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University Lecturers and Students' Perceptions about Online Teaching and Learning during the Outbreak of COVID 19 in Northern Zone of Tanzania

Victorini Salema
Mwenge Catholic University, Faculty of Education, P.0. Box 1226, Moshi, Tanzania
Email: victorini_salema@yahoo.com

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Abstract

Online education is provided by fewer universities in Africa than the western world. However, during the outbreak of COVID 19 many universities were forced to embrace online teaching and learning, even those who were against it. The outbreak of COVID 19 opened new ways of teaching and learning that most of universities had to adopt for their survival. This study was carried out to explore the beliefs of Tanzanian lecturers and students on online teaching and learning during the outbreak of COVID 19. This study is anchored on the Technology Acceptance Model by applying a concurrent triangulation design, which helped the researcher to collect both qualitative and quantitative data. The study targeted university lecturers, Deputy Vice Chancellors, academics, and students in selected full- fledged universities in the northern part of Tanzania. The findings indicate that lecturers and students were positive about the use of online teaching and learning, and there is no statistically significant difference in perceptions mean scores between lecturers and university students on the use of online learning during the outbreak of COVID 19. However, various challenges were identified that hamper the smooth running of online teaching and learning, such as lack of adequate resources, poor connectivity of internet and lack of knowledge and skills on how to use the online platforms. This study recommends that universities have to improve the availability of resources for online teaching and learning and to invest in staff capacity building to motivate the lecturers to use online teaching more effectively.

Keywords: Online courses; Perceptions; COVID 19.

1. Introduction

COVID-19 infection was declared as a pandemic by the World Health Organization (WHO) on March 11, 2020 (Cucinotta and Vanelli, 2020). Following this declaration, many countries tried to prevent the spread of this pandemic by imposing closure, social distancing, avoiding face- to-face education, and restricting mobility (Zheng *et al.*, 2020). More so, higher education institutions had to think about alternative ways of teaching and learning in order to protect students, academic and administrative staff and slow the spread of the virus (Cao *et al.*, 2020; Huang *et al.*, 2020). COVID-19 crisis has interrupted life with lots of loss of life, health impacts, and loss of livelihoods and affected education highly by impacting 87.6% of the world's total enrolled students. All universities closed their campuses and shifted to online education. While this was very successful in the developed countries, the story was not the same in developing and under-developed countries. In Tanzania, for example, the use of online teaching and learning prior to the pandemic was minimal because of the low level of motivation for it from lecturers and limited awareness on its usefulness, and the challenges related to technology, such as consistent Internet connectivity and computers for all lecturers and students. Although some universities in Tanzania have had online teaching and learning programmes for some years, there has been no systematic study to determine the perceptions of various stakeholders on online teaching and learning during the outbreak of COVID 19, when most of universities had to switch to online instruction.

This study aimed to examine the perceptions of lecturers and students concerning their acceptance of online teaching and learning. The Technology Acceptance Model (TAM) was used as a framework for application of new technology and the perceived perception of the users during COVID-19. TAM, posits that there are two factors that determine whether a computer system or technology will be accepted by its potential users: perceived usefulness, and perceived ease of use. The key feature of this model is its emphasis on the perceptions of the potential users.

1.1.1. Research Questions

This study was guided by the following research questions:

- What were the perceptions of university lecturers and students towards online teaching learning during the outbreak of the COVID 19 pandemic in the northern zone of Tanzania?
- What were the challenges they encountered in offering online teaching and learning during the outbreak of COVID 19 pandemic in universities?

1.1.2. Hypothesis

Ha: There is a significant difference in the perceptions mean scores of students and lecturers in universities in northern zone of Tanzania regarding the benefits and challenges of online instruction during the outbreak of COVID 19.

1.2. Review of Empirical Studies

Online learning has substantially increased worldwide and it is seen by some as a panacea for problems that people face to access quality education worldwide. Many low-resource countries suffer from a shortage of teachers (United Nations Educational, 2014), and online teaching and learning can improve the access to education and improve the ability for marginalized groups to attend school (Gulati, 2008). In Africa, where many countries are struggling to meet the demand for primary, secondary and tertiary education, e-learning has become an integral tool to deliver education, as well as to improve the quality of education by facilitating access to educational content. A report published by United Nations Educational (2014) showed that 250 million children worldwide have no access to basic education, and many of these children are from disadvantaged communities.

