

ASSURING QUALITY IN UGANDAN UNIVERSITIES DURING COVID-19

An Assessment of Students' Experience with e-Learning A Case of Mbarara University of Science and Technology (MUST) and Bishop Stuart University (BSU)¹

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ABSTRACT

The Corona Virus Pandemic sparked a crisis across many sectors of the economy. The virus led to the closure of many sectors including education. In Uganda, the education sector was closed for 22 months leaving many children and schools stranded on how to

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learn and deliver education services. The higher education sector reacted by introducing online learning. Since to many online learning was a crisis response, the transition was abrupt, thus calling for an investigation into the quality of education offered by universities during COVID-19. We interrogate the learners' experience with online learning with a view to understanding the extent to which quality standards were maintained. Understanding how the learning experience can lead to improved design of future online programs and avoid the crisis in the education program delivery system. We collected both qualitative and quantitative data using questionnaires sent to students online. A sample was conveniently drawn from students who studied online during COVID-19. The sample consisted of both students undertaking undergraduate and post-graduate training at various levels. Our findings indicated that the majority of students were not well trained to undertake the online program, institutional support was also limited during online training and students indicated that online training can be better delivered if universities provide adequate training to students and invest in infrastructure development.

Introduction

The Corona virus pandemic caused far reaching challenges to the global economy. Economies were shut down. For the education sector the impact was enormous. In Uganda, schools and education institutions were closed for close to two years (Nawangwe et al, 2021). The aim was to prevent the spread of the disease. The closure of all education institutions was part of 13 measures (presidential directives) to prevent the spread of COVID-19 issued on 18th of March, 2020.

According to President Museveni schools form 50,688 concentration points each having 1000 or more persons interacting on daily basis. Initially schools were closed for one month effective

from 20th March 2020, but as the spread of corona virus continued to be uncertain, the closure became indefinite as more guidelines closing the economy continued to be effected.

According to the Minister of Education also the wife of the president, “I do not want to say there is a time in future we know when we will open. Whether it will be a long process of opening some and not others, is yet to be decided,” *The Independent*, (2021). 15 million learners at all levels were affected by the closure. According to Safieldin (2021), Uganda was ranked one of the Top 20 countries with longest lockdown for schools’ full closure since March 2020 and February 2021.

On 20th September 2020, the President directed that schools open for only candidate classes and finalists beginning on 15th October 2020 and other levels to remain closed until it is determined that it is safe to open (Ministry of Education and sports -MoES, 2020). The reopening of schools did not last long as the country was hit with a second wave causing total lockdown of the country and schools in June 2021 (MoES, 2021). It is with in the lockdown that universities began thinking and introduced online learning. Until 1st of November 2021 when a new directive to open post-Secondary institutions of learning to open as long as teachers and learners above 18 years were vaccinated was issued by the President on 22nd September, 2021 (Uganda Media Centre, 2021), learning in universities was online.

To continue learning during the lockdown, the government through the guidance from National Curriculum Development Center (NCDC) developed learning materials for primary and secondary schools. The learning material which which were distributed using and buses and taxis were delivered to students through educational programs run on television and FM radio stations in various districts. For higher education, post-secondary tertiary institutions and universities, there was no immediate response with a national character. Each institution reacted differently. Nawangwe, et al., (2021) indicates that Makerere

University went into research because it had support from government while other institutions almost closed. Uganda Christian University went online teaching because it previously was running online academic program (Kabahizi, 2020). But the institution faced challenges when students petitioned against doing examinations online.

In response to the looming crisis of unguided online learning as evidenced by petitions against, and for online examinations and take-home assignments at Uganda Christian University and eventual suspension of online examinations during COVID-19 by ministry of education and sports (Kabahizi, 2020), the National Council for Higher Education (NCHE), developed guidelines for running online programs during an emergency (NCHE, 2020). The aim of the guidelines was to ensure that the university output standards are not compromised.

Quality in higher education is important due to the central role played by universities for development of countries. Nawangwe, et al., (2021) note that universities play tripartite role of teaching, research and community service. Higher education is central to economic, social and Political development. The sector is responsible for capacity building and training professionals necessary for development. They are responsible for both technical and soft skills development.

Universities in particular are responsible for developing competences development in research, knowledge creation and generation. According to Asie`-Lumumba (2006, 18), “Universities are sources of highly trained manpower for the professions, and “they have been the principal agents for the growth of knowledge, particularly the scientific knowledge that become the dominant force of the modern world”. Universities are committed to producing not only professional to contribute to the growth and development of nations, but also knowledge that is important for societal transformation. However, COVID-19 came as a new challenge to the already challenged sector. NCHE (2021) indicates

that the sector was already challenged with teaching space and lack of qualified staff to deliver academic programs for most universities. With global environment learning (a web-based) widening both in terms of tools and access equipment, it was necessary for NCHE to regulate the sector.

The online learning requires no physical space for learning but exploitation of the virtual space. Many universities introduced the online learning programs in panic as a response to the COVID- 19. To ensure quality, the NCHE introduced the guidelines for adoption of an emergency ODeL system for higher education institutions during the COVID-19 lockdown (NCHE, 2020). These guidelines among others require institutions to put in place means of delivering materials to learners including flash discs and a list of qualified academic staff to deliver ODeL programs and the strategy to cover for the lost materials and time during ODeL.

While many universities dived into online learning delivery of programs as a response to the closure of physical leaning space, they were ill prepared for the new experience and delivery of programs (Lobos, et al., 2022, Nawangwe, et al., 2021). With the introduction of online teaching due to COVID-19 pandemic and since the introduction of the NCHE ODeL guidelines, 2019 and 2020, there is limited information on how universities navigated the virtual teaching space (ICT infrastructure and teaching environment) for the institutions and for both learners and teachers. The learners' experience is less known.

It has to be noted that online learning is dependent on the availability of infrastructure such as availability of electricity and other sources of power, internet and the equipment such as mobile phone and computers. The Uganda National IT survey 2017/2018, revealed that 5.9% of Ugandan households had access to a computer at home, 10.8% of households owned a household telephone, 70.9% of all individuals owned a mobile phone, and 10.8% of all households had at least one member who had internet access (NITAU, 2018). According to Nabisubi (2022), by 2021,

smartphone penetration in Uganda stood at 29.4% with only 10 million out of 34 million mobile phone subscribers using smartphones.

