:

"Haahaaa Econet haisi kubata masaisai NetOne iri nani." (We are facing a serious network problem with Econet so NetOne can be better in its network coverage).

Without sufficient infrastructural resources e-learning may remain a challenge to teaching and learning in teacher education. Maphalala and Adigun (2021) observe that uninterrupted internet services are critical for e-learning. For LMS to have zero percentage it was due to failure by the institution to subscribe to the learning platform.

The results showed that students in remote areas faced poor connectivity which affected their appearances on e-learning platforms. For example, students in developing districts where there are no network boosters were disadvantaged in their learning on e-learning platforms. Oroma et al (2012) aver that in developing countries, rural areas have no access to infrastructural resources since they are restricted to urban areas. The findings also pointed out that those financial resources hindered the effectiveness of some e-learning platforms which required monthly subscriptions. Some platforms require subscription by the institutions (Muangkeow, 2007). This may be necessary considering that some of these free platforms give users limited space to store information. For instance, Google drive which work with Google Class provides free space of 15gig, anything above that extra space the users have to pay. Due to economic hardships the institution failed to subscribe and make the use of these e-learning platforms effective. These platforms include Google Meet and Moodle which is characterized with Mac, Windows, Linux, iOS, Android and other software which a student can use wherever without individual monthly subscriptions. The interviews done showed that most of the students had knowledge in navigating their computers and other ICT tools.

Scarcity of resources (ICT tools) also can hinder e-learning effectiveness in learning institutions, (Andrew and Bradley, 2005). The findings from the study showed that 70% of the lecturers had ICT tools (computers) from the college

and that was an advantage to them. However, ICT tools had a great impact on the students. 68% of the students had functional gadgets but lack of appropriate software affected the use of e-learning platforms. Some had laptops and smartphones but with outdated software systems which then affected their daily participation on e-learning platforms. To that effect, Jardani (2020) suggests that students require hardware and software to work smoothly in e-learning. This is crucial because some technology gadgets may not have software that enables teaching and learning to take place.in such circumstances the students may be left out whilst the lecturers continue with those students who have gadgets with appropriate software.

V. RECOMMENDATIONS

The study made the following suggestions for college lecturers, students, college administration and the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development;

- Lecturers could be work shopped on E-learning platforms and encouraged to utilize these platforms in conjunction with face to face lectures;
- Attending online short-term courses could also help to improve lecturers' skills. They should fight technophobia as the modern world is continuously upgrading to the use of technology so that their work as lecturers becomes easy and interaction with students become more fruitful;
- ICT lectures should be given due attention to enable students to master skills that they can use for teaching and learning confidently;
- The introduction of local LMS which uses local area network and does not require any subscription could be used to assist both lecturers and students to familiarize with LMS. Subscriptions can then be done during dire situations like COVID 19 period;
- The college administration should consider to subscribe to e-learning platforms such LMS, and Zoom Meet to ensure that both lecturers and students acquaint themselves with these platforms;
- Rural electrification can be a solution to shortage of power supplies in rural areas but this requires funding from well-wishers because some communities lack the financial capacity to initiate such projects;
- To address the problem of financial resources service providers could install free WiFi zones in remote areas as well as in towns so that e-learning will be accessible to everyone at any place because the data bundles are not affordable;
- The Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development to work in collaboration with network providers to install network transmitters in all areas of Zimbabwe. This will act as a panacea of poor connectivity which affected e-learning by the students. Also, more technological tools can be donated to tertiary institutions to overcome lack of ICT tools in the institutions;
- Installation of network boosters can solve the problem of connectivity and

- Establishing community information centers which rely on solar systems can be used as a solution to lack of power supplies in remote areas. These will go a long way in helping students to access information even when they are not on campus.

VI. CONCLUSION

The study evaluated the use of e-learning platforms in teacher education during COVID 19 lock down period. It can be concluded from the findings of the study both lecturers and students faced many obstacles to utilize e-learning platforms. The major challenges that impacted on the use of e-learning platforms identified were lack of ICT tools, financial resources, connectivity and interrupted power supplies. -learning platforms were not common and popular to both lecturers and students Zoom, Learning Management Systems, Virtual Classroom, and Skype e-learning platforms were not utilized by both lecturers and students. WhatsApp was the most user-friendly and popular e-learning platform among lecturers and students besides Google Classroom and Virtual Classroom.

