ASSESSING THE IMPLEMENTATION OF ONLINE LEARNING IN AN INSTITUTION OF HIGHER LEARNING

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Abstract. There is a rich body of research done in online teaching and learning in the context of developing countries. However, there is a gap in research on challenges in the implementation of online learning in institutions of higher learning. Lecturers and students' readiness for this shift from classroom-based to online learning is pivotal. The implementation of online learning strategies demands lecturers' skills on integrating technology with content. This study examines the perceptions of lecturers as they transit from face-to-face to online learning in an institution of higher learning in one developing country. The study is framed theoretically by Suzuki and Keller's Five-E Model for selecting the right model and techniques for appropriate purposes in online design. It used a qualitative research methodology and employed a convenient sampling technique to select three lecturers from each of the three institutions of interest. An open-ended questionnaire was used to collect data and follow up interviews were made. The study used a thematic approach to analyse data. The findings reveal that the lecturers embrace online learning mostly because they are aware that students enjoy learning technology and thus enhance understanding. The challenge raised is the shortage of gadgets which are needed by lecturers to support blended learning. Also, some of the students do not have access to the internet due to socio-economic challenges.
Keywords: Online learning, assessment, higher education, transformational practices, research and innovation, teacher education

Introduction

Before Covid-19, most institutions of higher learning had been delivering their lessons using traditional face-to-face teaching. However, during Covid-19 many institutions turned to online learning to not miss a year. Post Covid-19 some institutions adopted blended learning as the way to go. Even though some institutions have embraced blende learning, Makumane (2021) notes that Covid-19 facilitated the transition from traditional to online teaching and learning without being prepared for the transition. Makumane elaborates further in this view when he notes that before Covid-19, online platforms were put in place but not fully utilised as many institutions of higher learning already had Learning Management Systems (LMS), an indication that there were not ready. These LMS were initially introduced as optional platforms that would facilitate blended learning (Khoza & Mpungose, 2020; Makumane, 2021). LMS is a virtual platform which promotes digitalised curriculum and allows students to have access to content at their convenience (Khoza, 2020; Khoza & Mpungose, 2020; Makumane, 2021).

The shift to online teaching and learning however, was never officialised in most institutions of higher learning (Makafane & Chere-Masopha; 2021) but was introduced as a form of emergency during the pandemic for lessons to continue in both schools and tertiary. Online teaching-learning refers to instructional settings that are sustained by the internet (Singh & Thurman, 2019). Online communication applications use include google classrooms, zoom meetings, WhatsApp platform meetings, to name a few. In a study conducted in Nigeria, on students' perceptions of online examinations initiative, Suleiman (2022) explains that apart from the teaching, examinations were also conducted online. One of the challenges of conduction online examinations was power outrage, inadequate data and internet connection

problems. We must highlight that effective online teaching presents an opportunity to students to combine the innovative technological means with content to be taught. Hence it is crucial that the teaching staff be empowered with necessary skills to enable them to integrate appropriately technology in teaching and learning to have lessons which promote active participation of students (Matee, Motlohi, & Nkiwane, 2023).

Furthermore, the benefits of online teaching also allow for cost-reduction, time efficiency, flexibility, and convenience for the user (Szadziewska & Kujawski, 2017; Makumane 2021). However, as much as online learning has its benefits, there are also concerns that it is a challenge to gauge the information load for effective teaching and learning, for example, the amount of teaching materials that is loaded by some lecturers is not enough for effective learning (Szadziewska & Kujawski, 2017). Hence, it is noteworthy to highlight that material and recordings of the lessons which are just uploaded without being explained comprehensively to students does not lead to interactive learning (Maluleka, 2021). Henceforth depriving the students and lecturers of having interactive lessons does not lead to meaningful learning as argued by Maluleka (2021). In addition to that, Maluleka points out that face-to-face-curriculum has not been adjusted to accommodate digital technologies, it was adopted as is using the same teaching strategies which do not work for online lessons. Evidence also points to another challenge where access to technology is yet another obstacle to successful implementation of online teaching (Matee et al., 2023; Makafane & Chere-Masopha, 2021; Makumane, 2021; Mpungose & Khoza, 2020; Sokhulu, 2020). For online learning to benefit students, it is important therefore to ensure that it is implemented appropriately.

