Teaching and learning in the COVID-19 era: A case of Botho University Eswatini

Rosah Bothloko, Sthembile Hlatshwayo and Emmanuel Lungile Howe, Botho University, Eswatini

Abstract

Higher education is important for producing the quality of graduates required for a country's economy. Failure to sustain or ensure effective higher education learning systems can often lead to unfavourable situations where learners are unable to learn and uncertainty about the future of education happens. The COVID-19 pandemic has created substantial challenges and opportunities for the higher education community worldwide. The sudden COVID-19 disruption exposed many higher education institutions to various challenges such as reduced resources to respond to the crisis, personal and academic challenges and the transition from the traditional face-to-face learning approach to online learning. The lack of resources, academic capabilities and online teaching readiness to transition to online delivery were the major factors that affected institutions. Few higher education institutions that had the resources offered online delivery. The overall concern was the readiness of higher education institutions in unpredicted digital learning situations. This research employed a qualitative approach and online questionnaire survey with students with the intention to explore how teaching and learning presence is fostered and maintained during the COVID era. Online surveys were utilized to gather the level of transition and measurement of various constructs which included learner characteristics, online learning awareness, technology skill readiness and access. The findings were organized into three main categories, forms of communication, online delivery approaches and teaching presence and the conclusion is that the level of presence between the lecturer and students, the degree of involvement demonstrated by the lecturer significantly influences the quality of learning under crisis related situations. The findings show that maintaining online teaching presence, adoption of a continuity plan, utilization of existing learning tools or platforms and constant feedback with students are all fundamental elements that tertiary institutions can adopt to address unexpected situations that may disrupt their learning processes.

Keywords: Teaching and learning, higher education institutions, COVID-19

Background

The COVID-19 pandemic has created the largest disruption world-wide in the education system, and exerted pressure to every area of life. Industries in general had to respond swiftly to this pressure and it came at a very huge cost in terms of lost time and money. This led to the temporary but long closure of institutions of learning in a lot of countries around the world. Education being the key to life had to find ways to survive. However, with the imposed social distancing, which became a new norm, institutions of learning had to shift to online learning very quickly to allow education to continue. Across many countries, institutions of higher learning were faced by a tremendous challenge of un-readiness to shift to either online learning or blended learning. Blended learning refers to a synchronization of the traditional

face-to-face interaction by teacher and learners with the online learning. Acute shortage of technology resources, such as devices, access to internet and/or data have exposed institutions of higher learning, especially the state owned ones. The other challenge that institutions are facing is lack of the knowhow to apply the online learning pedagogies by academic staff of institutions. This paper intends to show how Botho University Eswatini responded to the pressures of COVID-19 pandemic, in ensuring that teaching and learning do not get disrupted. This paper also assesses the challenges Botho University Eswatini faced as it was positioning itself in the new paradigm shift, and the opportunities presented for the university by the new normal.

According to the World Health Organization (WHO), Corona Virus Infectious Disease of 2019 (COVID-19) is a type of Corona Virus group of diseases. It is in the same group with diseases that once also ravaged the world such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). It has been reported that COVID-19 originated from China, in the city of Wuhan, in December 2019. It is a novel disease, and as yet it does not have cure. The disease has been initially reported as a Zoonotic disease, meaning it is transmitted from animals to humans, and with its quick spread, now the transmission is between humans. Research has indicated that the disease is transmitted through droplets fallen on the surfaces as people cough or speak. To reduce the fast spread of the virus, World Health Organisation (WHO) encouraged people across the world to adopt social distancing, use of sanitizers, washing hands with soap regularly before touching the face and wearing of masks covering nose and mouth, for one to contain droplets and delay the spread, which can eventually reduce the contact rate (WHO, 2020).

