

## **The Use of E-learning During COVID-19 Pandemic Era**

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Communication in teaching and learning space has never been the same following the outbreak of the COVID-19 pandemic. The crisis of COVID-19 has brought about the urgency for most higher education institutions to adopt e-learning. This response was to save the academic year. Hence, this study explores how e-learning has aided African universities to engage their students in teaching and learning. A quantitative research method was adopted for the collection of data. The survey was made up of 400 questionnaires which were randomly administered to the second-and third-year students in the selected South African university. The findings of the study show that e-learning trends before COVID-19 were unappreciated and unaccepted. Meanwhile, following the outbreak of the coronavirus, e-learning has become one of the most sort-out phenomena. However, several factors such as unawareness, lack of funding, and poor internet connectivity, amongst others have always hindered the use of e-learning platforms. Hence, the study recommends amongst others that adequate awareness be made to educate both lecturers and students on the importance and the continuous use of e-learning. Also, funding should be made available for institutions of learning to enable them to adapt to e-learning. The gains achieved must be maintained and continue post-COVID-19.

*Keywords:* African universities, COVID-19, Coronavirus, e-learning

### **Introduction**

The recent trend in the development of digital technology has advanced rapidly changing the way we communicate and operate in the business world as well as the academic field. For instance, the concept of e-learning has brought wide development in our educational system. Yakubu and Dasuki (2018) as well as Tossy and Brown (2017) argue that e-learning is assisting the higher institution of learning by enhancing the quality of education provided and minimizing various educational costs. Pham et al. (2019) opine that the adoption of e-learning at higher institutions of learning has the potential of assisting the institution by creating solutions to the problem of limited lecture space and allowing students to earn at their convenience to digital course content.

Akoi et al. (2021) and Saragih, Cristanto, Effendi, and Zamzami (2021) believe that there are several mitigating factors hindering institutions from being able to equip their students. *Vis-à-vis*, there are other factors hindering students from being equipped with digital devices that promote e-learning. The study conducted by Almaiah, Al-Khasawneh, and Althunibat (2020) on factors hindering universities and students from being equipped for e-learning show four factors

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which hinder e-learning, and these are technological factors, individual factors, cultural factors and course factors. Previous studies conducted by Aung and Khaing (2015), as well as Dhawan (2020), indicate that insufficient technical support, poor internet connectivity and lack of e-learning policies are factors that hinder universities from equipping lecturers and students from the use of e-learning.

Azmi, Kamin, Noordin, and Nazir (2018) mentioned that in the educational sector, awareness regarding the 4IR is relatively low because it is a recent aspect that involves the inclusion and use of technologies in teaching. On the other hand, the issue of the fourth Industrial revolution (4IR) tends to be receiving very minimal recognition in the African continent, in different systems and parastatals, inclusive of education (Uleanya & Yu, 2019). Aristovnik et al. (2020) opine that with the outbreak of the COVID-19 pandemic, the subject of the 4IR tends to have received due attention abruptly, especially in the education system. Naidoo and Israel (2020) aver that the COVID-19 disruption has indeed led higher education to the reordering of priorities, with a focus on how to salvage the academic year. They further state that the traditional delivery of pedagogy had to be placed on hold, and e-learning perhaps became the only medium of choice for universities (Naidoo and Israel, 2020).

Suffice it to say from the views and discussions of previous scholars, it has shown that e-learning is significant to the growth of the educational system and cannot be without it in our institution of learning. Furthermore, in this 21st century, students need to acquire the necessary skills to be able to compete and meet the demands of the global world. Therefore, the study investigates the use of e-learning during the COVID-19 pandemic at two universities as a case study.

## **Literature Review**

The need to consider previously conducted research within the scope of this study is crucial as it helps to give a guide. It also helps to indicate similar practices or happenings in the field in other parts of the world following previously published works of scholars, especially those in the field. In the context of this study, the literature review is guided by specific headings concerning the subject matter. These headings include Learning Management Systems (LMSs), blended e-learning, advantages of e-learning, disadvantages of e-learning, e-learning in South Africa, and the challenges universities experience when equipping students for e-Learning. This is followed by the conceptual model of the study, research methodology, findings, discussion, and conclusion.

