

Assessment of remote teaching during covid-19 lockdowns and its implication on quality of instruction of undergraduates in Kenya

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Abstract

COVID-19 outbreak has affected every facet of life including teaching and learning. Following the national lockdowns and closure of learning institution to curb its spread, learning institutions have had to adopt alternative learning and teaching strategies. However, the shift to remote learning was sudden and most students and lecturers were not prepared from the sudden shift to remote teaching. Therefore, this study aimed to assess remote teaching during covid-19 lockdowns and its implication on quality of instruction of undergraduates in Kenya. The study was qualitative and purposive sampling was used to target twelve lecturers and eight students from two public and two private universities. Thematic analysis was used and the findings revealed that remote learning has been widely adopted in Kenya universities with lecturers teaching classes of up to 100-150 students averagely six hours a week. Remote learning was found to be characterized by a number of challenges constraining its effectiveness. These include poor infrastructure, poor student engagement and lack of sufficient learning resources. These challenges contribute to the negative perceptions among most lecturers and students on the quality of remote learning as compared to physical classrooms.

Date of Submission: 25-06-2021

Date of acceptance: 08-07-2021

I. Introduction

The COVID-19 pandemic has spread across the world affecting almost all the states and territories. Since it was first identified in December of 2019, the public have been cautioned to take responsive care. The main public care strategies include handwashing, physical distancing, washing hands regularly and avoiding mass or public gatherings (Gautam, & Gautam, 2021). Lockdowns and stay at home strategies were and continue to be put in place in many countries to flatten the curve and control the transmission of the virus. In response, several institutions and schools were closed or its business hours minimized as early as March 2020. Soon after complete lockdown in some countries were implemented (Misirli, & Ergulec, 2021). As the movements and assemblies were minimized, education institutions have had to re-open only for selected levels and courses while the rest have had to continue with their classes remotely or online. Approximately 1.6 billion students around the world were kept out of the classroom. Several universities and colleges discontinued their face-to-face teaching and learning (Alqurshi, 2021). Several activities were undertaken by learning institution to transform classroom teaching to online platforms. The situation led to a distinctive rise in the in distance or remote learning where teaching is done remotely on digital platforms. However, as Hodges (2020) argues, there is a difference between well-planned online learning and the shifting of leaning to online or remote platforms in response to a crisis. The speed at which the shift was done had had an impact on the adoption as well as the reception of online learning. Therefore, in line with this claim, this study purposed to assess remote teaching during covid-19 lockdowns and its implication on quality of instruction of undergraduates in Kenya

II. Literature review

Ghada (2021) reiterates that COVID-19 had led to dramatic shifts in the delivery of global educations. Millions of students have been affected by the closure of education institutions due to the pandemic. The pandemic has led to the sudden shift of learning away from physical classrooms where many universities have also had to rapidly shift to digital and virtual strategies to ensure continued learning for its students. Many people believe that even after the pandemic, online or remote learning will continue as the pandemic may have paved way for a new hybrid model of education. In response to this, Ghada (2021) conducted an empirical study to examine the effect of the sudden move to online learning in one university in Egypt. The study compared the grades of 376 business students who completed the face-to-face course before the outbreak of COVID 19 and 372 students who complete the course fully online in 2021. The results showed that their results were not

statistically different in the students grades. The study attributed this to the good learning experience over online platforms which was contrary to what was expected following the fast and unplanned shift to remote teaching. In another study, Mishra, Gupta and Shree (2020) conducted a mixed method study to address the essentialities of online teaching and learning during the COVID-19 pandemic and how the existing resources within the education institutions transform the process of learning. Specifically, the study purposed to determine the perceptions of students and lecturers towards online teaching modes in India. The study found that universities worked in tandem with their students, the academicians and the technicians to fully utilize the existing resources to facilitate a smooth shift to online classes. The students reported that the experience of learning online has been different, yet equally effective in meeting their learning needs. Similarly, the lecturers were in agreement agreeing that there were challenges such as some cases of internet connectivity, but overly the process, due to well-laid out plans has been effective.