Africa's first COVID-19 case was recorded in Egypt on 14 February 2020. Since then, a total of 52 countries in the continent have reported cases. The disease has reached the Africa continent through travellers returning from hotspots in Asia, Europe and the United States. Closer to home, Republic of South Africa reported its first confirmed case on 5 March 2020, and by 13 March 2020, Eswatini reported its first case. From that day up to today, there has been a lot of change almost daily, mankind adjusting to the new normal way of living lives and doing things. With institutions of learning still temporarily closed in the Kingdom of Eswatini. Botho University Eswatini adopted the online learning mode, with the shift happening as early as from 19 March 2020, just 4 days after the first case was reported. The shift was this quick as the university had long invested in blended learning strategy before COVID-19. The impact of COVID-19 has contributed to the paradigm shift from traditional pedagogical methods to technology-based teaching and learning (Mahaye, 2020). The lockdown of education institutions caused major interruptions in student learning processes which consists of disruptions in internal assessments and the cancellation of public assessments for qualifications or their replacement by an inferior alternative (Simon & Hans, 2020).

Normal calendars of different educational institutions had to be adjusted due to COVID-19. Universities had to shift examination dates in order to prepare their examination rooms and ensure that they are adequate for all students, (social distancing had to be observed during exams). The era where lecturers depended on printed instructional materials has shifted to a

technology space where classrooms are not only constituted of brick and mortar but rather integrated with virtual platforms (Wilkramanayake, 2014). Throughout the crisis, supporting students in distress remained the University's major concern.

Literature Review

Teaching online is traced back to 2002 where private non-profit institutions offered online programs (AACN, 2003; Allen & Seaman 2013; Allen & Seaman, Poulin, & Straut, 2016). Ali, Haolader & Muhammad (2013) posit that the use of Information and Communication Technology (ICT) in teaching and learning is relatively a new phenomenon and it has been the educational researchers focus. Furthermore, the effective use of ICT technologies of teaching and learning as well as in classroom is relatively a new trend in most developing countries (Ali, Nargis, Yasmeen and Iqbal, 2015).

Teaching in blended and online learning environments requires different pedagogical practices than teaching in face-to-face learning environments. How educators are prepared to teach impacts the quality of instruction provided in blended and online courses. Teaching presence is essential to achieving student learning outcomes (Gurley, 2018). One of the most important aspects in teaching and learning is interaction. Fournier, Scott & Scott (2020) affirm that interaction in higher education which includes student-content, student-student and student-lecturer are very important aspects that contribute towards achieving positive academic achievement. Khan (2000) conducted a study on Web Based Instruction (WBI) and concluded that it is a hypermedia-based instructional program that utilizes the attributes and resources of the World Wide Web to create meaningful learning environments where learning is fostered and supported. Also, list serves, newsgroups, conferencing tools contribute to the creation of a virtual community. E-mail on WBI provides asynchronous communication to both students and instructors. Bickle, Rucker, & Burnsed (2019) identified attributes that contribute to humanizing online classrooms. These scholars revealed that students' perceptions of a high quality course were dependent upon continual communication with the instructor, a predetermined method of connecting students with one another and students' ability to express their opinions in different group activities and the use of technology allowed online learners to make humanistic connections with other students and the instructor.

Online teaching and learning requires the extensive use of technology. Before COVID-19, technology was used in teaching and learning as an adjunct teaching aid which was meant for enhancing learning. Technology has now become a need, and this has brought challenges to learners who stay in the remote rural areas, as they depended a lot on face-to-face interactions. Bertacco (2020) laments that opportunities for incidental learning, peer support, collegiality and communication in the target language, are also reduced in online classes. She further argues that online learning created a challenge in catering for all learners' needs. In face-to-face learning, learners are dependent on their listening skills and online learning can create a considerable strain on them and may fail to participate in online learning as it was the case in face-to-face learning.