Literature shows that the implementation of online teaching was not well planned as the shift was unplanned (Mpungose & Khoza, 2020; Sokhulu, 2020; Makumane, 2021) which may even be worse in developing countries. Adhola and Okungu (2022, p.227) take this argument by indicating that "t the institutions used online teaching even though facilitators and teacher educators experienced challenges that compromised quality of learning. There was unequal access to online infrastructure, affordability of internet, facilitators' incompetence in online teaching. In line with this view, Naidoo (2022, p. 241) explains "due to the inequality in opportunities and resources available to students, online pedagogy promoted disparity and epistemic injustice." As such, we find it important, to assess the online teaching strategies that have been implemented in institutions of higher learning in a developing country. We must also stress that some institutions of higher learning have challenges with implementing online learning strategies mostly because of equity and technological competencies amongst the students and the lecturers (Adedoyin & Soykan, 2020).

A study conducted in Nigeria revealed that there were many disruptions to teaching during COVID-19. As such, students could not sit for their examinations as the universities were navigating online teaching (Agbele & Oyelade, 2020). This implies that institutions had to design and develop online instructional programs to support lecturers and students on technological skills before it was rolled out. The implementation of online teaching was an emergent move to overcome the barrier of educational continuity in the time of global crisis (Agbele & Oyelade, 2020). However, this could have been done by ensuring that there are enough resources. This includes ensuring that all students have access to material that have been uploaded by their lecturers and are able to attend online lessons. The shift to online teaching should not disadvantage any students. We also argue that the move should not compromise the effectiveness of teaching in terms of lesson delivery and content coverage. Hence the transition to online teaching posed challenges to the lecturers as they struggled with skills required to make use of technology. Makumane (2021) concurs with Adedoyin and Soykan (2020) that online teaching is compromised as lecturers lack cognitive understanding of technology. Adedoyin and Soykan (2020) note that there were limited standards of quality on online lecturers and the development of online teaching material and content delivery. In

the same view, Makafane and Chere-Masopha (2021) postulate that teachers need support in terms of understanding and competencies that are advanced to allow them to design and implement online learning as well as to assist students participate during online lessons. The implication is that lectures' understanding, and competencies should also allow them to plan for lessons that are engaging and interesting to students motivating them to learn. Therefore, lack of proper skills required to successfully implement online teaching becomes an obstacle to successful learning.

Even though literature indicates that research has been conducted on online teaching and learning. However little research has been done in the context of developing countries focussing on lecturers and students. A shift to online learning has created a stir across the world. The move to online learning has a great impact on the need to change traditional ways of teaching and learning, thus, bringing a change to the role and skills required by lecturers. We find it important to investigate different challenges in using online strategies in developing countries, particularly focussing on lecturers' and students' readiness in private colleges in Eswatini. This is because online instruction requires different teaching modes k and relies on instructors' understanding and competencies (Alvarez, Guasch, & Espasa, 2009). It requires careful planning and use of accessible online technologies to accommodate different learning styles of students different backgrounds of students, and assessment modes (Rovai, 2003; Grant & Thornton, 2007). The demand and availability of competent online instructors requires careful training of instructors, which makes online instructors' readiness an important construct. Against this backdrop, the study examined lecturers' use of online teaching strategies in three private higher institution of learning in Eswatini. The study further attempted to attempted to understand lecturers' perceptions towards online learning. Finally, the study investigated the challenges that hinder lecturers from successfully implementing online learning in their lessons. This is qualitative research that employed open-ended questionnaires and individual semi-structured interviews to collect data. We employed purposive sampling to select nine lecturers from three private institutions of higher learning in Eswatini. In the next session we discuss the context of the study.