Advantages which have been cited in the use of online learning include the promotion of learner centered pedagogy in that learners can be in charge of their learning and participate effectively in the teaching/learning process (Weimer, 2013). It also promotes the ability to use technology as the learner and the teacher must use computers to teach and learn.

Studies have shown positive results on the use of online learning on learning outcomes. Many scholars and educators believe that online learning can be an effective tool in combating the rising cost of postsecondary education by spreading the cost of a class over a much larger number of students compared to the traditional setting, dividing the cost by tens or hundreds of thousands of students as opposed to dozens (Bartley and Golek, 2004; Bowen, 2013; Jung and Rha, 2000; Tucker, 2007). There is a large number of studies that find positive statistically significant effects for student learning outcomes in the online or hybrid format compared to the traditional face-to-face mode. Some of the positive learning outcomes are improved learning as measured by test scores, student engagement with the class material, improved perception of learning and of the online format, stronger sense of community among students, and reduction in withdrawal or failure.

Navarro and Shoemaker (2000), while studying higher education delivery found that student learning outcomes for online learners were as good as or better than traditional learners regardless of background characteristics and that the students were greatly satisfied with online learning. Rovai and Jordan (2004), examined the relationship of sense of community between traditional classroom and the blended format in universities, and they found that students in the blended format had a stronger sense of community than students in the traditional format. In a study that compares learning outcomes for students who self-selected into the online format for a macroeconomics course, researchers found that after correcting for sample selection bias, test scores for the online format students were four points higher than for the traditional format (Harmon and Lambrinos, 2006).

However, some studies reported of the challenges encountered with students with disabilities in participating in online teaching/ learning process. According to Hernández and Barberà (2021) problems related to disabilities in attending online courses include lack of time to complete the academic tasks and the characteristics of their disability. Problems related to academic materials were also of particular significance.

Moreover, previous studies made some recommendations towards the use of online teaching and learning. According to Thorne (2003) COVID-19 outbreak might be an opportunity for universities to learn from the rapid changes and adaptations during this unprecedented time, and as such rethink the extent to which many courses rely on face-to-face teaching on campus. Nonetheless, the COVID-19 pandemic cannot be simply considered as an excuse to prioritize online teaching and dismiss traditional face-to-face learning. Forms of blended teaching and learning are already underway to at once harness the capacities of both online and face-to-face teaching and hopefully manage the limitations of both when it comes to learning. Focusing on the learning experience is critical in the process of integrating traditional and online forms of teaching and learning and implementing blended learning. Michel (2018), identified several recommendations that are warranted based on the results presented on online learning: Instructors teaching online courses need to become familiar with the course management system. They need to receive training in online teaching before entering the virtual classroom so they can learn the most effective techniques to enhance the online learning experience. They need to provide clear communication with their online students. They need to offer detailed instructions on how to participate in online course activities such as online threaded discussion. They should also define the acceptable guidelines for online class participation. It is important that instructors provide online course activities that encourage more interaction between students. Instructors need to be the facilitators of the discussion board so they need to be actively involved in the discussion board, monitor student progress, and give consistent feedback to students. They are required to encourage student participation and collaboration and should try to use course design features that clearly explain the course goals and topics.

Zhang *et al*. (2020) made the similar types of suggestions for the government of China such as the use of high-quality broadband, speed up technology iteration, to equip teachers and students with electronic devices to meet the needs of online teaching and learning, providing systematic teacher training concerning the use of effective online

teaching platforms, providing legal, financial and administrative support from government to the instructors for their professional development. This could also be applied in Tanzania.

According to UNESCO (2020) as the instructors experience online education more, they will explore many more resources to provide psychosocial support, digital learning management systems, systems built for use on basic mobile phones, massive Open Online Course (MOOC) Platforms, self-directed learning content, mobile reading applications, collaboration platforms that support live-video communication and tools for teachers to create digital learning content.