Various studies have been conducted regarding the association between online, blended and face-to-face learning with the student community. Garrison, Anderson and Archer (1999) designed the community of inquiry model which provides a conceptual framework for the online learning experience. This model relies on the assumption that learning occurs as a function of three primary and co-dependent elements, namely social presence, cognitive presence and teaching presence.
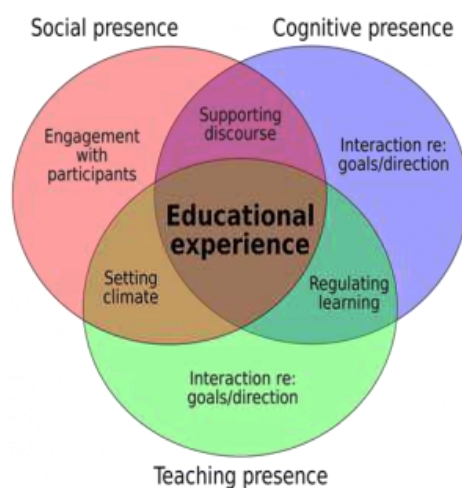

Figure 1: Elements of an educational experience (Garrison, Anderson & Archer, 2010)

Social presence provides a sense of the extent to which a communication medium facilitates awareness of the other person (McIsaac & Gunawardena, 1996). Garrison *et al.,* (1999) defines teaching presence as the "bidding agent" which directs the educational purposes for the specific community of learners. Cognitive presence is "the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse" (Garrison *et al., 2001*).

Methodology

The data was collected during the transition phase of face-to-face teaching and learning, to online platforms, and through online survey which was sent to students to gather their experience, perceptions and expectations. The online survey was distributed in two phases. The first phase gathered data on student online readiness while phase two of the collection was to obtain the experiences of learning online. Phase two was repeated bi-weekly for a further two (2) months to monitor the improvement of the student online learning experiences.

How Botho University Eswatini responded

Preceding COVID-19, Botho University had already invested in a robust state-of-the art Mobile Learning and e-Learning infrastructure that has been the backbone of its online distance learning programs. All Botho University students and staff, including those in conventional learning, have been using Blackboard Learn and its Mobile application in a blended mode to enhance teaching and learning (combination of classroom and online learning).

Blackboard Learn is the Botho University Virtual Learning Environment (VLE). It is an online campus that supports teaching and learning, allowing students to access their course materials online. Blackboard App and Blackboard Instructor App are the mobile versions of Blackboard which students can access using their smartphones or tablets. Blackboard provides access to learning materials and activities online. It has a plethora of features and functionality that provides an unparalleled level of student engagement such as discussion forums, wikis, blogs, journals and advanced content management features that allow for textual, audio, visual and pictorial content. In addition, Blackboard provides powerful assessment features that allow plagiarism checking as well as comprehensive reporting and analytics that allow for easy identification of "at-risk" students. Also, Blackboard allows easy and full access to e-Library facilities. This allows students and lecturers to access the Both University E-Library, which leads access to the following Databases; Emerald, Ebscohost, Proquest, Dawsonera, Jstor and BU Repository, for access of all the E-Books, E–Journals, theses, dissertations, case studies and many more resources. In light of the COVID-19 pandemic, Botho University deployed all its technical might to ensure that learning and teaching continues in spite of the restrictions due to COVID-19.

The university developed and implemented an approach of how to prepare for the migration to online learning. This approach consisted of three (3) stages to ensure a smooth transition to online learning. The first stage involved formulating and contextualizing of the asynchronous and synchronous learning approaches, the second stage was the campus online transition stage and the third stage was implementing the online learning activities.