In addition, Uganda is considered as having lowest (14%) internet penetration rates with a huge 70% gap between urban and rural use, and the costly internet in the East African region. The cost of internet in Uganda was USD 9.75 compared to USD 2.48 Kenya and USD 2.25 for Tanzania and Rwanda (Atwine, 2021, Nabisubi 2022). In addition, there is limited electricity coverage in Uganda with most rural households relying on cheap solar power that cannot power a computer battery to last for an hour without being charged (Nawangwe et al 2021).

As of 2004, Farrell (2007, 6), indicates that “access to electricity was a serious constraint to ICT use because 97.7% of rural and 59.9% of urban households had no access”. Kakumba, (2021) shows that although connection to electricity grid has increased from 24% in 2004 to 49% in 2021, the number of households connected to electricity grid is only 26%, with 67% households located in urban areas and 13% in the rural areas. With the above infrastructural terrain, we ask was quality education delivered. Among many challenges identified by Iqbal *et al* (2022) is unavailability of electricity, poor or no internet access.

Surabhi, Abha and Roshan (2015:191) note that, “the greatest limitation of online learning is to have a constant internet connection. Without the internet access and a proper medium to access the same, material shall not be downloaded timely”. Thus, without proper access to internet, students learning is curtailed. Apart from the infrastructure, student learning environment also affects learning. The environment in this paper includes all those aspects such as interactivity and isolation and surrounding environment in which learners and teachers are located to deliver and receive instruction. Most students studied in their homes, which sometimes are not conducive environments for studying. In addition, most families in Africa, have extended family members

and young children and the learning environment may not be easy to control both by the learner and the lecturer.

Furthermore, most African families depend on family labour for production. Closure of universities meant that university students were sent back to the production institutions (families) and thus became part of the labour force. All these factors are part of the environment and they affect learning online. Iqbal et al. (2022) argues that the home study environment and other demographic factors affect the students' experiences. They argue that recent studies have indicated that students belonging to Asia, South America and Africa reported lowest availability of a quiet place to study.

Many institutions across the world have put in place mechanisms to ensure quality and they focus on three aspects; accreditation, assessment and audit (Kis, 2005). With regard to online teaching, the Swedish National Agency of Higher Education (HSV, 9) report, identifies 10 aspects for considering while assessing online quality programs, material/content, structure/virtual environment, communication, cooperation and interactivity, Student assessment, flexibility and adaptability, support (student and staff), staff qualifications and experience, vision and institutional leadership, resource allocation.

According to the report the quality of education must put into consideration the above aspects taken together and by their interrelationships. In addition, the report also notes that the quality aspects should be integrated into the existing quality assessment frameworks. Fundamentally to note however, is that the campus based (physical learning) is different from e-Learning. As such new ways of assessing emergency e-Learning should be developed. E-learning introduces new learning aspects such as new learning environments for both learners and lecturers.

Interaction between learners and teachers is important for knowledge creation, according to Rivera-Vargas et al, (2021, 3370), "Students create knowledge through interaction between

themselves, the teacher, and their environment, that allows and indeed forces them to assume the leading role in their learning process". The focus for this paper is to assess the university students' experiences with online emergency online learning during COVID-19 lockdown. We specifically focused on BSU and MUST and interrogated three broad questions:

- What was students experience with institutional support during COVID-19?
- What was students experience with online learning environment during COVID-19?
- What areas require improvement for learners to maximize benefits from online learning?

The Context of the Study

Nawangwe *et al* (2021), note that private and public universities were affected differently with public universities exhibiting stability due to heavy reliance on government funding and private universities almost closed due to heavy reliance on private tuition fees from students. Mbarara University is a public university established by an act of parliament in 1989. The university is funded by the government for major operations including recurrent and capital expenditures such as paying lecturers, construction works. Bishop Stuart University is on the other hand is a chartered private university founded in 2002 and chartered in 2014.

The university depends on students' fees for both recurrent and capital investments. During Covid-19 pandemic lockdown, both universities like any other higher education institutions suspended students learning activities for some time until the NCHE 2020 guidelines for open distance learning. Because of heavy dependence on student fees, Bishop Stuart university suspended payment of salaries of workers except for a few such as security guards and a few works in the accounts department and administration. Mbarara University on the other hand continued

paying her workers since salaries were drawn from the national budget.

With the introduction of ODeL guidelines, (NCHE 2020), both Universities introduced e-learning to continue teaching. In its ODeL policy statement, BSU state thus, this policy highlights the commitment of BSU management to adopt ODeL so as to restore teaching and learning during this period of covid-19 lockdown and beyond (BSU, 2021: 4). Mbarara University of Science and Technology like Bishop Stuart University, also passed ODeL Policy (MUST 2021).

However, unlike Bishop Stuart University, there is no reference to COVID-19 lock down as informing the development of the policy. In addition, both policies did not make any reference to NCHE (2019) and NCHE (2020) policy guidelines which were precursors for ODeL policies in Ugandan Universities. With ODeL policies in place for the two institutions, Bishop University reinstated staff contracts with periodical review of 1-4 months for those whose contracts had expired during COVID-19 lockdown. With regard to teaching online, MUST and BSU introduced the learning management systems with learning platforms. MUST established the Claroline Open Source e-Learning LMS and supported by zoom classes, while BSU used VLE (Virtual Learning Environment) and supplemented by Moodle with integrated BIG Blue button (BBL) and zoom classes.

The BSU learning management system was more interactive and had additional features such as BigBlueButton (BBB) that facilitated learning without the need to have additional sourcing of learning platforms such as zoom classes. Both institutions' learning management systems however had possibilities of repository of learning material for students to access. In fact, for Bishop Stuart University payment of salaries to academic staff required recommendation from IT personnel and director of quality assurance indicating who had uploaded learning materials to VLE. One other distinguishing feature of the two institutions during

teaching on line was that for BSU conducted final examinations on line while for MUST only course works were the only ones conducted online leaving final examinations to be done when students returned to campus for physical learning.

There are limited studies that have investigated students' experience with online learning and more so during emergency learning. Thus, the need for this study. We believe that this study will inform policy on how quality learning is to be ensured in case of any other emergency requiring learning online.