### **Learning Management Systems**

Naidu (2020) explains that the COVID-19 pandemic has prompted many higher institutions of learning to shift their learning practices from the traditional style of learning to online learning. This can be viewed from the area of the use of e-learning platforms such as MOODLE Learning Management Systems (LMS),

and Blackboard, amongst others which were relatively in low usage, receiving little or no attention before the outbreak of COVID-19 (Herayanti et al. 2018). In addition, Chaka (2020) added that the recent outbreak of the Covid-19 pandemic has provided the opportunity for e-learning not only in the business and education world as well as other spheres of human endeavours such as politics, and the economy, amongst others. Furthermore, through e-learning, various meetings, conferences, seminars, and symposia, amongst others are being held online using various platforms like Zoom, Skype, Cisco WebEx Meeting Center, Microsoft Teams, HighFive, BigBlueButton, ON24, and Zoho Meeting amongst others (Chaka, 2020).

Murshitha and Wickramarachchi (2016) indicated that because of the pandemic, has created an opportunity for LMS (Learning Management System) which is an ICT platform through which teaching and learning are delivered. Uziak Oladiran, Lorencowicz, and Becker (2018) add that LMS provides an opportunity by which teaching and learning occur electronically and provides multiple content functionalities. Moorhouse (2020) views that the use of LMS in higher institutions of learning will enhance teaching and learning activities between the lecturer and the student as well as assist in improving the academic performance of the students. Davis, Kong, McBride, and Morrison (2017) opine that LMS provides a significant function in higher education such as the elimination of physical location for teaching and learning, providing access to information and creating an attractive learning environment. Nadeem, Malik, and Noreen (2021) observe that the use of LMS in higher education creates a virtual environment which creates and delivers course content to the students as well as monitors the students' involvement during lectures. Pappas (2020) notes that LMS provides students with the possibility to interact through its features such as video conferencing, threaded discussion and discussion forums. Turnbull, Chugh, and Luck (2019) argue that the main attribute of LMS is the delivery of educational materials and assessment of learning activities. Ghilay (2019) mentions some of the benefits that the higher institutions of learning enjoy using LMS such as lecturer and students access to learning materials and content at anytime and anywhere, a unified place of learning, an increase in student effectiveness in terms of assignment submission and good learning analytics. Nevertheless, having considered LMS, there is a need to gain clarity as regards the term blended learning.

### **Blended E-learning**

Saragih, Cristanto, Effendi, and Zamzami (2021) describe blended e-learning as the combination of face-to-face learning, synchronous and asynchronous. Harahap, Nasution, and Manurung (2019) indicate that this kind of e-learning is used in the facilitation of efficient and effective delivery of courses through the combination of the use of digital technologies and face-to-face teaching techniques. Medina (2018) explains that concerning this type of setting, both the face-to-face and online presences happen continually amidst lecturers and students. Kristanto (2017) and Medina (2018) indicate that blended learning

involves the incorporation of traditional ways of learning and online ways of learning.

Furthermore, diverse educational experts have reported that blended learning is an efficient method of learning because it incorporates both traditional methods of learning and online learning style. Shu and Gu (2018) observe that the combination of traditional face-to-face instruction, asynchronous e-learning and synchronous e-learning will assist lecturers to gain access to interactive communication between lecturers and students using communication devices. According to Tsai and Tang (2017), Dwiyoogo (2018) and Lestari, Rahman, Wirjawan, and Hidayat (2019) show that blended learning assists students to develop both their digital skills and communication skills which enables them to search and download online materials by themselves and communicate freely with other classmates. Anthonysamy, Ah-Choo, and Soon-Hin (2019) add that since blended learning comprises a mixture of online and face-to-face learning, this will assist and interest students to learn at their speed and on their own time. Sahni (2019) notes that if blended learning is appropriately integrated, it is an alternative form of learning which will enhance students' academic excellence and student retention. Blau, Shamir-Inbal, and Avdiel (2020) believe that blended learning presents students with diverse learning materials which can be used to communicate and share information with lecturers and classmates. However, this can result in plagiarism. Nevertheless, note that blending learning can add to lecturers' work schedules thereby making it difficult for lecturers to choose the proper learning style. While there may be challenges experienced by the institution, lecturer and students there are also many advantages that e-learning offers.