STAGE 1: Contextualizing the learning approach
The objective was to identify the different student learning styles with the aim of aligning to the most appropriate delivery platform. The table below shows the phases used to allocate the resources based on the learning approaches.
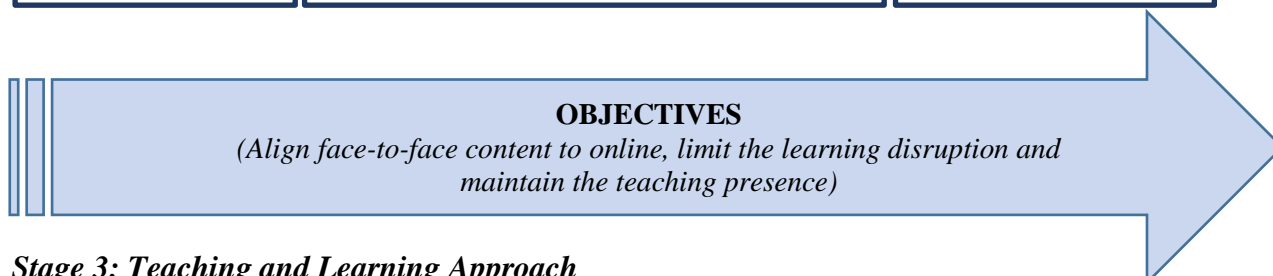
	Activity	**Learning Approach**	
1.	Class discussion	Asynchronous & Synchronous	Discussion forum in Blackboard as well as conduct online sessions during the regularly scheduled class time
2.	Class lectures	Asynchronous	Recorded video posted to Blackboard
		Synchronous	Blackboard session during the regularly scheduled class time
3.	Class Resources	Asynchronous	Books, Articles, Videos can be posted on Blackboard and access to E-library resources
4.	Small-Group Discussions	Asynchronous & Synchronous	Discussion forum in Blackboard

| 5. | Office Hours / Student Support | Asynchronous | Email, "Ask the Lecturer" Discussion forum in Blackboard, chat via WhatsApp, feedback/review via Microsoft Forms |
| | | Synchronous | chat via WhatsApp sessions for Office Hours |
| 6. | Student Submission | Asynchronous | Through Blackboard and Turnitin |

STAGE 2: Online Transition

The diagram below shows how the university responded in transitioning from face-to face to online learning.

Capacitation	Support Interventions	Teaching Learning
Micro content development Black Board training: on Microteaching and learning	**Lecturers** Work from home (WFH) templates developed Network access support through data provision **Students** Migration plan to Blackboard Creation of engagement approaches Online surveys assessment	Development of weekly and assessment reports Faculty Meetings

OBJECTIVES
(Align face-to-face content to online, limit the learning disruption and maintain the teaching presence)

Stage 3: Teaching and Learning Approach

This stage focuses on how the actual online teaching and learning occurs, and it provides guidance on how lecturers and students conform to the approach.

INFORM STUDENTS → UPLOAD CONTENT → CONDUCT LECTURE → FEEDBACK SESSION → ASSESSMENT
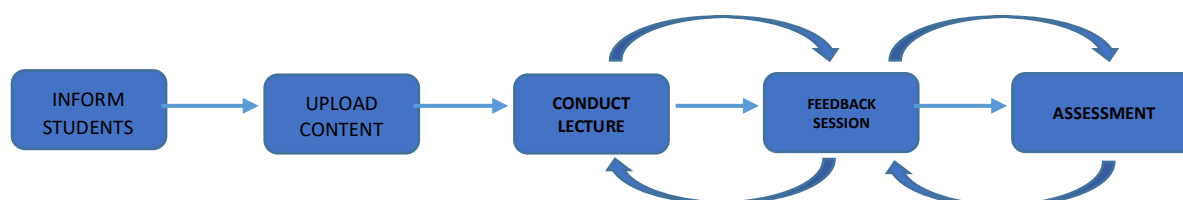
Teaching and learning support interventions

The interventions introduced by the university during the lockdown proved to be very beneficial in ensuring that teaching and learning is maintained.

Support Interventions: lecturers

(a) *Teaching readiness:* The university's approach to ensure that the lecturers are ready for the transition to online learning was guided by the following questions

- Do you have a laptop or home computer?
- Do you have Internet access at home?
- Can you access the tools listed here below and do you know how to use them?
- Do you have a webcam and the Zoom app installed in your laptop?
- Do you have access to your teaching materials?
- Do you have access to the content resources (books, articles, videos) that you will need?
- What is your experience in teaching online? Can these experiences be leveraged at this time?