Literature Review

COVID-19 pandemic affected many institutions of in the education sector at all levels. Countries having locked down all sectors to prevent the spread of COVID-19. It is estimated that by April 2020, the number of learners who stayed at home due to closure was 1.5 billion from over 194 countries (Aleksander, 2020). The study investigated how learners were affected by COVID-19. UNESCO report 2020 (cited in Yan et al 2020) indicates that by July 2020 nation-wide closure was register in 111 nations and that over 1.07 billion learners were affected by the closure. The figures provided are contradictory indicating a knowledge gap between the known and the unknown figures of students who were affected by the lockdown. In Uganda, nearly 170,000 students in tertiary institutions were affected by lockdown during COVID- 19 with uncertainty of their academic future (Kabahizi, 2020).

Due to COVID-19 lockdown, many institutions of higher learning shifted to online delivery of academic programs. Mbarara University of Science and Technology and Bishop Stuart University are among the universities in Uganda that rolled out online learning during COVID-19-pandemic. While e-Learning has been in existence for a long time globally, there was a surge in number of universities offering online programs during the COVID-19 lockdown. The use of computers in learning began in

1967 with the Massachusetts Institute of Technology (MIT) using computer-based flight simulators to train pilots. The use of computers in education continued to grow with increased access to computers and internet. While online learning continued to be rolled out, many institutions did not use this mode of delivery and Mahyob (2020) notes that the staff of these institutions do not know what is involved in e-Learning.

Similarly, Rivera-Vargas et al (2021) indicate that the common element among online students is that they all register for the online program when they do not know what to do, what is entailed in the program and often without receiving any training. During COVID-19 there was increased use of online learning because it was the only option available for learners to access education services and learning in particular (Mahyob 2020). It should be noted however, that the online learning program might be different from the previous online learning arrangements due to the fact that the program was introduced in a manner of managing a crisis. Rivera-Vargas, et al. (2021) on online learning, note that many of the students cannot access traditional learning centres with conventional face to face mode due to physical or economic constraints.

COVID-19 added a new dimension of limited access due to health pandemic that threatens life, thus calling for preparedness perhaps more than was when dealing with physical and economic challenges. By understanding student's experiences with online learning during a health crisis such as COVID-19, it brings to light how universities can start planning ahead to avoid a crisis. For example, we explore the necessary infrastructure required to deliver an online program in times of emergency. We also asked students to tell us areas that require improvement to make online learning better.

As already indicated earlier, students, teachers and higher education institutions entered the unknown world of learning with the unknown skills, and knowledge to run programs and study

online. What is required for students to adapt to new situation? How do they avoid future challenges if faced with similar or related conditions requiring abrupt closure?

COVID-19 did not simply impact schools by closing them. Rather it created a crisis because of the uncertainty in as to when schools would be opening. The rate at which COVID-19 spread was alarming and the immediate method of control was social distance. Since schools stood as concentration centres, opening them up would easily lead to the spread of the disease. Closing them was the only option available. Most universities in Uganda especially the private ones depend on fee paying students for survival. Closing them down meant that they had no income flow. Indeed, many private universities suspended worker's contracts for survival and to avoid litigation (Nawangwe, *et al*, 2021). For continuity of learning, online learning was adopted in some universities while some others remained closed.

There was a sudden transition from face-face learning to online learning to address the challenge of loss of learning due to countries' lockdown. It is therefore imperative that given the manner in which education institutions transited from face-to-face learning to online learning, there is need to investigate the quality of learning during the pandemic. Indeed, Iqbal et al (2022: 2) argue that, "given the emergent nature of this transition, careful consideration must be given to assessing the quality of online education provided during the pandemic. It has been implemented without any proper planning and deliberation and may have some shortcomings".

To assure/ensure quality of online line, NCHE (2020) designed the guideline to address an emergency online learning. One of the requirements was that institutions should possess an ODeL curriculum to deliver online. However, there is a distinction between online learning and emergence online learning (NCHE 2020). According to Lobos et al, (2022), emergency on line learning code-named emergency remote teaching (ERT) is a scenario where

there is drastic transformation from physical learning to online teaching with no possibility of preparedness by both teachers and learners.

Lobos *et al.*, (2022) note that, the difference between ERT and online learning is that online learning focuses on delivering a quality learning experience following a predefined instructional design while ERT does not necessarily consider the critical elements of quality education on line. There are arguments to this assertion; that the necessity and value of emergency response does not allow preparedness in times of emergency such as COVID-19 pandemic. In addition, online teaching allows processes of evaluating courses and programs, virtual environment and aligning curricular components with learning outcomes (Lobos et al.2022, 2), which processes may not be followed by ERT.

ERT may also not allow preparedness in areas such as customising platforms to fit students' and academic programs' such as mathematics and languages' needs. Also, since online learning is different from face-face learning, it requires modification of previously face to face run programs to fit online learning. NCHE (2019) and NCHE (2020) provided a clear guideline on how quality should be ensured. The NCHE (2020), Guidelines for Adoption of an Emergency Open Distance and e-learning (ODEl) System by the Higher Education Institutions During the COVID-19 Lockdown, provides procedure to be followed before a program is rolled out online and the implementation procedure of the guidelines.

Among the guideline (NCHE, 2020) is that there should be an accredited program to be delivered online and evidence of staff to deliver the program. However, given the timing and abruptness of introduction of the online learning (Iqbal *et al.* 2022, Lobos, *et al.*, 2022), and as the Swedish National Agency of Higher Education (HSV 2008, 9) argue the campus based (physical learning) is different from e-Learning and therefore should be assessed differently.

Also, Iqbal *et al.*, (2022) notes that researches have examined the online learning where it was offered as a planned modality and not as a response to emergency. It is our consideration that the rolling out of ODEL programs even when guidelines were followed should be evaluated for the institutions' ability to deliver quality programs to learners during COVID-19 pandemic.

Nawangwe, *et al.* (2021), investigated how various institutions fitted in the new normal in accordance to the tripartite roles of the university; teaching, research and community engagement. The questions set were: How did the various university stakeholders respond to the COVID-19 lock down? Are African (Uganda Universities) in particular prepared to positively encounter or take advantage unforeseen shocks? What strategies can we suggest to mitigate the plethora of pedagogical challenges created by the COVID-19 Pandemic shock? What will be the future of University Education after the COVID-19 Pandemic lock down? (Nawangwe *et al.*, 2021, 17).

Nawangwe, *et al.*, (2021) indicate that “only public universities remained active, but even then, only MAK remained functional, mainly in research and community engagement during COVID-19”. While it is true that all universities were closed, but the closure for some (both private and public universities) was for a short time since they quickly went online to offer programs.