Alqurshi (2021) investigated the effect of the emergency remote teaching and learning on pharmaceutical education in Saudi Arabia in order to make recommendations on the contingency strategies that should be put in place. The researcher adopted two-cross-sectional Likert-scale questionnaires targeting the students and the lecturers separately. The aim was to determine their satisfaction to the use of virtual classroom, completion of the course learning outcomes and the assessment through alternative methods. More than seven hundred students from nineteen facilities and seventy four faculties were targeted and the majority of the teachers challenge the effectiveness of delivery of scientific concepts over virtual classrooms. The study further found that both students and teachers were concerned with the lack of student-teacher and student-student interaction. This was found to negatively correlate with the student's overall satisfaction. Remote teaching is forcing the lecturers to adopt alternative assessment methods which was reported by the lecturers as having a positive effect on the student's overall skills even as half of the student expressed concerns over the lack of guidance in tandem with the unfamiliar methods of assessments. Similar findings were reported by Jiaf, Islam, Gu and Spector (2021) who found that the satisfaction of online learners with online platforms was directly or indirectly impacted by their computer self-efficacy and the perceived ease of accessing and using the platforms.

Similarly, Pkhrel and Chheti (2021) indicate that the closure of schools and learning institutions impacted more than 1.6 billion learners in more than 200 countries around the world and the closure of learning institutions and other learning spaces have affected more than ninety-four percent of the world's population of students. Pkhrel and Chheti (2011) As a result several far-reaching changes have been implemented and they aimed to determine the impact of the move on teaching and learning in institutions. Internet bandwidth was found to be relatively low with less access points. The data packages were also found to be costly as compared to the income of the families or people in developing countries making accessibility and affordability of remote learning difficult. Similarly, they found that in regards to the policy-level interventions, it was found that there is a need for further clarity on the matter.

Konig, Jager-Biela and Glutsch (2020) state that in Germany, closure of schools begun in March of 2020 and only partial reopening has been done leading to massive shifts to online teaching. The study aimed to establish how the teachers, during remote learning maintained social contact with the students and also mastered some of the core teaching challenges that arose. The study revealed that teacher competence and their education opportunities to learn digital competence was indispensable during the shift to remote learning. It was instrumental to the successful adaptation of online learning.

Elfirdoussi, Lachgar, Kabaili, Rochdi, Goujdami, and El Firdoussi, (2020) conducted a qualitative study to investigate and assess distance learning in Morocco during the current pandemic. A total of 3037 students and 231 professors were enrolled in the study in order to determine the limitations of e-learning platforms. The study revealed that the students and their professors did not find online learning more interesting than the ordinary learning and the professors need to provide at least 50% of their learning face to face. The professors and students indicated that the overhaul of teaching to remote platforms takes time and also demands mental and physical performance. This results in pedagogical insecurity where there is a need for interactive learning. Critical is also the need for the professors to receive technical support and training in using remote platforms. Moreover, most students also reported that the classes were mainly disrupted by challenges such as electricity power-outs and lack of affordable and reliable internet connectivity which limited their learning process.

In Nepal, the suffering from COVID-19 affected its 1.3 million students at regular colleges and universities. The students lost their regular college activities while the universities had to withhold their examination and intake schedules. In the country, all the universities, except for one which offers distance learning mode even prior to the pandemic, have had to change their mode of classes even as they had few policy arrangements in place to cope with the new shift. The universities in Nepal were built for on-class practices and there is limited infrastructure and preparedness for online shift. The students and faculty members reported they were not prepared both mentally and resource-wise. Several reasons were pinpointed by the students including the unreliable internet facility. Consequently, the students and the staff may face trauma such as psychological stress and anxiety due to the fear of the unknown as they shift to online learning platforms.

In South Africa, Tanga, Ndhlovu, and Tanga (2020) reiterate that though COVID-19 is a health crisis, its impacts have been felt in all aspects of life and in all sectors and disciplines. Students across different fields are experiencing disruption in learning due to the closure of the higher learning institution due to minimized physical interaction and national lockdowns. In order to minimize the impact of the pandemic, the academic programs, have adopted emergency remote learning and teaching. In response to this Tanga, Ndhlovu and Tanga (2020) explored the experiences of the social work students and their educators on the emergency remote teaching and learning and their implication on education. The research adopted a qualitative approach through telephonic interviews. The study found that the studies felt anguish, frustration and foresaw a worthless future. Most were frustrated by the rural infrastructure characterized by the lack of accessible internet connectivity and in some cases lack of electricity. Similarly, the social work educators also expressed concerns over the use of online teaching doubting its success.