These questions were crucial for seamless online delivery of the content and the university was also able to utilize existing policies to achieve quality online teaching.

(b) Course Delivery:

The university aligned the teaching approach with the online learning platform and was guided by the following questions;

- Which tools does the University offer that can support your essential course elements?
- What do you need help with? Which resources can the university support you with?
- Based on the strategies you have selected, identify the tools and resources that make sense for your class.

Throughout this process, IT support was available through our campus IT technician, who was also available online.

(c) Teaching and learning interventions

To monitor whether teaching and learning was ongoing during lockdown, a reporting tool which the university refers to as Work From Home (WFH) was completed daily. The WFH sheet required lecturers to state the percentage of students who participated on Blackboard, WhatsApp groups and emails, the mode of delivery for the day's content, challenges encountered by lecturers and also any suggestions they could offer to make online teaching during COVID-19 a success. The WFH sheet also enabled heads of departments to monitor teaching and learning progress as well as track students participation in lessons so that follow ups were done with those students who were missing online lessons.

Support Interventions for students

During the abrupt closure of learning institutions, a fresher training on the learning platform could not be provided. However Botho University Eswatini ensured that learners were ready for the transition by applying the following interventions;

(a) *Online learning readiness.* An online survey was conducted to determine the readiness of the students, and guiding questions that were posted were:

- Do they have a laptop, mobile phone or home computer?

- Do they have the Blackboard App installed in their mobile phones and/or computers?
- Do they have access to Blackboard content resources (books, articles, videos)?
- What is their experience in learning online?
- What assistance might they need?

These questions were crucial in determining the student learning style, the anticipated learning context and access to the learning platforms.

(i) Uploading content on learner's tablets through the learning management system
The lecturers made sure that all the relevant content was uploaded so that learning may continue with minimal disruption. If a student was not active either on WhatsApp or Blackboard, the lecturer would phone that particular student to find out why they are inactive.

(ii) Constant communication with students using social media platforms
The lecturers maintained constant communication with the students through WhatsApp. The purpose of the WhatsApp groups was to notify students to log into Blackboard, check newly posted content material, address and discuss questions raised by students and most importantly encourage student online participation.

E-library accessibility

Another approach used by the University was full utilization of the electronic or e-Library. Botho universities subscribe to different databases that work globally and pay every year. The databases have academic journals with different articles published by scholars and e-books. Students are able to access e-library and get e-books while at the comfort of their homes. This enabled them not to be disturbed by lockdown but to continue with doing research for their assignments. They also had the advantage of accessing the e-library at whatever time convenient to them. E-library also features Press Reader, which enables students to read newspapers online. Botho University librarian was also able to guide students on how to get access to e-books by issuing out steps to follow to students while they were at home.

Blackboard Usage

Using Blackboard, lecturers posted self-recorded lectures or lectures from YouTube. They also uploaded teaching slides aligned to learning outcomes. Additional reference materials were also provided to students. Through the discussion forum on Blackboard, students were able to ask questions and lectures responded to them. Internal assessments were issued out using Blackboard and course announcements were posted. Blackboard allows lecturers to post all information about their courses and students are able to get all the important announcements.

Assignment submission

In order for students to submit given assignments, students used Turnitin. This is an online system used by Botho University to check plagiarism in students' assignments. When COVID-19 forced tertiary institutions to close, students were already familiar with submitting assignments online using Turnitin because they were taught how to use it when registering at Botho University. The sole challenge brought by lockdown was that assignments submission dates had to be shifted in order to give learners enough time to access the internet. With all people at home, the internet had glitches and it was not easy to have access to it.

