The effect of e-learning on the performance of university students in light of covid 19

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Abstract

The outbreak of covid 19 resulted in educational institutions adopting e-learning in order to continue with teaching and learning. Universities across the world saw e-learning as a solution as it supported social distancing which has been used to deter the spread of the deadly virus. Nevertheless, the adoption of e-learning in Zimbabwean universities has been affected by a number of challenges thereby affecting the academic performance of students. The study therefore sought to establish the effect of the adoption of e-learning on the academic performance of university students in Zimbabwe. The study took note of the benefits of e-learning, its challenges as well as mitigation of the challenges. A qualitative approach was adopted in this study. Data was collected through questionnaires and interviews. Purposive sampling was used and the research sample was made up of 40 university students and 10 lecturers. Thematic approach was used to analyse data. The study found out that despite lack of preparedness, students benefited through flexibility, convenience and continuity provided by e-learning. However, e-learning negatively affected students' performance, the main challenge being accessibility. The study therefore recommends that universities and the government at large to should find ways of addressing this such as subsidized data bundles, gadgets and use of free internet hotspots.

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1. Introduction

Schleicher (2020) pointed out that the outbreak of coronavirus disease 2019 (covid19), which started in Wuhan China in 2019 and spread to the rest of the world disrupted various sectors, including that for education. Pokhrel & Chhetri (2021) indicated that more than 1.6 billion learners across the world were affected by the suspension of face to face learning as universities shifted to online platforms as a result of the pandemic that called for social distancing. The covid 19 pandemic resulted in lockdowns and closure of education institutions as a way of preventing transmissions across the world.

The covid 19 pandemic, as alluded to by Alipio (2020) had serious consequences on African countries due to poverty and low testing capacity, thereby greatly affecting the continent's education sector. The abrupt shift from the traditional face to face to online learning posed a myriad of challenges for African universities due to financial constraints, poor internet structure, competing budgetary needs and personnel skills gap. According to Pokhrel & Chhetri (2021), in Sub Saharan Africa, 56 million learners reside in places with poor mobile networks for use during e-learning ,89% have no computers at home whilst 82% do not have access to the internet.

Zimbabwe is one of the African countries which were affected by COVID-19, especially the in the education sector. As alluded to by Bassett & Arnhold (2020), Zimbabwean universities were closed as a result of the pandemic in March 2020 as was the case across the world. Moyo-Nyede & Ndoma (2020), using Afrobarometer survey data from 2017 to 2018 found out that a majority of Zimbabweans have no mobile phones with internet access, computers and dependable electricity supply while only a third of the population frequently went online, a situation that poses a big challenge to e-learning. This is in line with Muchemwa (2021) who concluded that Zimbabwean university lecturers and students were not prepared for online teaching and learning.

This study therefore adds to the database of research on e-learning. It aimed at evaluating how e-learning has affected the academic performance of university students in Zimbabwe after the outbreak of covid 19.

2. Literature Review

The study adopted social constructivism and connectivism theories of learning. Taguma, Feron, & Lim (2018) pointed out that the social constructivist theory interprets teaching and learning as socialization between teachers and learners. The theory considers teachers to be facilitators of learning and not custodians of knowledge. According to the theory, learning is meant for problem solving. This theory becomes relevant for the study as universities were forced to use the interactive e-learning platforms in teaching and learning.

Siemens (2004) considers connectivism as the learning theory for the digital era since it explains how people learn through technologies. The theory departs from the traditional beliefs that learning occurs within a person, rather, the theory considers that as a result of technology, learning can occur outside a person's brain and can be stored in different digital formats This study therefore adopted the connectivism theory since universities have moved to e-learning which is mainly the use of ICT in learning.

2.1 Benefits of e-learning

E-learning has been very mush useful across universities after the outbreak of covid 19. As pointed out by Subedi et al. (2020,) e-learning helped university students to continue with their education during lockdowns. Dumford & Miller (2018) opine that e-learning provides for unique learning styles catering for differences in students, thereby improving students' academic performance. Suresh, Vishnu, Priya & Gayathri (2018) concluded that e-learning provides a faster, less expensive platform for learning. Paschal & Mkulu (2020) also found out that when ICT based instruction was used, students learnt more in less time and loved their classes better. These benefits imply that e-learning is flexible and convenient to the learners as they have been able to continue with their education in the presence of covid 19.