This casts doubts to the Nawangwe, *et al.*, (2021) assertions. Moreover, Nawangwe, *et al.*, (2021) study claims to have done interviews with staff of universities in Uganda but does not indicate how many and from which universities, indicating a methodological challenge. In spite of the challenges identified in this study, it still remains an important study for it informs us of the lack of infrastructure as a key challenge for online learning. Iqbal *et al.* (2022) note that studies on online learning have focused on the developed countries whose ICT infrastructure is already developed and thus not comparable with the ICT infrastructure in developing countries.

It is important to note that successful online learning depends on the virtual environment. Virtual environment includes easy and structured ways of finding information and of communicating with peers and teachers. The environment consists of tools such as search engines, internet voice communication, instant messaging, chat groups, e-mail, blogs, social networking programs, online web/videoconferencing systems, e-portfolio programs, and social operating system (Swedish National Agency for Higher education, 2008, 42-43).

The agency notes that skilled users utilize a number of tools to enable them learn. We thus asked the question, what eLearning tools did students use to learn during COVID-19? It is understood that most virtual tools such as LMS were developed to favor the business community and they are also developing as spinoffs from the gaming industry that considers different ways of creating an interactive environment (Swedish National Agency for Higher education, 2008). It is noted that for example, second life is used in teaching mathematics and language. The education institutions should therefore customize the learning platforms to fit their needs.

We investigate the students experience with learning environment including ICT infrastructure, access to power and the social cultural environment in which learning takes place. In particular, we investigate students experience with virtual communication between student to student and student lecturer, the online assessment, the internet access and power and electricity connectivity, and the overall socio-cultural and economic environment in which students stayed or were learning from during the online learning.

Iqbal *et al.* (2022) note that by understanding these students' experiences which affect quality of learning, institutions of higher learning (universities) can make timely and effective decisions in order to improve their teaching and learning processes. In their study, Alexander and Golja (2007), studied how students' experiences can be used to derive quality in e-learning system.

They argue that providing feedback on key challenges can lead to improving online delivery of content and system improvement. This guides our study to find out how universities can avoid future challenges.

Many studies have been conducted on students learning experiences during COVID-19 (see, Lobos, et al 2022, Mahyoob, Iqbal, 2022, Yan *et al*, 2022). These studies bring out key challenges of online learning, but it should be noted that they all come from different environments with regard to students' experiences, it is indicated that not all students had negative experiences during the emergency learning caused by the pandemic (Lobos, *et al* 2022), that students from worldwide institutions claimed to be satisfied with the support provided by teachers and institutions (Lobos, *et al* 2022 citing Aristovnik *et al.*, 2022).

Mahyoob (2020) indicates that in the Arab World online learning was positively reported for being effective during the pandemic. In his study, Mahyoob (2020) cites Shivagi (2020) for having investigated the weaknesses, challenges strengths and opportunities of online education during the pandemic (Mahyoob, 2020, 354). However, the cited study is not listed in the references and Mahyoob's study does not endeavour to identify these. We believe that our study can identify some of the challenges as well as the opportunities of online learning. We believe that online learning provides many opportunities for learning, but there is a lot to learn not only from the learning environment but also from the technology we are currently using and one exploited during COVID-19 pandemic.

The learning environment and how it affects online learning

The learning environment is understood as everything (physical, emotional, virtual, institutional, *etc*) that affect students learning. There are not many references which have defined the learning environment. Even the guides available to assess quality of online

learning in different environments have not defined the learning environment (see for example, Swedish National Agency for Higher education, 2008, Asia-Pacific Economic Cooperation-APEC (2019). It is however understood as, “a variety of elements including educational, physical, psychological, emotional, social, and that affect students' intellectual growth” (Afari *et al.*, 2013 cited in Zamani *et al.*, 2022, 587).

A more comprehensive and clearer definition is that the Learning environment refers to the diverse physical locations, contexts, and cultures in which students learn. The term also encompasses the culture of a school or class—its presiding ethos and characteristics, including how individuals interact with and treat one another—as well as the ways in which teachers may organize an educational setting to facilitate learning (Bates and Bates, 2019, 490).

It should be emphasised here that the culture of a school supersedes the physical school space and encompasses the virtual environment as well provided that it is arranged to deliver educational program. The arrangements put in place involving the infrastructure, the teachers, the surrounding in which the teacher and the student stay during learning all have implications for learning.

Thus, Zamani *et al.*, (2022), argues that the learning environment determines what, how, why the student learn, and has a strong influence on the learning experience of the student. In the learning environment we investigated the surroundings of the student during learning, the access to resources such as electricity, internet and support from the university among others.

Online Learning in Uganda

There are limited studies that have considered history of online learning in Uganda. Most of the available studies emerged during COVID-19 pandemic and are more focused on the impact of

COVID-19 that the history of online learning. Articles and studies available before the COVID-19 pandemic were focusing more on the distance education. A system of education which allows minimum face to face to face interaction but relies heavily on print materials to enable students to learn where ever they are instead of coming to compass (Matovu, 2012).

Matovu notes that with the introduction of ICT infrastructure, many students will enroll into universities and it would reduce overcrowding at universities. Uganda formulated ICT policy in 2003 and the objective among others was “integrating ICT into mainstream educational curricula as well as other literacy programs to provide for equitable access for all students regardless of level” (Farrell, 2007), With the increasing number of students demanding to access universities, and with the support of government to make ICT an integral part of education system, ICT became handy tool for keeping university learning afloat.

Although online learning has been in Uganda for some time, COVID- 19 pandemic is the one that opened the bigger gates for online learning. As already indicated, it was not until 2019 that the national council opened up and provided guideline for Open distance and E-learning (ODEL) with the formulation and launch of ODeL guidelines, which were followed by emergency guidelines cater for COVID-19 pandemic emergency lockdown of schools. It is therefore important to note, although online, distance learning was in existence in Uganda, it was run without quality control. Thus, there is limited literature on the evolution of and history of ODeL in Uganda.

Methodology

Data was collected using a survey questionnaire which was sent to students online. Students were selected conveniently as well as purposively. Purposively, only students who experienced online teaching during COVID-19 received a questionnaire to fill.

Conveniently, questions were sent to students whom we assumed would fill the questionnaire. Questions covered a number of areas, including student support learning physical environment of students' location, access to material online and students support services offered by the university. In addition, a sample of 10 students selected purposively was chosen to answer open ended interview questions. The population was drawn from only students who studied on line during COVID-19 pandemic. The sample consisted of both students undertaking undergraduate training and post-graduate training at various levels (postgraduate diploma, Masters and PhD). We sent a questionnaire online using email and WhatsApp platforms for learners to fill at their own convince. We collected both qualitative and quantitative data.