Experience gained

Assessment and Evaluation

The transition from face-to-face teaching to online delivery had a serious impact on how assessments were conducted. Learners as well as lecturers were uncertain about the procedure for administering the remaining assessments. Prior to this crisis, a majority of the final assessments were in the form of written examinations, therefore the university had to change to a project based assessment approach. Results of the survey undertaken about Botho Eswatini students' resource revealed that the majority of students (81%) used laptops for their assignments and tests. This is due to the fact that Botho University Eswatini students are provided with tablets just before they resume lessons.

Academic Continuity Plan

In an effort to ensure that the students do not "fall" behind their learning schedule, the lecturers engaged in efforts to convert the learning content into a micro learning format where students can access the content using their smartphones and tablets. The institution conducted training on developing micro content for conformity into the learner's tablets. Provision for learning resources included weekly mobile data for lecturers who were working from home, as well as the modification of the academic calendar to incorporate online learning activities.

Challenges in shifting to online learning

Online delivery approaches used by Botho University lecturers include using Blackboard, virtual laboratory, e-library and Turnitin. These are Botho University existing online systems used for delivering content. During orientation of first years, students are guided on how these online systems function and how they access them. The university has access to free Wifi for both students and lecturers. Access to free Wi-Fi enables students to do research, access e-library and submit assignments through Turnitin. Students have no challenges with online platforms used by Botho University. With the spread of COVID-19 pandemic which led to tertiary institutions closing, this meant that students will no longer have access to free Wifi. Regardless of this challenge, lecturers continued using Blackboard, emails, WhatsApp groups to deliver content and communicate with students.

Learning Tools and Network Access

The transition to online learning greatly affected the students in accessing the network with available learning tools. Results of the survey revealed that 64% of the students used their

tablets to access the internet and 36% used their cell phones. The provision of tablets by the institution to students after they had registered enabled lecturers to continue with their lessons even during lockdown. Since students had the resources needed for online learning, they were able to type, send assignments and write tests while they were at home.
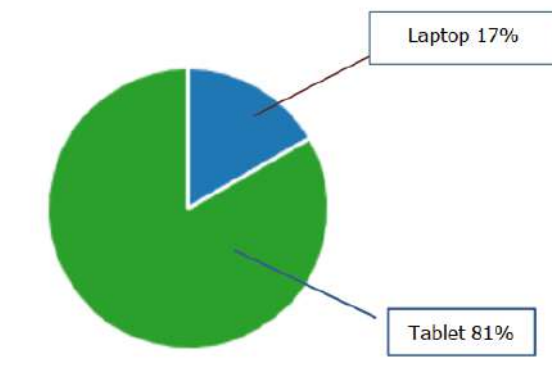

Online Practical Provision

Certain modules required that students should have the prescribed software installed in their tablets. However, the tablets had limited capabilities for installing these softwares. Blackboard has a feature called Virtual labs where students can conduct practicals virtually. However, this proved to be a challenge for the learners because learners were not mentally ready to conduct practicals online.

Access to e-learning resources

Learners were asked about accessing learning resources online and whether enough support was provided.
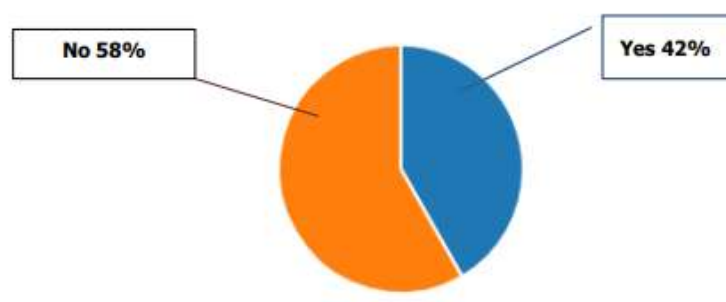
Some of the learners' comments included the following;

"When I try to enter that platform, it tells me that it isn't available."
"I just have no clear picture of how to use it."
"I'm unable to access the books."
"I can't use it; I don't know how to use it and I can't get to the point where I have to select a book."
"I still do not understand how it functions and how one could function it."
"I do not understand how to use it yet."
"I've tried so many times but I never gained access."