The use of e-learning during the pandemic has also provided a better chance of learning for the physically challenged. Thus, according to Basilaia & Kvavadze (2020), e-learning is a superior platform than face to face for the physically challenged as they can attend lectures even in the comfort of their homes or in environments requiring limited movement. Learners who are physically challenged shy away from participating in class but have all the freedom to do so through e-learning platforms. Thus e-learning is able to provide education to all those who have access to it.

According to Doucet et al. (2020), discussions through e-learning platforms enable students to have a deep understanding of concepts This has been seen to be a good way of building problem-solving, critical thinking

and self-directed learning skills in learners. This is in agreement with Dumford & Miller (2018) who highlighted that e-learning allows students to actively participate during learning activities thereby increasing their learning ability. In contrast, Ahlawat (2020) highlighted that e-learning may result in students failing to understand concepts.

2.2 Challenges of e-learning

E-learning platforms rely on the internet and ICT gadgets for learning. The major problem for learning online, according to Aboagye, Yawson, and Appiah (2021), was accessibility. Murgatrotd (2020), highlighted that accessibility of the internet is a challenge especially in developing countries. Zimbabwean university students were also affected by accessibility as Moyo-Nyede & Ndoma (2020), pointed out that the majority do not have smart phones, computers, internet access as well as reliable electricity supplies. E-learning segregates the rich from the poor (Mwale & Chita 2020). Nhongo & Siziba (2022) also concluded that learners in remote areas will undoubtedly be excluded from schooling during the pandemic.

Chingara, Muparuri & Muzenda (2021) cite costs of connectivity as well as a lack of administrative support as barriers to e-learning and teaching. This was also highlighted by Maphosa (2021) who found out that there was loss of learning due to the poor ICT knowledge and the excessive cost of data. To make matters worse, Tembo & Mugoba (2020) revealed that educational institutions refuse to grant access to e-learning platforms to students who have not completed their tuition fees. Accessibility therefore remains one of the main challenges to e-learning. Thus, the issues to do with lack of ICT gadgets, high cost of data bundles, poor internet connectivity and systems challenges affect students 'e-learning and have a huge effect on their performance.

The use of e-learning at universities increases screen time for the learners. As a result, this may cause health problems such as visual impairment. Kecojevic, Basch, Sullivan & Davi (2020) found out that the introduction of e-learning resulted in high levels of mental health distress and high levels of depression. Mpungose (2021) also found that students fight to alleviate Zoom computer fatigue, increase autonomy, and improve emotional connection.

Ahlawat (2020) concluded that students who are not self-motivated may fail to understand concepts since they require a lot of guidance and supervision. Zamokuhle (2020) found out that students have often felt less excited about the integrity of their studies due to a lack of student contact with the teacher.

2.3 Addressing e-learning challenges

Findings by Maphosa, (2021), demonstrate that bankrolled access to resources and materials is essential for active e-learning uptake. This is supported by Muchemwa, (2021) who concluded that there was need for national and university support of ICT gadgets, e-learning infrastructure, and data bundles. Chingara et al. (2021) highlighted the same issue of provision of resources for the success of e-learning.

Chingara et al. (2021) indicated that there was need for both the students and lecturers to be trained on the use of technology and e-learning platforms. Training would go a long way in ensuring the effectiveness of e-learning, thereby positively impacting on the performance of students.

The existing stock of literature indicates that some scholars found out that e-learning has a positive effect on students' academic performance whilst others found a negative effect.

Doucet et al. (2020) concluded that e-learning platforms enable students to have a deep understanding of concepts and has a positive effect on the academic performance of students This is in support of Dumford & Miller (2018) who highlighted that e-learning allows students to actively participate during learning activities thereby increasing their learning ability and resulting in improved academic performance. The existence of a positive effect of e-learning on students' performance was also raised by Radha, Mahalakshmi, Kumar, and Saravanakumar (2020) in their research.