As already indicated, our sampling procedure was nonprobability convenient sampling meaning that we targeted people who would be accessible and willing to answer questions. The people we targeted are those who had studied online and would be reached. We targeted mainly third year students and postgraduate students mostly using the WhatsApp groups and emailing groups we knew. It became apparent that we could only access the WhatsApp groups of students now at campus.

The analysis of findings was both descriptive and analytical. The qualitative data was analyzed using thematic content analysis method. We read through each qualitative response identifying the theme and the content for example, in some cases, a student would respond to a statement that goes beyond the scope of the question asked.

For example, we asked students the experience with the university website, the student besides indicating that the website was amazing, she added that they spent a lot of time trying to learn the website and the IT and that this limited their learning. Thus, from that response we were able to learn that the student is talking to lack of training. Indeed, she is one of the students who responded

that there was no pre-raining provided before e-Learning was rolled out at MUST.

In addition, we reviewed different documents such as ODeL institutional policies and presidential directives to stop the spread of COVID-19 in Uganda. Other documents such as UNICEF and World Bank reports regarding online learning were also reviewed to inform this study.

This study observed the ethical issues of confidentiality and informed consent. Although names of respondents were sought for this study, we do not refer to the individual respondents by name in our write up. In addition, every questionnaire was preceded with a confidentiality close and declaring of goals of this study and the call for voluntary participation.

Results and Discussions

We received responses from 72 students. 16.7% from BSU and 83.3% from MUST. Majority of the students were in 3rd year (52.8%) and 4th year (26.4%) of the study program. The online training having started during the COVID- pandemic, most of the students we targeted were in their 4th year and 3rd year of study apart from the Postgraduate students. The findings indicate and confirm this choice of students. The table below indicates the profile of respondents.

Table 1 Respondents by category

Respondents Per Institution	MUST	60	83.3
	BSU	12	16.7
	Total	72	100
Gender	Male		59.7
	Female		40.3
	Total	72	100

Type of University	Private	1	50%
	Public	1	50
	Total	2	100%
Level of enrolment	Undergraduate	50	83
	Graduate	4	7
	Postgraduate (PhD)	6	10
	Total	60	100
Academic Programs	Social Science/Arts/Humanities	17	28.3
Major disciplines	Education	1	1.7
	Engineering/Technology/Computer	9	15.0
	Business/Commerce	15	25.0
	Agriculture	5	8.3
	Medicine/Health Related	13	21.7
	Total	60	100.0
Year of Study	1st	6	8.3
	2nd	9	12.5
	3rd	38	52.8
	4th	19	26.4
	Total	72	100

Findings also indicated that a substantial number of students 20.8% were in second year and 1st year of study combined. While we did not ask the question on the explanation of delay of completion of studies, it is possible that the delay could have been caused by the challenges of studying online.

Studying online during COVID-19 impacted on students in so many ways including psychological, isolation, lack of access to reading materials and internet access among others (Bertolett *et al*

2023, Lobos *et al.* 2022, Iqbal, et al. 2022, Yan, et al. 2021, Nawangwe, *et al* 2021). It is possible that these challenges could explain the delay in the completion of the program, thus the 20.8% of students in 2nd and 1st year of study.

The figure below indicates the responses according to year of study. By the time we carried out this study, all students who studied online are expected to either have completed or in 3rd year of study or higher (for example those undertaking a 4 or 5 year study program).

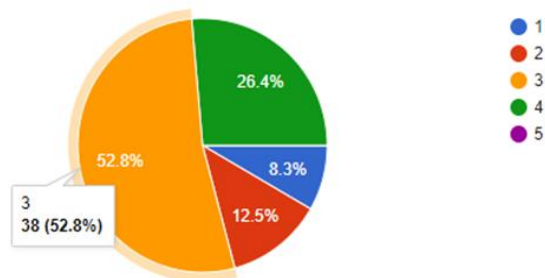


Figure 1: Year of study

In terms of gender distribution majority of respondents were male. Bertolotti, et al.,(2023) investigated the impact of COVID-19 pandemic and found systematic gender-based differences in the perception about how different students were affected by the COVID-19 disruptions of learning. We note however that for our study, there was no significant differences between male and female with regard to how they were affected by COVID-19. The analyses shows that majority of respondents were male followed by female as the figure below shows.

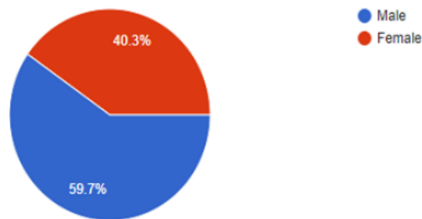


Figure 2: Responses by Gender

Research question one: What was students experience with institutional support?

Institutional support ranges from the quality of program being offered, the preparation before the start of the program and support during e-learning.

Experience with quality of the program

We investigated the quality of program using three indicators, availability of content on line, quality of content and quality of references. Majority (69.4%) of students indicated that learning materials and lecture notes were available online and could easily be accessed using the eLearning platform provided. With regard to quality of content availed on line, there was a mixture of responses but generally there was a balance between those who said that the content was good and those that said that it was bad (qualitative responses).

With regard to references used, qualitative findings indicated that although some students responded that online references were old and poor, majority of responses indicated that in both Universities, references online were of high quality and could easily be traced online through search engines such as Google Scholar. Thus, one of the responses indicated that *the quality was good especially by use of Google Scholar* (BSU Post Graduate student).

Institutional support

We asked students about their computer competence and the support they received from universities before enrolling to online learning. Majority of students 56.9% had moderate skills. This finding is in agreement with Rivera-Vargas et al (2021) who argues that most students register for online training when they do not know what it requires and thus needing training. We asked students whether they received training before or at the beginning of online program. We asked them the question, were you trained on online learning program and how to use online learning platforms? The following are the findings;

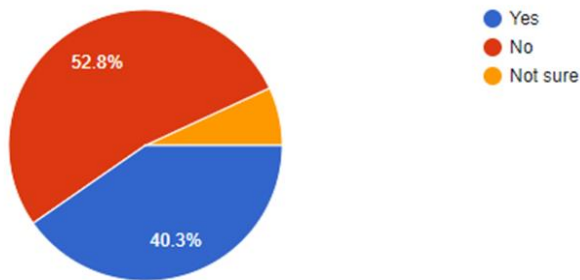


Figure 3: data indicating whether students were trained

Majority of students (52.8%) indicated that they were not trained. Even those who indicated that they were trained (40.3%), when asked about the duration of the training, majority indicated that the training was less than a month with majority (43.1%) indicating that training was between one-three days. The following figure indicates findings on the duration of the training.