### ***Advantages of E-learning***

E-learning has brought numerous advantages through its adoption in the educational sector, especially higher education. Akoi et al. (2021), Raspopovic, Cvetanovic, Medan, and Ljubojevic (2017) and Algahtani (2011) concur that e-learning has a wide range of advantages compared to the traditional mode of learning if it is used properly. Govender and Khoza (2017) and Anwar (2017) reveal that e-learning is significant in the educational sector because it centres on the necessities of each student as an essential factor in the activity of learning instead of the instructors or the institutional needs. Ismael et al. (2021) maintain that many of the advantages of e-learning are centred on students. Azzi-Huck and Shmis (2020) and Shahzad, Chin, Altaf, and Bajwa (2020) opine that e-learning has surfaced as an essential and crucial influence in academic institutions of learning and institutions should endeavour to shift to this learning service. In this regard, Ali et al. (2021) opine those potential challenges such as lack of a venue for gatherings, shyness on the part of students, and fears experienced by students when having physical contact and conversation with people, amongst others are eliminated using e-learning. Suffice it to state that in the advent of the recent COVID-19 outbreak, e-learning in this instance helps to ensure the health and safety of lives as physical contacts which can allow transmission of the Coronavirus disease from one person to another are avoided.

Al Rawashdeh et al. (2021) explains that e-learning helps to motivate and encourage students to interact with one another, thereby expressing their opinions and exchanging views over issues. In this regard, the interaction between students and lecturers is duly encouraged. Jamal (2021) notes that students get to freely express themselves over the subject of discourse, especially those who tend to struggle when interacting with their lecturers. Pande, Wadhai, and Thakare (2016) state that lecturers get to easily communicate with their students as barriers such as classroom management are avoided in this instance.

Pande, Wadhai, and Thakare (2016) indicate that the cost of e-learning is effective because it enables students to avoid travelling long distances. Uleanya, Gamede, and Uleanya (2019) consider the distance between students' homes and campuses as a learning challenge that hampers the learning abilities and academic performances of students. However, with the use of e-learning, such challenges would be avoided. Similarly, distance to campus also poses a challenge to lecturers. Thus, with e-learning, lecturers can overcome such challenges. Baczek et al. (2021) view that e-learning enables institutions to save costs and expenses in erecting structures for teaching and learning. However, with e-learning, such challenges would be catered for, without the nation having to bother so much with required physical facilities and resources.

### ***Disadvantages of E-Learning***

A review of a study conducted by Al Rawashdeh et al. (2021) as well as Yusuf and Al-Banawi (2013) shows that e-learning has some disadvantages such as students having low motivation towards study. Favale et al. (2020) note that students who have bad study habits or are slow in assimilation may fall behind in their academics. Furthermore, some students might get confused regarding the course content or class activities when there is no proper class situation. Pande, Wadhai, and Thakare (2016) view that e-learning can create laxity on the part of students who may be less interested in following the lecture. Dhawan (2020) opines that physical contact in a teaching and learning setting has a way of ensuring the participation of students regardless of their disposition at that very moment. However, in the case of e-learning, this tends to be difficult or impossible in some instances (Dhawan, 2020).

Aslan, Ochnik, and Çınar (2020) note that with the use of e-learning, it may be difficult for a lecturer to spot students who are emotionally stressed and fail to participate in class activities especially in small classes compared to what is obtainable in an e-learning platform. For example, a tired and sleepy student may easily be motivated to stand and take part in-class activities in a physical contact setting, compared to an e-learning setting

Pande Wadhai, and Thakare (2016) opine that e-learning may negatively affect students who may be academically knowledgeable and sound but poor in the use of online communication skills. This adversely affects the learning abilities of such students and puts them in a disadvantaged position. Similarly, Rucker & Downey (2016) as well as Schmidt, Tschida, and Hodge (2016) opine that lecturers

may be knowledgeable and well-grounded on the subject to be taught but may lack the skills to teach using e-learning platforms.