Context of the study: Eswatini

Eswatini is a land-locked country surrounded by Mozambique and South Africa. It is in Southern Africa. It has a population of about 1,189,194 million and a land area estimated to 17, 360 km^2. Eswatini is considered as one of the smallest countries in the world.

Against this background, this study examined how lecturers' use of online teaching strategies in three private higher institution of learning in Eswatini. It attempted to answer the following questions:
   i.   What are lecturers' perceptions towards online learning?
   ii. What challenges hinder lecturers from successfully implementing online learning in their lessons?
The next section discusses related literature.

Related literature

A lot of research is done on lecturers' perceptions on their shift to online teaching strategies and the challenges faced by lecturers. Wahab Ali (2020) examined challenges faced by lecturers in Canada during lockdown from literature using a meta-analysis methodology. The findings showed that there is a challenge of resources, which include infrastructure, shortage of data and gadgets. According to Wahab Ali (2020), students' accessibility and motivation portrays an important role in technology integrated learning. Another study by

Fidalgo, Thormann, Kulyk and Lencatre (2020) explored students' perceptions, attitudes, and willingness to online teaching-learning in Portugal using a survey. Their research was informed by participants' experiences and practices as well as desktop literature review. Their findings demonstrated that students were concerned about time management, lack of motivation, limited accessibility to internet, gadgets, and lack of skills in ICT and English language. Beanoyer, Dupere and Guitton (2020) also examined students' perceptions toward online learning. The findings of the study mirror Fidalgo et al.'s (2020) study in that students have limited access to technology. The results of the two studies further pointed to internet problems and challenges with gadgets. The implication is that there are digital inequality and differences that are deeply embedded in a social, economic, and cultural context. Both studies inform the current study in that they do not only investigate lecturers' perceptions, but also students' views. Makafane and Chere-Masopha (2021) who also explored students' perceptions on online teaching and learning, concur with Fidalgo et al. (2020) and Guitton (2020) as they argue that lecturers have negative attitudes and perceptions about online teaching, especially when they are not involved in the planning stage.

Bhebhe and Maphosa (2016) examined primary teachers' computer literacy and use of information communication tools (ICTs) in teaching and learning using a mixed method approach. Data was collected using an open-ended questionnaire. The findings revealed that there was limited use of ICTs in teaching and learning due to a number of reasons which include shortage of resources and limited skills on integrating technology in teaching and learning. In Nigeria, Egielewa, Idogho, Iyalomhe and Cirella (2022) on the other hand made an analysis of online teaching. The study investigated the extent to which online teaching was carried out in the institutions, particularly looking at the challenges students faced as well as how satisfied the students were with their institutions' provision of online teaching. The study was carried out in three higher learning institutions in the form of a university, a polytechnic, and a college. A questionnaire which was sent through an email, was used collect data from 1134 students. According to Egielewa et al. (2022), the institutions mainly used Google Classroom, WhatsApp and Zoom as they are free instead of using Learning Management Systems that are paid for. The implication is that the institutions were not financially ready to migrate to online teaching. The results further revealed that students were reluctant to accept the use of digitalised learning as they encountered several challenges which included poor internet infrastructures, unreliable electricity supply and financial challenges (Egielewa et al., 2022). Their findings thus concur with Bhebhe and Maphisa (2016); Makafane and Chere-Masopha (2021); Beanoyer et al. (2020); Fidalgo et al. (2020) and Guitton (2020) who also noted similar concerns. According to Adhola and Okungu (2022), these challenges compromised the quality of education. In the following section, we discuss the theoretical framework guiding the study.