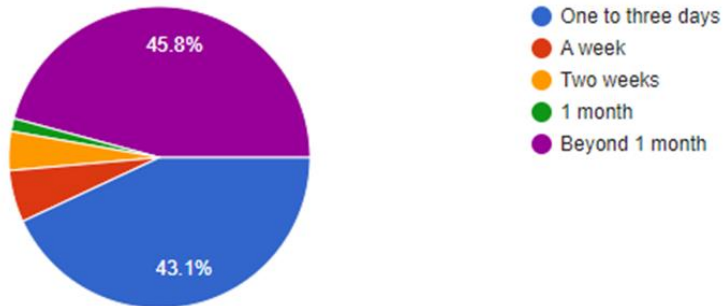


Figure 4: Duration of the Training

From further analysis, it shows that the training was not effective as 36.1% and 20.8% indicating that the training was moderately effective and not effective respectively.

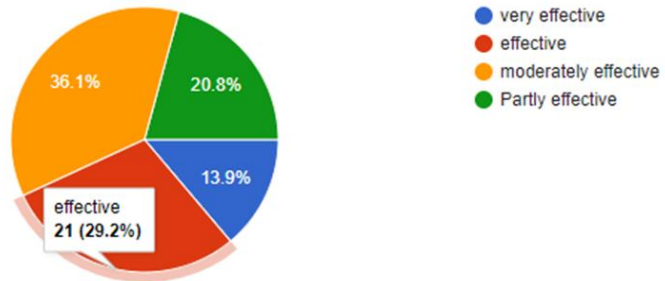


Figure 5: Effectiveness of the training

One of the students asked to describe her experience with institution's website, she had this to say, *"They were amazing. Learning how to explore them newly, was another lesson though some of us spent more time trying to deal with the IT while failing. This affected out time of study"* (MUST undergraduate student). This implies that students had less training to use IT and how to navigate the website.

From the above responses, we agree that the transition was sudden as Iqbal, *et al* (2022) argue and also that this was an emergency response to a health challenge (COVID-19) and to provide opportunities for continuous learning (Lobos *et al* 2022; NCHE 2020). We also agree that there was no preparedness for most institutions to roll out online programs.

While Mahyoob (2022) argues that transition to online learning was only successful for institutions that previously were running online programs, Kabahizi (2020) disapproves this assertion. UCU which was running online programs before COVID-19 could not transit easily and without challenges. There is no institution that can be fully prepared for an emergency whose dimension, magnitude and impact is unknown. Kabahizi (2020), argue that due to unpreparedness of the institutions to deliver and set examinations online, students took the matter to court prompting NCHE to suspend all examinations online. We argue that an emergency response as a necessity ought to be followed with continuous training of learners and staff on how to use online learning.

We asked students whether there was continuous training received after e-learning kicked off. 43.1% indicated that there was no training and 22.2% were not sure of such training and 34.7% received continuous training. From these findings one can argue that the institution did not offer enough preparation to the students for them to be ready for online learning.

University Infrastructure and Web access

We asked students the question, *how was your experience with institutional websites, platforms and e-learning management systems and the direction offered by them to accessing clear information with regard to a range of support services? Please explain in detail.* Responses varied from institution to institution, but in general most students indicated that they had a good

experience. Thus, the fact that the University has a rich website gives opportunities to get the information required in making inquiries and the BSU student portal is very simple to work with. e-learning management system was good. Its only support services that were not good at all. The efforts of lecturers to resolve issues cannot be underscored. They played a very key role in having eLearning successful (MA student from BSU). After learning about how to use e-lms, it became very easy and more interesting to learn online, the experience was Very good, for example with Zoom classes there is audibility and learning can be recorded in case you are not able to attend (MUST undergraduate student).

The MUST e-learning platform was profitable because it allowed the lecturer to upload reading materials and references directly to every student hence as opposed to using the class presidents to avail reading materials to the class. In fact, some lecturers even uploaded videos and tutorials! How great! (MUST undergraduate Student).

It was a fair experience because some of us who were in rural areas missed out on information due to electricity and network problems however, I can say the Learning management system was a good one because I managed to attend lectures and do assignments. It was good because I was able to know and learn how to use internet based platforms for studying (MUST Undergraduate student).

The above citations indicate that the experience was good. But of course, like every new system, the online learning was not without challenges. Some students indicated that their experience was not good; Sometimes the websites we're not working which would hinder us from attending classes. Sometimes it was the network issues or data issues that just made it difficult to keep up with, and, all I can say is that I didn't benefit, network issues were big factor to me and so I couldn't access the systems not until I reported to campus. Even while at campus some lecture notes were

not uploaded on the system so we had to try other ways of accessing information (MUST student).

Communication between students and lecturers and vice versa

Successful learning depends on the ability of students to be reached by staff and students to contact staff. Most students were able to reach out to staff using tools such as zoom and interactive chats during online learning.

The question asked was; were you able to contact staff using online platforms e.g. privately contact staff using interactive chats such as in zoom.

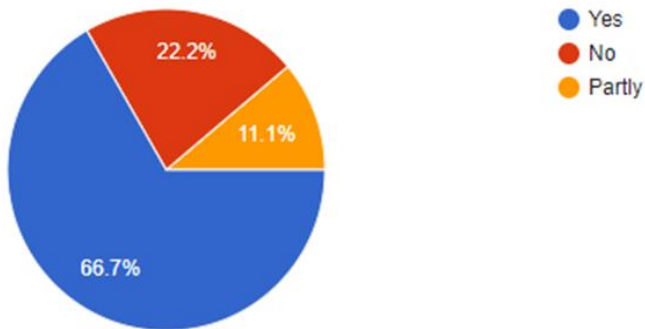


Figure 6; students' ability to communicate with staff using online platform

It was found that, at 45.9% communication using online platforms was generally not effective. We asked the question, *how effective was the communication?* The following figure represents responses we got.