REFERENCES

[1]. AI Jardani, K. S. (2020). E-learning in Higher Education: Challenges and Opportunities. *International Journal of Innovation, Creativity and Change.* www.ijicc.net V14, (11), 57-64

[2]. Andrew, R. B. and Bradley, D. V. (2005). *Elements of effective e-learning design.* International Review of Research in Open and Distance Learning, 6(1), 1–10. https://files.eric.ed.gov/fulltext/EJ846619.pdf.

[3]. Arkorful, V. and Abaidoo, N. (2014). The Role of e-Learning, the Advantages and Disadvantages of Its Adoption in Higher Education. International Journal of Education and Research, 2, 397-410. https://www.ijern.com/journal/2014/December-2014/34.pdf.

[4]. Bates, A. W. and Poole, G. (2003). *Effective teaching with technology in higher education:* Foundations for success. Indianapolis, IN: Jossey-Bass. file:///C:/Users/Dr%20C/Downloads/ojs_admin,+Journal+manager,+cjsae_19-1_br_3.pdf.

[5]. BJEKIĆ, D., KRNETA, R. and MILOŠEVIĆ, D. (2010). *TEACHER EDUCATION FROM E-LEARNER TO E-TEACHER: MASTER CURRICULUM.* The Turkish Online Journal of Educational Technology (9) 1. 202 https://files.eric.ed.gov/fulltext/EJ875783.pdf.

[6]. Boondao, S., Komlayut S., & Punnakan W. (2009). Factors in E-Learning in University in Thailand. *Special Issue of the International Journal of the Computer, the Internet, and Management.* (1), 2–4.

[7]. Bower, B. and Kamata A. (2000). Factors influencing student satisfaction with online courses. *Academic Exchange Quarterly,* 4(3), 52–56.

[8]. Carr, S. (2000). *As distance education comes of age, the challenge is keeping the students.* Chronicle of Higher Education, 46 (23), 39–41

[9]. Cohen, L., Manion, L. and Morrison, K. 2018. Research Methods in Education.8th Edition. New York: Routledge.

[10]. Garrison, D. R. and Vaughan, N. D. (2008). *Blended Learning in Higher Education, Framework, Principles, and Guidelines*. San Francisco: Jossey-Bass.

[11]. Gorad, S. (2001). *Quantitative Methods in Educational Research*: The role of numbers made easy. London: The Tower Building

[12]. Leavy, P. (2017). Research Design, Quantitative, Qualitative, Mixed Methods, Arts Based and Community Based Participant Research Approaches. New York: Guilford Press.

[13]. Shahzad, Hassan, Aremu, Hussain and Lodhi (2020)……..Maphalala, M. C. and Adigun, O.T. (2021). Academics' Experience of Implementing E-Learning in A South African Higher Education Institution International. *Journal of Higher Education.* 10, (1) 1-13 EJ1285614.pdf. https://doi.org/10.5430/ijhe.v10n1p1

[14]. Muangkeow, S. (2007) *Integration of ICT in higher education provision*: The case of Thailand. In the Regional Seminar on Making a Difference: ICT in University. Teaching/Learning and Research in Southeast Asian Countries (pp. 1–2). Jakarta, Indonesia.

[15]. Oroma, J. O., Wanga, H. P. and Ngumbuke, F. (2012). Challenges of E-learning in Developing Countries: The Ugandan Experience. Proceedings of INTED2012 Conference. 5th-7th March 2012, Valencia, Spain. CHALLENGES_OF_E_LEARNING_IN_DEVELOPING_C.pdf…… DOI: 10.13140/2.1.4754.1448.

[16]. Sivalingam, D., Balachandar, P. and Ajith, P. (2018). *E-Learning approach in Teacher Education.* Available online: https://C./Users/User/Downloads/E-Learning-approach-in-Teacher-Edn.pdf. dx.doi.org/10.21839/jaar.2018.v3S1.159

[17]. Simamora, R. M. (2020). *The Challenges of Online Learning during the COVID-19 Pandemic: An Essay Analysis of Performing Arts Education Student*. https://scie-journal.com/index.php/SiLeT/article/view/38. DOI: https://doi.org/10.46627/silet.v1i2.38

[18]. Vanderstoep, S. W. and Johnston, D. D. (2009). *Research Methods for Everyday Life. Blending Qualitative and Quantitative Approaches*. San Francisco: Jossey Bass.

[19]. Yucel, A. S. (2006). E-Learning Approach in Teacher Training. *Turkish Online Journal of Distance Education*-TOJDE July 2006 ISSN 1302-6488 (7)4: 11(1-8). Available online: E-Learning_approach_in_Teacher_Education.pdf https://files.eric.ed.gov/fulltext/ED494378.pdf.