Theoretical Framework

This study used a theoretical framework which was proposed by Suzuki and Keller (2007) known as the Five-E Model. It is a student-centred hierarchical framework, which promotes active participation of students. It has five different levels of e-Learning quality. The Suzuki and Keller (2007) five levels are: Ecological e-Learning, Exact e-Learning, Easy e-Learning, Effective e-Learning and Engaging e-Learning. Level 3, known as the Easy e-Learning, is regarded as the baseline level because it is the mid-point of the Five levels. There are two levels below and above it namely, the Ecological and Exact e-Learning and Effective and Engaging e-Learning, respectively. The different levels are explained in detail below:

Layer 1: Ecological e-Learning

The learning environment is the lowest level in the Five-E Model. Level. It provides an appropriate learning environment for effective online teaching and learning. This may be through the provision of laptops, data and Wi-fi for lecturers and students. Therefore, in line with the objectives of the study, we find this framework relevant as it stresses the importance of having access to these resources to make online learning visible. The framework further stresses that the network used must be of good quality, stable and accessible to lecturers and students. According to this level, these online teaching and learning materials need to be accessible/ provided to avoid any disturbances during learning. Activities at this level also include analysing the learning environment, selecting appropriate media to be used and the technology support required. Media selection must be appropriate for the lesson, ensuring effectiveness and efficiency especially because it has various effects on learning. Hence, making suitable blending in selecting and utilising media is critical in creating an appropriate learning environment.

Layer 2: Exact e-Learning

This level refers to content analysis of the task given to students' analysis of the needs of students and challenges of online learning and teaching. Inaccurate content of the program leads to challenges in attaining engaging online learning. Hence, this level is concerned with proper developing of an effective online program. The needs analysis gives insights as to why e-Learning needs to be provided to a particular group of students. While analysis of content defines what should be covered in the course and the sequencing of the topics. Each topic should have a clearly stated learning objective. These learning objectives should also have a set of test items. Lecturers, therefore, are expected to provide correct content with correct sequencing of topics.

Layer 3: Easy e- Learning

This level explains the use of integrating technology in teaching and learning. Easy e-Learning enables students to attain their learning objectives. This allows lecturers to ascertain if students understood what was taught during an online lesson and be able to apply the knowledge in a new situation.

Layer 4: Effective e- Learning

Effective e- Learning level is concerned with strategies to make learning effective and meaningful. The purpose of this level is to make sure that both students' characteristics and task requirements in each environment meet the instructional interventions used during the lesson. Aligning instructional methods with the needs of the students, the activities give to students and the environment is critical because no single method of learning is best for all students. Hence, different kinds of learning activities require different sets of e-learning environment to be effective. This may be achieved using different test items (multiple choice, essays) or having questions that adhere to Bloom's taxonomy. It also includes using different modes such as PowerPoint presentations, videos, synchronised and asynchronized lessons. We argue that to effectively implement this, lectures must have necessary skills to manage online learning systems. Therefore, different characteristics of students call for different sets of instructional strategies to be most effective.

Layer 5: Engaging e-Learning

This layer explains students' participation in a lesson, which can be in a WhatsApp group, google class or zoom lessons. It means that students must be engaged and motivated in the lesson. For example, giving feedback to students on time can motivate them to work. This can

improve students' efforts in the lesson and encourage them to participate more in during a learning. We therefore argue that when teaching and learning were interrupted due to COVID-19 restrictions, these online platforms became very much reliable and efficient in carrying out teaching and learning activities. The section that follows features methodology of the study.