1.3. Theoretical Framework

This study is anchored on Technology Acceptance Model (TAM) which has been one of the most influential models of technology acceptance, with two primary factors influencing an individual's intention to use new technology: perceived ease of use and perceived usefulness. An elderly learner who perceives digital games as too difficult to play or a waste of time will be unlikely to want to adopt this technology, while an elderly learner who perceives digital games as providing needed mental stimulation and as easy to learn will be more likely to want to learn how to use digital games (Neil Charness Boot, 2016). This model is relevant to the study in the sense that online teaching and learning make use of technology. If the users consoder the technology ease and useful, they will embrace it. Exploring the perceptions of the lecturers and students on their use of online is important so as to lay the ground for future plans in embracing technology in education and development of new programmes that are purely online by nature or blended programmes to reach many citizens who cannot attend the tradition face to face programmes.

2. Methodology

The study employed a mixed method that followed a concurrent triangulation design. According to Creswell and Creswell (2018), in this approach, the researcher collects both quantitative and qualitative data then compares the two databases to determine if there is congruence, difference or same combination. In this study, the researcher used this design to be able to capture information from different stakeholders in universities about the use of online platforms in relation to the outbreak of COVID 19.

This study targeted seven full-fledged Universities in the Northern Zone of Tanzania whereby five were private and two of them were public universities (TCU, 2019). The researcher focused on full-fledged universities on the assumption that they are more matured on both the programmes they offer, resources and infrastructure that is related to online teaching and learning.

Probability and non-probability sampling procedures were used to sample the target groups above. One public university was selected while 2 private universities were selected for the study. A total of 150 students were sampled while 60 lecturers were also sampled from the universities. That entails 60 students from public universities and 24 lecturers from public universities. Also 90 students and 36 lecturers were sampled form private and public universities respectively. Northern zone has more private full- fledged universities than public universities and that was the rationale of taking more private universities. The university DVC Academics were selected purposively because of their key position in the university in ensuring teaching and learning during the outbreak of COVID 19. One DVC Academics was taken from every sampled university that makes 3 DVC academics.

Various instruments were used for data collection. These included: Questionnaires for students, Questionnaires for Lecturers, and Interviews for university DVC academics. The instruments were pilot tested in one university, which was not part of the sample. During the pilot the researcher was able to correct the instruments ready for data collection. Validity was ensured by experts in the field of education and ICT. Reliability was tested by Cronbach alpha. The Cronbach alpha for students' questionnaire was 0.72 while for lecturers questionnaire was 0.80. Generally, the reliability was acceptable for the two questionnaires for students and for lecturers. For qualitative data the researcher ensured trustworthiness and credibility by triangulation, member checking and consistency in the process of data collection and analysis. Data was analyzed quantitatively by descriptive and inferential statistics. Qualitative data was transcribed coded and themes were generated. The findings from quantitative and qualitative data were triangulated to make sense out of the data.

3. Results and Discussions

The findings are categorized into three sections: (1) Perceptions towards online teaching and learning during COVID 19 pandemic; (2) challenges encountered by lecturers and students in the use of online teaching and learning; and (3) recommendations for improvement in the application of online teaching and learning.

3.1. Perceptions towards Online Learning during COVID 19

The perceptions of students and lecturers were captured by Likert scale questions with 5 points scale namely 1= strongly disagree, 2= disagree, 3 = undecided, 4 agree and 5 = strongly agree. The scale was comprised of 19 items that sought the perceptions of lecturers and students on online teaching and learning and the use of technology during COVID 19.

Generally the perceptions of both lecturers and students were positive about the use of online teaching and learning during the COVID 19 pandemic. This is evident from the general perception mean scores of 3.59 and 3.65 for students and lecturers respectively. Based on the five level Likert scale, a mean less or equal to 2 connotes disagreement or negative perception, a mean of 3 connotes a neutral point and a mean greater than 3 indicates

positive perception. With the outbreak of COVID 19, the use of online teaching and learning was inevitable for universities in Tanzania, but students satisfaction with online teaching and learning is important for universities to advance on online teaching and learning in the post-pandemic context (Dhaqane and Afrah, 2016; Douglas *et al.*, 2015; Green *et al.*, 2015; Rothman *et al.*, 2011).