Puljak et al. (2020) indicated another disadvantage which involves assessing students using e-learning in some instances may be difficult or impossible. For instance, assessing students on practical courses may be difficult or impossible when they are expected to role-play in class or perform certain activities which require physical contact with others. Pathak and Vyas (2019) view that e-learning tends to create room for students to cheat compared to when they are assessed through the traditional face-to-face method. A review of the works of Dhawan (2020) and OECD Policy Responses to COVID-19 shows that despite the disadvantages of e-learning, it still has a lot of advantages that inspire users to continue its usage and limit its disadvantages. Following the focus of this study which centres on South Africa, there is a need to explore the trend of E-learning in South Africa. Hence, the next sub-heading gives a brief on e-learning in the nation: South Africa.

### **E-Learning in South Africa**

According to the report from the Department of Education (2003), South Africa is trying all its efforts to become one of the leading countries in Africa in the use of ICT. Government Communication and Information System GCIS (2002) explains that the South African government sees e-education as an important approach to becoming competitive in this global world. As a result of this, the South African government adopted the white paper on the e-Education policy which was instituted in schools to implement ICT in transforming teaching and learning (Department of Education, 2004). South Africa's e-Education policy states that:

“Every South African learner in the general and further education and training bands will be ICT capable (that is, use ICT confidently and creatively to help develop the skills and knowledge learners need to achieve personal goals and to be full participants in the global community) by 2013.” (Department of Education, 2003, p. 19).

The works of Bagarukayo and Kalema (2015) as well as Venter, van Rensburg, and Davis (2012) show that South Africa like many other nations within Sub-Saharan Africa has adopted the use of e-learning systems and platforms. A review of the work of Naidoo, Madida, and Rugbeer (2019) shows that the student population in South Africa is rapidly changing and there are an increased number of students that are considered digital learners. These students tend to crave digital applications; thus, any other older method or process of learning seems to be very reluctantly embraced. Hence, this makes the task of the Department of Education (2004) on the implementation of ICT in transforming teaching and learning crucial. The work of Naidoo, Madida, and Rugbeer (2019) further indicate that students enjoy learning that has a seamless and uninterrupted flow of information. However, e-learning has remained a slowly growing phenomenon in South Africa as well as other African societies. According to Uleanya and Gamede (2019), the slow growth of e-learning in South Africa like other developing and underdeveloped

nations is hinged on several factors such as the high rate of poverty, ignorance, low level of exposure, and low acceptability rate, amongst others. However, in the subject of e-learning, there is a need to explore some of the factors mitigating South African universities in equipping their students for e-learning. Hence, the following sub-heading identifies and explains some of the factors hindering universities from equipping their students for e-learning in South Africa.

### **Challenges Universities Experience when Equipping Students for E-Learning**

In the context of South Africa as is the case with many underdeveloped and developing nations across the globe, which are predominantly African, even with the e-education policy on the implementation of ICTs in schools across the country, there are still gaps in the policy and challenges in their implementation (Mdlongwa, 2012). According to the report from PanAf (2008-2011), and Nkula and Krauss (2014) indicate that despite the significance of e-learning in education, many institutions in South Africa still have challenges in acquiring adequate e-learning facilities. The study conducted by scholars in South Africa on e-learning revealed that the main problem is not because of a lack of ICT resources, but because many instructors are not competent to implement and maximize the possibilities of ICT resources for teaching purposes. Instead, it is being used for administrative purposes such as tying lecture notes, conducting tests and entering marks (Howie and Blignaut, 2009; PanAf, 2008-2011; Mofokeng & Mji, 2010; Ndlovu & Lawrence, 2012; Makgato, 2012). Olasina (2019) conducted a study on the effect of human and social factors on affecting the decision of students to accept e-learning at KwaZulu-Natal University. The findings of the study revealed that attitude, social influence, perceived usefulness, and perceived satisfaction are essential to students' behavioural intention to accept e-learning.

Almaiah Al-Khasawneh, A., and Althunibat (2020) identified several factors or challenges related to the integration and implementation of e-learning and have been classified into four categories namely: individual, course, technological, and cultural factors. Furthermore, in their explanation, these factors or challenges vary from one country to another due to readiness to accept e-learning, diverse cultural beliefs and environment. For instance, Aung and Khaing (2015) observed that poor network facility, poor content development and lack of digital learning and skills are the major challenges in the adoption of e-learning in many developed countries. Suffice to say that there are quite a lot of challenges which influence the implementation of e-learning.