Methodology

This study used a qualitative research design approach. Mokala (2021) describes a qualitative research methodology as the type of research that relates people's experiences and describes case studies. Therefore, the researchers found this approach fitting for this study because the research focused on a case study implementation of online learning in a college. Another reason for choosing this kind of approach is that the researchers wanted to understand the experiences of the lecturers about online teaching as they present their own perspectives (Sefotho, 2013). Purposive sampling was used to select three Head of Departments from each of the three private institutions in Eswatini, making a total of nine participants. In purposive sampling "the participants are selected according to predetermined criteria relevant to a research objective" (Mokala, 2021, p. 79). It is fitting therefore to indicate that the selection of the participants was guided by the research questions and the objectives of the study as explained by Mokala (2021). An open-ended questionnaire was sent to the nine Heads of Departments. The results of the study cannot be generalised because of the sample size; however, they give an overview which can inform the institution for planning and/or guidance purposes/ to improve the implementation of blended learning. Having received the answered questionnaires, the researchers made follow up individual interviews with the participants to provide clarification where needed. According to Roopa and Satya (2012), a questionnaire comprises several questions directed to individuals to get valuable information about a given topic. When appropriately designed and responsibly administered, questionnaires are an important instrument by which statements are made about a certain topic. Based on this merit, an open-ended questionnaire was used. It did not limit the participants' response as it gave them the freedom to deliberate their views exhaustively. Following this, interviews were used for clarification from the questionnaires, thus the question asked in the interviews were not the same. The questionnaires were sent by emails to the participants, and they were given two weeks to return them. This was done after it was explained to them what the study was about and what was expected from of them. They were assured that the information collected for this study will be confidential, anonymous and that they have a right to withdraw anytime they want to.

The thematic inductive data analysis was used to analyse the collected data. Mokala (2021) explains that thematic inductive data analysis technique is beneficial in that it allows researchers to establish a link between the research objectives and the findings of the study. According to Mokala (2021), once this link is established, it is easy to link these two aspects to the existing theories. The first step we took during data analysis was to transcribe the raw data and saved it as word document. Following this, we read the transcriptions several times to understand the data better. Following Creswell's (2013) advice, we broke down large parts to smaller meaningful units, creating sentences, phrases and words and went through them to make sense out of them. through this process, we identified the themes as they emerged from the data as supported by Ebersöhn (2006) that the researchers using thematic inductive analysis look for patterns in the themes that emerge from their data. Following Machimana, Sefotho and Ebersöhn's (2018) point of view, we compared the trends that emerged and classified them as our data analysis categories. Once we reached data saturation, we moved on to the next step of comparing our findings to the existing body of knowledge. The next section presents the findings and discussions.

Findings and discussion

Two themes that emerged from the data are lecturers' perceptions towards online learning and the challenges that are faced by lecturers which hinder them from incorporating blended learning in their lessons.

Lecturers' perceptions towards online learning

The findings of the study revealed that the lecturers embrace blended learning mostly because they are aware that students have different learning styles. This is captured in the verbatim excerpt below:

> *Todays' children are born during the time of technology; we should not disadvantage them by using online strategies which do not allow active participation of the students. That way the lesson will be lively because they will love and enjoy what they do* (Lecturer A).

Lecturers also acknowledge that students learn best when they enjoy the lesson. They indicated that this can be achieved by integrating technology in their teaching. This finding concurs with Rutten, van Jooligen and van der Veen (2011) as well as Nxumalo-Dlamini and Gaigher (2019) who noted that Computer-Based Simulations (CBS) (Technology) have the potential to enhance students' understanding of abstract concepts in science education. The theoretical framework also promotes the use of different online strategies. This is reflected in the findings of the study which pointed to possessing unique characteristics which require different sets of online instructional strategies for lessons to be effective. According to Matee et al (2023) lecturers do not have sufficient skills in the use of blended learning as they have limited knowledge in technology and suitable technology teaching method. The finding resonates with Marzano and Zajac's observation (2020, p. 41) "Many also decried their own scant technical knowledge (40%) and their personal difficulties in using the online learning platform (35%)".

The lecturers also revealed that they upload material and there is minimal interaction between students and the lecturers. In line with the theoretical framework guiding the study, the findings reflected the importance of student engagement in online platforms which can be in a WhatsApp group, google class or Zoom lessons.