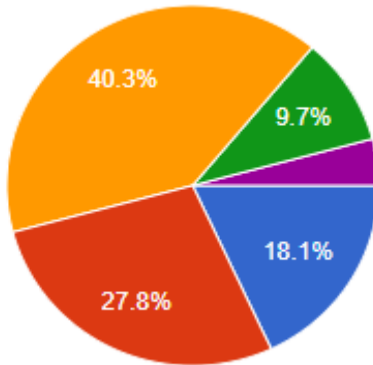


Figure 7: effectiveness of communication using online platforms

To further interrogate into the communication we found out that most students used emails to communicate (50%) and WhatsApp (26.45%). While the two channels of communication mostly used one expected instant responses. For example, WhatsApp is one of the instant messaging (IM) tools that has gained popularity and used among university students (Ali and Kootbodien, 2017). And Attalla et al., (2020) point out that WhatsApp is scored to be the first top used messaging application worldwide used in 180 countries by about 1.5 billion of the population and in the same study it was found that 100% staff responded that they use the application for communication.

With regard to email communication, El-Sabban (2009) argues that e-mail system is most widely used tool of communication in academia for disseminating information to its community and for receiving feedback. One of the advantages of email is that it can be opened anywhere, anytime where there is network and can store materials for a long time and to be opened when they are needed. Our finding indicate that most students received response to their communication in less than or within 3 days with about 44.4% students receiving feedback in less than a day.

Furthermore, 26.4 % of students received feedback after one week or never received feedback at all. This could be explained by some network challenges which we have already highlighted. Data for feedback on communication is provided below.

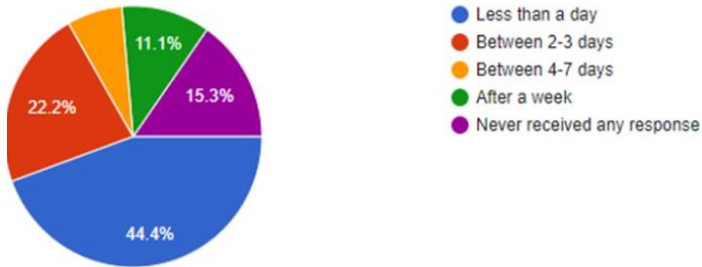


Figure 8: Time taken to receive feedback from staff

It is expected that during e-learning, institutions of higher learning should have troubleshooting mechanisms to address challenges that come with poor internet connectivity, lack of feedback and any other complaint from students (NCHE, 2020). We investigated the institutional efforts to resolve challenges such as putting in place means of reporting grievances. We asked students the question, *was there a provision for registering grievances or complaints to the university management in case of online learning challenges?* Majority of the students (58.3%) indicated that there was no provision, and a small number (9.7%) was not sure of such provisions. We thus argue that there was limited effort to put in place ways of reporting complains.

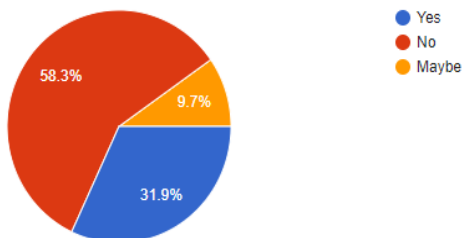


Figure 9 Availability of option to register grievances

One of the guidelines that NCHE (2020) provides is for institutions to put in place means of delivering materials to learners including flash discs and a list of qualified academic staff to deliver ODeL programs and the strategy to cover for the lost materials and time during ODeL. Without providing for ways of receiving grievances, and a non-conducive learning environment characterized by loss of internet connectivity and insufficient teaching time, student's learning is impacted negatively.

Sufficiency of Teaching Time

Findings from this study show that teaching time was not sufficient. This corroborates other findings in this study which indicated that there were breakdowns in internet and network challenges making students drop off during teaching. Data is presented below:

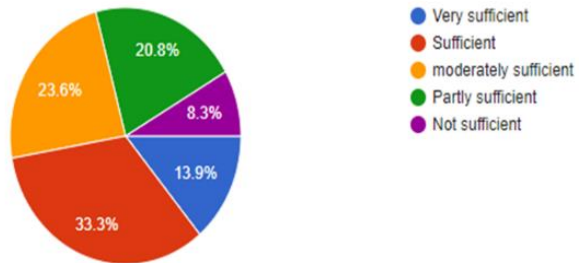


Figure 10: Sufficiency of Lecture time

Research question 2. Effect of Study Environment during COVID-19 pandemic

In terms of responses on how the students were affected by the environment. We asked students to rate their experience with online learning during COVID-19. Majority (60.5%) of respondents were of the view that the experience was an interesting one. The rest of respondents thought that it was moderate (15.5%), partly interesting and 11.1% thought that this was not interesting at all. We thought that this response should be corroborated by other responses that could define the experience with the learning environment. We thus directly asked respondents to describe the environment in which they studied. We asked them to respond to the question: *How would you describe the environment in which you studied during online teaching?*

From the analysis of findings majority were of the view that the environment was not conducive for learning. The following are some extracts from the qualitative responses on the environment in which learning took place:

It was not steady due to sudden inconveniences at home, poor networks, failure to attend physical discussions, delays in starting lectures at the right time”, (MUST undergraduate student).

The environment was “Very bad due to noise from the background, poor or lack of internet and sometimes not even having the devices to use to attend an online class” Another respondent (Student from MUST),

“The environment was distractive which made it a non-conducive area for studying”. “I was home, too much distractions” (MUST undergraduate student).

“It was challenging since the people around at times engage you with other work even during lecture times, there was unstable network and not comfortable for a student since most of the times it was done at home yet at home most us, we assigned other duties” (MUST undergraduate student).

In general, it was found that the home environment for study was not conducive since students are also assigned duties and responsibilities at home.

These findings agree with Iqbal, *et al.*, (2022), who argue that the home environment is not a conducive environment for studying online.

Only a few respondents who worked outside the home environment and those that had control over the home environment were satisfied by the environment, we got the following responses: “I mostly studied from my bedroom at home which was generally OK. I need to acquire a standard desk and chair to allow me comfortably study for long hours because the lectures lasted a full day” (PhD Student from BSU) and another respondent who worked outside home had this to say, I was lucky to have been using work place environment which was conducive over weekends.

In one isolated case one of the students pointed out that environment in which they studied was highly influenced by noise from the lecturers’ environment, she notes thus I would recommend lecturers/facilitators to always be at stable place with good network and less disturbance like disruption by their family members like the young children (MUST undergraduate Student).