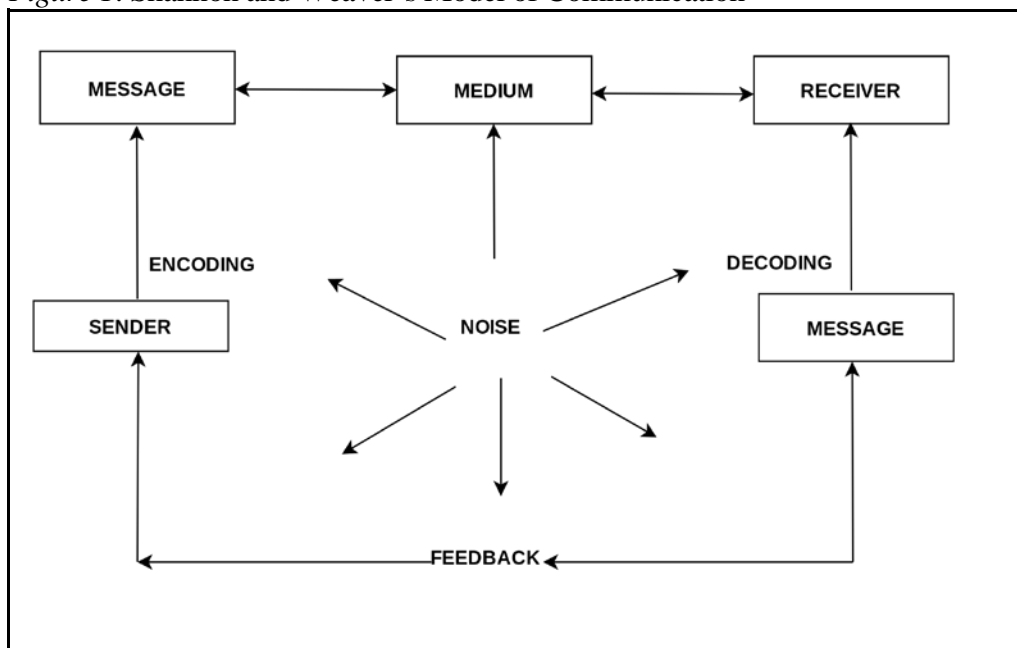
The foregoing shows that the e-Learning channel of communication in African universities is pivotal, however, challenges are hindering the adoption of such. Thus, this study attempts to examine e-learning as a channel of communication in African universities and the challenges deterring universities in Africa from equipping their students for e-learning, using South Africa as a case study. To achieve the focus of this study, the effort is made to proffer answer(s) to the research question guiding it: What are the factors hindering universities in equipping students for e-learning in the selected South African university? The study is crucial as it focuses on two distinct categories of South African

universities: semi-urban and rural, which tends to make it peculiar. This is because different studies tend to focus on the subject matter from the perspective of urban institutions of learning.

### Conceptual Model

In this study, the Shannon and Weaver Model of Communication was adopted. Drew (2021) states that the Shannon and Weaver model aims to describe how communication can be processed and received. Pearhtres (2016) explains that a proper or structured communication model should adopt the following elements: Source, Message, Encoder, Channel, Receiver/Decoder, Feedback, and Noise.

Figure 1. Shannon and Weaver's Model of Communication



Source: Adapted from Hartley and Bruckmann (2002, p. 12).

The diagram in Figure 1 shows the processes involved in the flow of communication which begins with the sender. The sender, according to Kapur (2020) in the process of communication, is regarded as the most significant person in initiating communication. Nordquist (2019a) adds that when the sender initiates communication, it needs to be in a friendly manner. The next is the message which Kapur (2020) refers to as information that is transmitted from the sender to the receiver which can be embedded in oral, non-verbal, and written forms. Karmin (2016) sees a message as an idea that the sender is transmitting to the receiver. This means that the message in communication is the crucial point, idea or focus for which a sender and a receiver meet. Channel is referred to as a means through which a message or information is delivered (Eke et al. 2020). Umeozor (2020) adds that the channel of communication could be oral, or electronic, the use of



public address systems, mobile technology, and video conferencing. In the context of this study, the channel can be the adoption of technology.