Specifically, when students were asked if online learning was convenient during COVID 19, most of the students respondents, (*M*=4.2) or 83% agreed and (M=3.95) or 82% of all the lecturers agreed. Therefore, the findings suggest that majority of respondents were positive in their views that online teaching and learning was convenient during the COVID 19.

When the students and lecturers were asked if online teaching and learning was cost saving, the majority of students (84%, M=4.1) and lecturers (85%, M=4) agreed that it saves time and money. This suggests that the majority of respondents were positive in their views that online teaching and learning saves costs while a few were uncertain or disagreed.

The other highly rated items were that online learning helps in structuring one's own schedule (easier for adults) where majority of the lecturers (M=4) or 86% agreed and (M=3.9) or 82% of the students agreed. Moreover, most of the respondents agreed that online teaching and learning requires strong internet access (M=4) for students and (M= 3.5) for lecturers. According to Herguner *et al.* (2020), Ku and Lohr (2003) who studied Chinese students' perceptions of their first online class, and their study revealed some of the advantages of online classes. Participants in the study stated the advantages of online classes: online classes required "real" participation and actual efforts. The Internet, one of the most important inventions of the century, provided the opportunity of continuous learning with online learning, which enables learners reach information comfortably and without any place restriction.

Again lecturers and students agreed on other items such as: online teaching and learning is easier for shy students while recommending its flexibility, ability to increase motivation, participation, less destructions, and ensures instant feedback.

The findings indicate that the majority of the respondents rated the effectiveness of online teaching and learning as effective that is 84% and 87% for students and lecturer respectively. This implies that the use of online teaching and learning was positively received and effectively used despise of some challenges.

Girik (2020), investigated learners' perceptions of online learning during the COVID-19 pandemic in UK. The researcher used a semi-structured interview guide to examine college students' perceptions. The researchers interviewed the learners by calling them using the WhatsApp application. In this case, the students found that using online learning during the COVID-19 pandemic was good and helpful. Students hoped that the lecturers would make use of trending applications such as free Messenger applications in the online learning system. Additionally, they said that individual tasks helped keep the physical distance required due to the pandemic and that they needed group tasks to help friends who did not have internet access. In addition, they hoped that materials and assignments would be preceded by an explanation. For this purpose, they recommended that Voice Notes could be effectively used when giving instructions. However, they complained that the material and instructions implemented by the lecturer in online learning were not easy to use. The findings indicate the Covid 19 pandemic affected many of the activities of universities, and online teaching and learning was applied to bridge the gap, but it was not done with ease because the unpreparedness of most universities especially in the south. One of a DVC academic in one of the targeted universities argue, "*Covid 19 has shaped us to adopt new ways of teaching and learning, where face to face interactions has to be minimized"(*interview 20/8/2021). These findings again concur with other scholars who argued, recent events blurred all forms of instruction into online classrooms and assignments (Barrett-Fox *et al.*, 2020).

3.2. Hypothesis

The researcher was interested to determine whether there was statistical differences in the perception mean scores between the lecturers and students. An independent sample t- test was performed and the following is the summary of the test:

Table-Independent t- test desciptives

Group Statistics					
	groups	N	Mean	Std. Deviation	Std. Error Mean
mean	lecturers	60	3.6033	.60757	.07844
	students	150	3.5713	.59836	.04886

Table-Independent sample t- test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
mean	Equal variances assumed	.004	.952	.349	208	.728	.03200	.09180	-.14898	.21298
	Equal variances not assumed			.346	107.267	.730	.03200	.09241	-.15118	.21518

The independent sample t- test was tested at 0.05 significance level and all the assumptions were tested accordingly. The findings are summarized: the hypothesis was to compare the 60 lecturers (M =3.60, SD = 0.60) to the 150 students (M = 3.57, SD = 0.57).

The independent t- test results are t (208) = 0.349, p = .728. The findings indicate that there is no statistically significant differences in perception mean scores between students and lecturers. This is confirmed from the fact that the p- value of 0.728 is greater than significance level of 0.05, leading to failure to reject the null hypothesis. That implies that although there are some slightly differences in the perception mean scores between the lecturer and students, they can be attributed to chance.