Mahyoob (2020) found out that most learners were not satisfied with e-learning since expected progress in learning was not being achieved. This is supported by Zamokuhle (2020); as well as Sintema (2020) whose studies revealed that reduced contact between students and lectures resulted in poor performance. Ahlawat (2020) also concluded that university students' understanding after the introduction of e-learning was very poor. This is in agreement with   Tembo and Mugoba (2020 whose study show that e-learning platforms were ineffective in delivering courses, which had a negative impact on learners' academic achievement

3. Methodology

The researcher adopted the constructivist research paradigm., since the study sought to draw inferences from intelligence ,experiences and interactions of students and lecturers on e-learning platforms adopted after the outbreak of covid 19. The study made use of the qualitative research approach since it is the type of approach that supports the collection and interpretation of non-numerical data. The sample for the study was selected using purposive sampling. The sample was made up of 40 undergraduate students who were enrolled at a

university before the outbreak of covid 19 and 10 lecturers. The study made use of online questionnaires and virtual interviews to collect data.

4. Results and Discussion

4.1 Benefits of e-learning

Sixty percent (60%) of the students indicated that they benefited from e-learning. One of the respondents said:

"I was going to work while doing my studies as a result of the introduction of e-learning".

Another student who benefitted from e-learning commented that:

*"I have benefitted from e-*learning as I am able to access learning anytime and from anywhere using my laptop or phone. Lectures could be recorded and accessed later. In addition, there was no need of think about what to wear *since I attended   lectures whilst my camera was switched off".*

These benefits mentioned by respondents are in support of Suresh et al. (2018) as well Subedi et al. (2020) who concluded that e-learning offers flexibility and convenience to learners.

A student who was happy with e-learning responded saying:

 *"E-*learning enabled us to continue learning in the comfort of our homes during the pandemic as face to face was not possible as there was need for social distancing. If e-learning had not been introduced, our studies *would have been delayed so much."*

The benefit of continuity due to e-learning is supported by Muchemwa (2021) who stated that despite the fact that university students were not prepared for e-learning, they were able to continue with their education.

4.2 E-learning challenges

The issue of challenges is one that affected the effectiveness of e-learning in Zimbabwe.

Eighty-five percent (85%) of the respondents were neither aware of nor prepared to use e-learning platforms. One of the students was very frank and said:

*"I did not know any e-*learning platform before the outbreak of covid *19, let alone how it works."*

These results conform to the study by Muchemwa (2021) which concluded that students were not aware of e-learning platforms before the outbreak of covid 19.

In one of the questionnaires, a student responded saying:

"The issue of e-learning is one that was imposed on students to become a new normal".

Another student added:

*"When it was first introduced we were not ready for it even th*ough tutorials were posted on how to use the *platforms."*

These results agree with studies by Ahlawat (2020) and Muchemwa (2021) who concluded that students were not prepared for e-learning after the outbreak of covid 19.

A number of challenges affecting e-learning accessibility were indicated by all the respondents. These include electricity, high data cost, connectivity, lack of ICT devices, system challenges which was highlighted by most of the respondents.

A student who was affected by the problem of accessibility stated that:

"Our small phones could not support the applications. Some of us could not afford to buy data bundles. We had to go to some WIFI hotspots and hack in order to access the internet. Some of us would send assignments that would not reach the lecturer due to system challenges. The network and electricity would cut off during the lectures."

One of the lecturers summarised the challenges as follows:

"Lack of gadgets to use as lecturers, students failing to access online classes due to lack of data and internet connectivity."

As indicated by Tembo & Mugoba (2020), students who pay fees late lose a lot and are not even able to submit assignments such that some end up with low continuous assessment marks while others defer. Some students lamented the fact that the e-learning access to is given after payment of fees saying:

"The university only gave online access to registered students who would have paid fees."