The receiver in the opinion of Umeozor (2020) refers to the recipient of the information who decodes the message for it to be understood. Eze, Chinedu-Eze, Okike, and Bello (2020) note that the ability of a message to be properly decoded relies on the receiver's ability to interpret it correctly. In the context of this study, the recipients serve as the students in the selected institutions of learning. While feedback assists the sender to know how the receiver interprets the message (Umeozor 2020). Eunson (2012) observes that feedback allows interaction between the sender and the receiver of the information. In this study, the feedback can be considered as the reactions and responses from students to lecturers and the university community at large concerning the transformation being experienced following the experiences in the fourth industrial revolution (4IR), especially concerning the transition from onsite to online learning.

Lastly, Nordquist (2019b) refers to noise as any unwanted thing in the process of communication. Umeozor (2020) refers to noise as any obstacles or interference which distort the flow of information from reaching its destination. Suffice it to state that noise results in failure in the communication process. In this study, factors hampering the flow of communication from the university community to the students are classified as noise.

In the context of this study, Shannon and Weaver's model of communication is adopted to trace how communication is processed and received in the context of the selected South African universities. This is considering attempts made by the selected universities in equipping the students for e-Learning, especially as it concerns the 4IR, following all the components of the adopted model: Source, Message, Encoder, Channel, Receiver/Decoder, Feedback, and Noise.

### **Research Methodology**

A quantitative method was adopted for this study which provides access to the collection of larger data which aids the generalization of the results. Kumar (2019) explains that quantitative methods can be used in a study to gather information from large sample size and allows generalization of the results. Creswell (2014) views the Quantitative method as a process where data are collected from a large sample in a numerical format. A survey method with the use of a structured questionnaire was adopted to identify e-learning as a channel of communication in the selected South African universities. A purposive technique was adopted in selecting the institutions: semi-urban and rural, as well as the levels: second and third years. These levels of students were selected because they are not new to the systems of the selected institutions. The respondents were randomly selected. This was an attempt to ensure that all who qualify to participate in the study are allowed to do so following the submission of Kumar (2019).

## Data and Sampling

The currently estimated enrolment statistics of students in the selected universities at the time of this study were 33,000, and 16,118, respectively. Thus, following the submission of Du Plooy (2009) which indicates that a 370 sample size is sufficient for a population between 10000 and 49999. Meanwhile, the total estimate of enrolled students at the time of this study in the two selected institutions was less than 49999.

## Analysis

The collected data were analysed using the Statistical Package for the Social Sciences (SPSS) version 25.

## Ethical Consideration

The researchers endeavoured to adhere to ethical principles. Thus, ethical clearance certificates were obtained from the two selected institutions of learning. The researchers ensured that the consent of the respondents was sought before proceeding with the data collection. Anonymity was followed and respondents were free to withdraw from the study at any point if ever they felt uncomfortable.

## Findings

The result of the analysed data is presented following the research question guiding the study: What are the factors hindering universities in equipping students for e-learning in the selected South African University?

*Table 1. Factors Militating Against Equipping Students for E-learning*

S/ N	Variable	University of Zululand			Durban University of Technology		
		True	False	I do not know	True	False	I do not know
1.	The curriculum hinders me from preparing for digital learning	101 50.5%	44 22.0%	55 27.5%	137 68.5%	38 19.0%	25 12.5%
2.	Lack of exposure hinders me from preparing for digital learning	113 56.5%	60 30.0%	27 13.5%	139 69.5%	43 21.5%	18 9.0%
3.	The modules that I do hinders me from preparing for digital learning	122 61%	50 25.0%	28 14.0%	143 71.5%	43 21.5%	14 7.0%
4.	My relationship with my lecturers hinders me from preparing for digital learning	106 53.0%	64 32.0%	30 15.0%	118 59.0%	55 27.5%	27 13.5%
5.	Policies on campus do not promote digital learning	87 43.5%	49 24.5%	64 32.0%	116 58.0%	42 21.0%	42 21.0%

Table 1 depicted the plans that militated against equipping students for e-learning. The first factor was whether the curriculum hindered students from preparing for e-learning; 50.5% from UNIZULU and 68.5% came from DUT to support the assertion. 22% and 19% of the students disagreed while 27.5% and 12.5% from UNIZULU and DUT were neutral. Also, in terms of whether lack of exposure hinders students from preparing for e-learning; 56.5% of students from UNIZULU and 69.5% from DUT supported this claim. Meanwhile, 30% from UNIZULU and 21.5% from DUT were not in support and 13.5% from UNIZULU and 9% from DUT remained undecided. On the issue of whether the modules that students did hinder them from preparing for e-learning received the wholesome agreement of 61% of the students from UNIZULU and 71.5% from DUT.