3.3. Challenges Related to Online Teaching and Learning

Data for this research question was collected mainly by qualitative approach. The targeted groups were the university lecturers, students, and DVC academics. Some of the common challenges which were identified included: Lack of adequate resources, poor internet, computer shortage, lack of technical knowhow, poor attitude, poor teaching methods for online courses, poor infrastructure, assessment of online courses and power cuts to mention few.

Online courses need various resources, including computers and internet facilities that will enhance communication between the lecturer and the students. One of the DVC academics from one university was asked about their preparedness for COVID 19 in relation to teaching said, "*We were caught unprepared for online teaching. We had no plans for online teaching but our lecturers are now obliged to do so though we have serious lack of adequate resources such as computers and internet connectivity*. (Interview 15/8/2021).

Similarly, another DVC academics from another university argued, "*We are challenged with COVID 19 that the learning cannot go smoothly by face to face mode. But adding online learning may be a solution but for the poor countries it may be a big challenge'. (*Interview 14/8/2021).

One lecturer when was asked about online teaching he argued, "*Online teaching cannot easily be implemented in the Third World because there is no adequate resources and preparedness in resources and mindset*". (Interview 15/8/2021).

One university student when he was asked about his experience about online course in the COVID 19 pandemic replied, "A*ctually online learning is difficult to follow lessons properly. This is from the fact that one has to be connected to the internet and as students we cannot afford especially when you have to use your laptop and buy internet bundles*. (Interview 14/8/2021). Another student added, "O*nline learning has become an opportunity to learn new skills and connectivity.* (Interview 21/8/2021). The findings indicate that there are some stakeholders who think COVID 19 and online leaning are opportunities while others think it a challenge to teaching and learning. The World Bank (2020) identified some of the challenges regarding the challenges related to online teaching and learning, such as students' under-performance, missing out on social aspects, low engagement, high dropout, low completion, low retention rates, no or little supervision, internet connectivity, electricity and limited access to digital devices. The World Bank study also added that infrastructure, and staff readiness and confidence are needed in ICT integrated learning. This implies that online learning need more care if the intended outcomes are to be achieved in the process of teaching and learning. Şenol and Çağlar (2021), reported the complaints of one respondent:

Many of my students lost their internet during my online classes. Since students did not have sufficient knowledge about online education before, they had problems while downloading their lecture notes from the system and uploading their homework to the system, especially students who connected to online classes with their mobile phones had a lot of problems.

Childs (2000) points out that technological limitations may cause frustrations and demotivation among learners during e-learning. This is the same situation in most of our higher learning institutions as observed by the researcher.

4. Recommendations

The COVID 19 pandemic has changed the way of doing many things in higher education. This reality is to be embraced as it can help countries, especially low income countries, find ways to cope with ongoing challenging situations. The following recommendations can help the universities and individual lecturers and students to cope with online teaching and learning.

First, universities should seriously invest in improving teaching and learning by online mode especially in capacity building to improve the methods for quality delivery of online courses.

Second, universities need to improve internet connectivity and the servers to ensure that while in campus the staff can access internet for online courses and for the online platform efficiency.

Third, Universities could also adopt online teaching and learning for selected sections of their face to face programs so as to help students get familiar with the applications of online teaching and learning. This is likely to help raise funds for the universities because students who live a distance from campus could still enroll in courses. The graduates should be exposed on how they could use the online platforms in their own jobs or in schools.

Fourth, there is need of training students to be computer literate especially those who come to the university for the first time and had no opportunity to do so in secondary schools. There is also a need to raise students' awareness about online teaching and learning and encourage them to take it seriously and be honesty in using the technology.

Fifth, there is also a need to train staff for online learning especially on how to use the online platforms and the required pedagogy to promote active learning. Mentoring staff on online teaching and learning benefits faculty by providing them with opportunities for professional growth.

Six, there is a need to develop blended programmes that will help to reach many more students who cannot afford face to face programs.

5. Conclusion

This study was geared towards determining the perceptions of lecturers and students in universities in northern zone of Kilimanjaro. The findings indicate that the both lecturers and students perceive positively the online teaching. However, several challenges hamper the smooth running of the online teaching and learning, such as the shortage of resources, and internet connectivity. Covid 19 may become a less significant global health crisis as time goes on, but educational institutions can continue to find new approaches to teaching and learning while maintaining quality in online and hybrid instruction.

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