"It loads forever."
"I don't know how to operate it."
"It displays no information in it."

Teaching presence

Lecturers constantly encouraged their students to participate in online lessons. If a student was absent in an online lesson, the lecturer would contact the student through the WhatsApp group and in some cases phone the student and find out why he or she missed the lecture. This motivated students to be active participants in lectures since they felt that lecturers care about them. Also, students felt that they had all the support they needed from their lecturers who were concerned about their studies thus they had no reason to give up.

Financial Challenges

The major challenge with teaching during lockdown was that students lacked finances to load data bundles and therefore participate online. The survey findings show that 62% of students revealed that they are no longer able to access Blackboard due to financial challenges. Furthermore, 80% of them revealed that they had challenges accessing Blackboard during the initial stages of the lockdown.

Leveraging on blended learning culture

Students continued with online lessons, submitted assignments, wrote tests and the end of semester examination amidst COVID-19. Results were released and shared online. All this was made possible through online teaching which was not just adopted during COVID-19 but it is a culture of Botho University. Botho University continually invests in excellent infrastructure and the latest technology-driven learning resources.

Student Feedback

The university made it a point to involve the students during this transition by obtaining their experiences. The comments below summarise their comments and suggestions on how to improve and maintain the quality of online learning.

Comments and suggestions

1. *"I think if we can have shortened videos will do and with me it keeps on loading ever since we were transferred to Blackboard ... now I missed a test."*

2. *"Deadlines on quizzes, assignments and tests should be placed when lecturers are definitely sure that all students can access the Blackboard. Not everyone can access Blackboard due to financial problems, so if there was a way to make it free and accessible anytime can it please be done."*

3. *"The network might need to be a little faster and Blackboard needs to stop shutting down."*

4. *"Please make sure the system files open on our phones as well."*

5.   *"I think we could at least use WhatsApp more often instead of Blackboard."*

6.   *"Have different Blackboard's for each campus so the system isn't flooded."*

7.   *"Maybe get most of the work on our school emails."*

8.   *"Apply innovative feedback and assessment strategies."*

9.   *" If the App can stop shutting me out, and the video can be downloaded"*

10. *"We should also be given the chance to ask questions during discussion and not only answer them and also when writing testes we should be able to see the marked result so that we know where we are at fault."*

Conclusion

Tertiary institutions worldwide have been affected by the COVID-19 pandemic resulting in many universities to be closed. In the Kingdom of Eswatini, the tertiary institutions faced many challenges on assessing and responding to this crisis. However, this global pandemic also created opportunities for universities to experiment as well as to gauge their resilience in unexpected circumstances that can affect the teaching and learning processes. This outbreak has shown that maintain the teaching presence is very important to ensure that students do not lose focus and hope in completing the learning activities. Although the anxiety was very high among the students and lecturers, the findings show that an academic continuity plan is vital to consolidate the changes and challenges encountered. This academic continuity plan provides guidance during the transition period of migrating from face-to-face learning to online learning. This includes converting the content to suit the online learning format and the availability of learning resources.

In addressing financial challenges, tertiary institutions should have provision in place to cushion the impact. Provision to online learning resources must be maintained as part of the migration phase, given that the students already have access to electronic learning tools. This links very well with the blended learning culture.

The findings also highlight the importance of communication and the various platforms available for asynchronous & synchronous learning approaches. It is important to identify the learning style or approach that the institutions need to implement so that it is aligned with the student preferences. This mix is fundamental in maintaining the learning process and achieving the learning objectives. Institutions that already have an online learning platform will find it easier to consolidate these elements, and they can also leverage on the presence of a blended learning culture. Future improvements tertiary institutions can adopt is by providing a complete online learning experience adopted by a learning framework that incorporated all the elements of teaching and learning.

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