Additionally, considering the factor of the student-lecturer relationship, 53% of students from UNIZULU and 59% from DUT affirmed that their relationship with the lecturers hindered them from preparing for e-learning. Meanwhile, 32% from UNIZULU and 27.5% from DUT did not agree with the statement, and 15% from UNIZULU and 13.5% from DUT were undecided.

Furthermore, with regards to whether policies on campus promoted e-learning, the findings showed that 43.5% of the respondents from UNIZULU and 58% from DUT believed it did not, 24.5% from UNIZULU and 21% from DUT agreed that it did, while 32% from UNIZULU and 21% from DUT were neutral. This suggests that policies influence the adoption and use of online learning platforms in universities. This implies that more of the respondents hold the opinion that policies on campus did not promote e-learning. In other words, institutions are expected to investigate making policies that promote e-learning in the selected institutions of higher learning, otherwise, disruption is inevitable.

## Discussion

Findings from Table 1 following Shannon and Weaver's model suggest curriculum is a message passed from curriculum designers to the school precisely educators who function as receivers as well as intermediaries communicating to students. When educators communicate with students, they can be considered senders while students in such instances would be the receivers. The finding from the study on curriculum serving as a factor that hinders students from preparing for e-learning aligns with the findings from the works of Eze, Chinedu-Eze, Okike, and Bello (2020) and Otuka (2010) who hold the view that most curricula in higher institutions of learning are inadequate because it lacks the development and design of how to use e-learning embedded into it. In congruence, Elumalai et al. (2020) add that lack of alignment between curriculum and e-learning can hinder students from being equipped with e-learning. Meanwhile, Holmes and Prieto-Rodriguez (2018) had earlier mentioned that a lack of adequate curriculum content can affect the use of e-learning in teaching and learning. The finding also coincides with the work of Eze Chinedu-Eze, Okike, and Bello (2020) which suggests that the curriculum needs to be designed for both the lecturers and students on how to improve their digital skills. In support, Van Nuland, Hall, and

Langley (2020) state that the curriculum in terms of course components need to be designed and aligned with e-learning. Moreover, the government is expected to assist in developing a strategy through which e-learning is embedded into the curriculum so that the quality of teaching and learning is improved. Suffice it to state that the curriculum plays a pivotal role in ensuring the equipping of students for embracing e-learning.

Sequel to the Shannon and Weaver's model, the subject of lack of exposure can affect distinct categories of people which can be categorised as either sender or receiver. For instance, in the context of this study, the sender being the educator can lack exposure in situations, similarly, the receiver can be considered a student. The finding of the study on lack of exposure hindering students from preparing for e-learning agrees with the work of Sino Cruz, Nanlabi, and Peoro (2019) which suggests that proper exposure to the use of e-learning tools can assist its users as well as increase the use of these tools. This is also supported by Longhurst et al. (2020) who state that a lack of exposure to technological tools can hinder students from preparing for e-learning. This also aligns with the deduction from Shannon and Weaver's model which indicates that when the needed technological tools ordinarily should serve as a channel for sending a message from sender to receiver, the flow of communication is bound to be distorted. Suffice it to state that the need for availability of technological tools in equipping students in the selected universities for e-learning is critical.

Furthermore, the content of the modules can be described as the message following Shannon and Weaver's model. The educators (sender) prepare the message (the content of the module) and transmit it to the students (the receiver). The findings of this study on whether the modules (inclusive of their content) affect equipping students for e-learning aligns with the findings of the works of Bovill (2020) and Bovill and Woolmer (2019) that state that lack of adequate module content preparation or design can hinder the students from accessing the modules or not understand the module content. Thus, there is a need for the module contents to be adequately prepared and designed in a manner that is easy for students to comprehend.