Internet Access and Connectivity

For online learning to succeed, it requires stable internet connectivity and access to computer or internet enabled devices. Ours finding indicates that most students were challenged by the unstable network. Some students could not complete a session of learning due to either internet connectivity or lack of data or both.

This is supported by the responses we got from the analysis of qualitative data: most of us had a challenge of getting data and so could not regularly attend class, sometimes there would be a breakdown and loss of connectivity when under a lot of pressure from students, for example during online tests hence some students ended up missing the tests and submission of examinations (undergraduate student from BSU) and the learning platforms were designed to accommodate few people so they could some time slow down. I had a bad experience since it was my first time, I even missed some lectures, I didn't know the estimate of data a lecture could take so sometimes I attend lectures halfway and also the university refused to provide us with data yet we paid functional fees it was really a worst experience (MUST student), Network connection was not good at all during zoom meetings (MUST Undergraduate student).

During online teaching, I was in a remote area where network was a big problem. Therefore, attending lectures online wasn't possible which made me decline in my performance for the whole academic year, and some of us who were in rural areas missed out on information due to electricity and network problems.

One of the students describes the learning environment as “so bad, am not happy at all with this mode of delivering lectures because it doesn't consider that some students stay in very remote areas of the country” (MUST Undergraduate student).

To support the above views, we asked students their ability to access computer systems and internet off campus. The following were the responses. We asked them to respond to the question, as a

student, were you able to access compatible computer systems and networks off campus? The following were the responses.

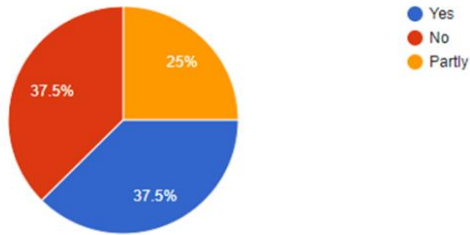


Figure 11: Students response on finding networks and computer systems off-campus

From the findings only 37.5% could find stable network and compatible computer systems off-campus. 25% had partial access, while the rest could not access. We there for argue in general there was limited by limited connectivity and access to computers and internet as the qualitative findings indicated, there was a challenge of internet connectivity. Therefore, from the data we collected we assert that for the two institutions, learning was not effective during COVID-19.

Interesting to note however is that the learning management systems in the institutions did not put into consideration the need for customizing of the platforms to fit the needs of students. Teaching mathematics and conducting agricultural experiments was difficult using existing learning platforms at the two institutions. While the learning platforms used by MUST and BSU has both audio visual and interactive features, they lacked the basics to teach courses such as Mathematics. From qualitative responses on learning environment, it was found thus, it was difficult to maintain maximum attention for long periods and also difficult to follow up in practical lectures like Maths and that the environment was not favorable since it became difficult to study different

calculations online. We could not do experiments and practicals in agriculture, they were differed until when the universities would be open, yet we were not certain of the opening of the university (MUST undergraduate student).

In an informal conversation with one of the stake holders, during the writing of this paper, he asserted that, if he went to the hospital and found a medical doctor who studied at MUST during COVID-19, he would run away without treatment because medicine was taught for 3 weeks when students returned for face to face sessions in preparation for examinations because it could not be offered online.

Medicine is one of the practical subjects that cannot be studied online for some courses without customising the e-Learning systems to fit them. The use of virtual reality environment is highlighted as one of the requirements for teaching clinical medicine online (see, Delungahawatta, *et al.*, 2022). In his study of the challenges of e-Learning during COVID-19 pandemic in the Arab World, Mayhoob (2022, 353) found that it was difficult to study language on line especially phonetics and phonology where the teacher needed face to interaction to teach phonemes, allophones, morphemes etc.

Research Question 3. What to improve for better e-Learning Experience?

Given the highlighted challenges with online learning and the experience of students we asked students to make recommendations on what should be improved. They recommended that there should be more training and institutional support; there should be enough training to students on e-learning and there should be more than one IT person, and that institutions should, Create some time and train students about the use of online study and IT application. In addition, it was recommended that the universities should run online classes entirely if they come up with solutions to the online

learning challenges. Thus, one of the students had this to say, they are expenses that can be overlooked in regards to physical classrooms. So, unless the institution is ready with solutions to different challenges that come with online classes, I recommend that for now it can be blended learning (MUST undergraduate student).

Students also recommended that management should ensure a robust support system, availability of committed support staff and availability of internet services to students. For more comprehensive learning, students recommended for provision of data to students to be able to learn. But a more feasible recommendation was universities should partner with service providers such as telecom companies to make internet cheap for students.

Students also recommended for infrastructural improvement; well of course due to poor infrastructure, this makes it hard to conduct (and attend⁵) online classes, for example use of zoom which requires a good internet connectivity. But in addition, I would recommend blended online and physical classrooms (MUST undergraduate student).

Online learning is highly influence by location of students. Students in rural areas where network and internet connectivity are low and also access to electricity limited may face challenges of completing assignments as well as completing a lecture session (Nawangwe, *et al.* 2021).

Conclusions and recommendations

This study aimed at investigating learners experience with e-Learning during COVID-19 pandemic. The study investigated three questions focusing on learners' experience with institutional

⁵ Emphasis is ours

support, learners experience with study environment, and recommendations for improvements

With regard to institutional support, findings indicate that while universities rolled out e-Learning programs, there was no sufficient preparation of learners. For example, there was no adequate training offered before and during e-Learning. With regard to the learning environment, most students studied in unstable network area and thus their learning experience was bad. In addition, they did not get where to address complaints and this could easily escalate their anxiety and isolation. Thus, we conclude that learning environment was not conducive. With regard to what needs to be improved, findings indicate that there was a need to improve the infrastructure as well as training staff and students for better e-Learning experience. We thus conclude that there was not enough infrastructure and training of students.

In general, we make conclusions that Bishop University and MUST were ill prepared for e-Learning and this resulted in a bad learning experience for learners. The challenges identified in this study, make us conclude that there was limited quality assurance with respect to e-Learning offered by the two institutions of our investigation. We make recommendation that both institutions and other institutions should start early to prepare for online learning. The situation has changed and universities are back to normal, and the online learning has completely gone down. We believe that with the presence of students back on campus where they can access free internet, online learning should be encouraged as a preparation for the future. In addition, institutions should develop the e-Learning platforms to accommodate practical subjects that could not be delivered online during COVID-19 pandemic.

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