The lecturers also indicated that they were trained by the Instructional Technology Team on how to use Moodle. This was noted when Lecturer B said that:

> *We acknowledge that we were trained to break students into breakaway groups, about some of the security features of the Moodle system and how to safeguard data to ensure its integrity. However, we still need comprehensive training especially because some of us are not teachers.*

The excerpt above shows that there is a skill gap, implying that the lecturers have limited knowledge on the use of Moodle for effective teaching and learning. The lecturers noted that to teach using blended learning strategies requires the skill to blend technology with content and pedagogy (technological pedagogical content knowledge, TPCK), a skill which is limited to some of them. They mentioned that they need guidance in the appropriate blended learning approach and material preparation for online lessons. The findings further showed the requirement to ensure that lecturers do not overload students with work. It is worthy to note that lecturers also highlighted the principles of virtual teaching such as using strategies as important since they enhance the engagement of students in the teaching and learning process. According to Marzano and Zajac (2020), when online teaching was implemented in 2020, most participants indicated that they had limited knowledge of technology. This finding concurs with Ali's (2020) results which showed that lecturers were not ready for online teaching because they lack confidence in their use of online strategies.

Further, Lecturer A mentioned that:

> *We need support in administering assessment using the system provided. This is mostly because, the training was mainly operational, not how to use Moodle in teaching.*

Lecturer D Added:

> *We have not used online teaching before. As such, from time to time, we refer to the administration staff several time. We never received any training.*

From the foregoing extracts, the participants have stressed the importance of prior training for assessment purposes. Therefore, we highlight that assessment cannot be separated from teaching and learning, which means that it is expected that lecturers have to assess their students online.

Challenges which hinder lecturers from successfully implementing online learning in their lessons

One of the challenges revealed by this study was the shortage of resources; this was mentioned by Lecturer C when she said, "Gadgets are needed by lecturers to support them for blended learning. Also, some of the students do not have access to the internet". This finding concurs with Fidalgo's (2020); Beanoyer, Dupere and Guitton's (2020) findings which also noted that some students have limited access to technology and the internet. "They expressed that the main challenge which they face is that at times network becomes a problem in that it sometimes becomes too slow or even denies them a chance to submit their work" (Matee et al., 2023, p. 84). The implication is that some students are disadvantaged by the transition from face- to-face to online teaching. In line with this finding, Matee et al.'s (2023) study findings also resonate with this as they indicated that lack of resources and internet issues are some of the challenges encountered in virtual collaboration learning. One of the tenets of the theoretical framework is the emphasis on the need for provision of laptops, data and Wi-fi for online teaching and learning to be effective. Therefore, this finding resonates with the tenet of the framework guiding this study which emphasises that WIFI must be of good quality, stable and accessible to both lecturers and students.

It seems contextual factors may hinder effective online teaching-learning implementation. For example, the findings indicated that most lecturers use strategies which do not promote engagement of students. They upload mainly videos, use PowerPoint and slides, which do not promote interaction between students and lecturers. As there is a transition from traditional to blended learning, appropriate teaching methods which promote student-centred strategies have to be used. This contradicts the findings by Marzano and Zając (2020) who conducted their study on changes implemented in higher education institutions during COVID-19 in Poland. According to Marzano and Zajac (2020), lecturers were willing to participate in initiatives organized by their university.

Conclusion

In line with the findings of this study, it can be concluded that some lecturers still need support in the use of technology in teaching and learning for lessons to be effective, interactive, and engaging. Hence, it is further concluded that for the transition to be smooth, lecturers need to be supported with gadgets and accessibility to the internet. Also, it can be concluded from the study that the institutions are not ready for the integration of technology in teaching and learning. However, the findings indicated that lecturers embrace online learning mostly because they are aware that students enjoy learning when using technology, and this enhances their understanding. The study further concludes that universities should conduct more research to evaluate their online systems to enhance institutional agency.

Recommendations

Based on the findings that surfaced from this study, we recommend that universities provide proper training to lecturers in the use of online learning systems. In line with the findings of the study, we recommend that online learning programmes should be thoroughly planned for long term goals. The authors recommend that further study be conducted on a larger scale using the findings of the current study. We further recommend that a comparative study be conducted from different countries in order to find how other countries handled the use of online teaching programs and the strategies they have implemented in making education a success.

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