One of the findings shows that the student-lecturer relationship can be a hindering factor. In this instance, the student can serve as both sender/receiver depending on the communication flow. Similarly, lecturers can also serve as senders or receivers following Shannon and Weaver's model. Meanwhile, the way and manner their relationships are managed determines the type of feedback to be received: positive or negative. Moreover, a bad student-lecturer relationship can be tantamount to noise which would be a barrier to learning, as the students are likely to be distracted and fail to learn. The finding on the student-lecturer relationship hindering the equipping of students for e-learning corroborates the work of Dhawan (2020) who notes that it may be impossible for lecturers to relate with and help their students in their learning activities especially when the students fail to come forth to seek help. In congruence, Zhong (2020) adds that the lack of a proper relationship between the lecturer and students is another major concern associated with e-learning. In agreement, Uleanya (2019) states that the existing relationship between students and lecturers contributes to their learning abilities,

and self-esteem, consequently possibly increase in their level of socialization. Thus, the foregoing indicates that the student-lecturer relationship is crucial for students to be assisted and successfully adopt e-learning.

Furthermore, following Shannon and Weaver's model, policies can constitute noise if not well designed and implemented as they are capable of distorting communication flow from the sender (educator) to the receiver (student). On the contrary, if well designed, and implemented, they can aid positive feedback as the teaching and learning process would be enhanced. In this study, the findings on whether policies on campus promoted e-learning suggest that policies influence the adoption and use of online learning platforms in universities. This implies that more of the respondents hold the opinion that policies on campus did not promote e-learning. In other words, institutions are expected to investigate making policies that promote e-learning in the selected institutions of higher learning, otherwise, disruption is inevitable. This finding agrees with the work of Aung and Khaing (2015) who state that policies can disrupt the promotion of e-learning. Also, the findings of Saeed Al-Marroof, Alhumaid, and Salloum. (2021) show that a lack of proper policies and strategic plans can hinder the adoption and promotion of e-learning. In addition, Khalil Awan, Afshan, and Bano Memon (2021) suggest that adequate strategic plans and policies need to be put in place to enhance the successful promotion and implementation of the e-learning system in higher education. Suffice it to state that the policies put in place and implemented by the institutions of learning have the capability of making students embrace or neglect the use of digital platforms in learning.

### **Conclusions and Recommendations**

The study reviewed e-learning as a channel of communication in African societies, with an emphasis on universities. The subject of e-learning as a channel of communication was considered from the perspective of the outbreak of the COVID-19 pandemic. A review method was adopted for the study; hence, relevant kinds of literature were studied. The findings of the study following the reviewed relevant works of literature show that many African nations lagged in the use of e-learning platforms as a medium of communication in teaching and learning environments such as universities. Nevertheless, the outbreak of the pandemic spurred many into action in adapting one form of e-learning platform or the other. However, despite the desire to adopt the use of e-learning as a channel of communication in teaching and learning environments, many universities in Africa and nations are affected by the different challenges they seem to be experiencing. These challenges include issues such as technical ability, poor funding, and access to the quality of education provided, amongst others.

Sequel to the findings of the study, the following recommendations are made:

- The curriculum should be revisited to ensure its alignment with the need of the student and current happening revolving around e-Learning as a subject. This can be done by curriculum designers considering the

current practices in e-learning when revising the curriculum for suitability.

- The policies of institutions of higher learning should be revised to ensure that e-learning is embraced and promoted, especially considering the current happenings and need in the global world. This would help the institutions of learning such as universities to prepare for the uncommon normal which is now the order of the day following the outbreak of the Coronavirus which lead to COVID-19. Making e-learning compulsory will also contribute towards preparing institutions of learning for the Fourth Industrial Revolution (4IR) which is fast becoming the norm across the globe.
- Funds should be made available by the government to ensure that the necessary technological tools needed to promote e-learning are made available. This will help in promoting the quality of provided education which will be useful for students, and consequently enhance development in African societies.
- Adequate monitoring channels should also be made possible. In this case, the way messages are sent from the receiver who is lecturers in this case and how they are received by the receivers such as students should be checked. This will make students more disciplined in the use of e-learning platforms. It will also help to make lecturers more committed to the use of the provided e-learning platforms.

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