The issue of failure to understand concepts as a result of e-learning was also raised by some respondents. One of these respondents said:

"There are some modules that cannot be taught and understood online. I will give an example of a module that has calculations or formulas. For a lecturer to teach such a module online without a white board and a marker is difficult because some examples need to illustrated. In some modules lecturers would call out formulars and it was difficult to understand"

Zamokuhle (2020) indicated that students failed to understand concepts as a result of e-learning. This is,

supported by Ahlawat (2020) who also concluded that university students' understanding after the introduction of e-learning was very poor. However, this is in conflict with Dumford & Miller (2018) and Doucet et al. (2020) who concluded that e-learning promotes deeper understanding of concepts.

Lack of ICT knowledge also affected e-learning as put across by some of the respondents as one said:
*"We were not familiar with the platforms and lacked knowledge on how to use them. For example, t*he google classroom had so many procedures. You had to enter the class code and had challenges to enrol on the *platform."*

This agrees with a research by Paschal & Mkulu, (2020) which revealed that students in African higher education institutions have difficulty in using technological devices.

4.3 Addressing e-learning challenges
Seventy percent {70%) of the lecturers interviewed indicated that there was need for government and the university to subsidise the cost of ICT devices and data bundles.
One of the lecturers said:
*"The success of e-*learning is only possible if the university were to subsidise the cost of ICT gadgets and data *bundles for students and lecturers."*

The issue of subsidies was also raised by Maphosa (2021), who indicated that there was need for subsidised access to resources and materials is essential for effective e-learning uptake. Muchemwa, (2021) also indicated that for the proper operation of e-learning programs, there was need for national and university support of necessary technological gadgets, e-learning infrastructure, and data bundles.

Data gathered from questionnaires indicates that the majority of students are of the opinion that e-learning should continue only if challenges such as high cost of data and gadgets are addressed so that they may all have access to the platforms as found out by Maphosa (2021) in a study on e-learning. A few respondents indicated that e-learning should always be blended with face to face learning whilst others indicated that they still prefer the traditional face to face method, supporting results by. Aboagye et al. (2021) on e-learning.

Responses suggested that there was need for training of both lecturers and students on the use of e-learning platforms in order to make e-learning effective as some of them do not have technical knowhow The issue of

training was also raised by Chingara et al. (2021) in a related study

4.4 Effect of e-*learning on students' performance after the* outbreak of covid 19
The data that was collected indicates that the adoption of e-learning at universities in Zimbabwe had a negative effect on the academic performance of university students.

One of the students blamed the use of e-learning on deteriorating performance saying:
*"E-*learning affected us in terms of pass rate, especially those modules with calculations. It was really a challenge*."*

Another student explained the effect of e-learning on performance saying:
"E-learning might have been a solution but it affected my performance to a greater extent."

One lecturer said that;
"E-learning resulted in poor academic performance due to poor attendance."

The same sentiments were aired out by a lecturer who said that:
"Formative assessments were not well administered and this resulted in poor results."

In addition, one of the lecturers interviewed was open enough to comment that students' performance deteriorated after the introduction of e-learning and is now improving as both lecturers and students get accustomed to the new way of teaching and These results tally with Tembo & Mugoba (2020) who concluded that e-learning negatively affects students' academic performance and are in conflict with Dumford & Miller (2018) as well as Doucet et al. (2020) who found a positive effect.

5. Conclusion and recommendations
The results from the study show that the adoption e-learning negatively affected the academic performance of university students in Zimbabwe. Students were not aware of e-learning platforms and were therefore not prepared for e-learning. The main challenge of e-learning is accessibility for both lecturers and students. It is important to note that students benefited due to the flexibility and convenience provided by e-learning such that they were able to continue with their studies during the pandemic. From the findings, it can be concluded that e-learning offers the best alternative in times of disasters and can improve performance if the challenges

faced by students and lecturers are addressed.

The researchers therefore recommend that the government and universities should engage service providers to offer subsidized ICT devices and data bundles. Universities should, through their innovation hubs, manufacture ICT devices and charge all first year students for the gadgets on their fees and thereafter charge data cost in their fees. It is also advisable that universities should establish open air internet hotspot-centres in towns and cities.

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