III. Methodology

This study adopts a qualitative research design that focuses on the remote teaching and learning under the COVID-19 pandemic. The qualitative approach was undertaken in a bid to enhance the proper description and further elucidation of the experiences of the students and their educators. This was to expand the scope of understanding on how the shift to remote learning had affected teaching and learning during the COVID-19 period. In any qualitative study, sampling is often done purposively to select respondents who fit in with the study objectives. Therefore, purposive sampling technique was adopted. Two private and two public universities were targeted. Purposive sampling was also used to sample twelve lecturers from the institutions. Three lecturers were sampled from the four institutions. As the study also sought to solicit the perspectives of the students, eight students, two from each university were purposefully selected to partake in the study.

To collect data, semi-structured interviews schedule guides were used in order to explore the experiences and the perceptions of the study participants on remote learning. To complete the study, both face-to-face interviews were done while the majority filled their interviews through google-forms. Transcriptions were thoroughly done by reading and re-reading the texts in order to inductively and systematically come up with categories and themes. Some of the significant components that emerged and recurred were described. The study also synthesized descriptions of the themes with the use of direct quotations from the responses of the participants.

Trustworthiness and integrity of data was done with the use of a diverse pool of participants which provided diverse views point. Further, direct quotations from the transcriptions provide integrity and trustworthiness of the data. The researcher's interpretations at different appropriate time also ensures that there is a balance between subjectivity and flexibility which is crucial in a qualitative study.

IV. Findings

For the study, there were two categories of participants. There were the students and the university lecturers. In regards to the educators, the majority 8(66.6%) were male and only 4(33.6%) were female. Majority of respondents 6(50%) were from the Education Foundations department while those from the Communication and Technology department were only 2(16.6%) as were the Math, Actuarial Science and the Chemistry departments respectively.

Table 1: demographic characteristics

		F	%
Gender	Male	8	66.6
	Female	2	33.4
Institution	Public	4	50
	Private	4	50
Department	Computer and Technology	2	16.6
	Educational Foundations	6	50
	Math & Actuarial Science	2	16.6
	Chemistry	2	16.6
Have you been involved in teaching students remotely during covid-19 lockdowns	Yes	12	100
	No	0	0

The respondents were asked if they had participated in remote teaching since the 2019 COVID-19 outbreak. All of the lecturers indicated that they had took part in remotely teaching students during the lockdown. The respondents indicated that there are various platforms they use to teach the students.

Table 2: platforms

Platform	F	%
Google Meet	12	100
WhatsApp	1	8.3
Webinar	2	16.6
Ken Net Web Conferencing	1	8.3

Table 2, shows that all of the respondents indicated that they use google meet to conduct most of their remote teaching while some use webinars, others use ken net web conferencing and some use WhatsApp. In regards to the students taught per session, most of the lecturers indicated that they instruct between 100-150 students. In some cases, the lecturers indicated that the classes vary depending with most of those from the public universities instructing up to 250 students in some classes while those in the private universities indicated that they instruct ten students in some classes.

Table 3: Hours taught

Hours	F	%
3	3	25
7	3	25
6	2	16.6
9	1	8.3
4	3	25

In regards to the number of hours spent teaching remotely every week, the hours taught were varied with the minimum hours taught being 3 hours taught by 3(25%) lecturers. Some of the lecturers 3(25%) taught four hours and seven hours a week while those who taught for six hours weekly were only 2(16.6%) and one indicated that they teach remotely nine days a week.

The majority of the respondents indicated that they conducted the remote lessons mostly from home, though some indicated that they do it at the university or at the office at times. Further, the findings indicated that the gadgets used to conduct the remote teaching were mainly over the phone and through computers and laptops. Similarly, the students also claimed that they mostly learn at home or in cyber cafes.

In regards to monitoring attendance, it was found that attendance was compared to the registered list for the unit. Monitoring of attendance was mainly done using the online register where the online attendance list helped the lecturers know who attended class or not. The other lecturer indicated that *'The system indicates the name, number and duration in minutes that one attended.'*

The respondents were asked what they do if they have to conduct a class and they are in an uncondusive environment to conduct the class. Several strategies were identified including giving the students assignments and arranging for a make-up class. One lecturer indicated *'I usually give an assignment and then arrange a make-up later when it's more convenient for me to do so.'* Another lecturer indicated that when he is in an uncondusive situation *'It becomes quite difficult leading to rescheduling of the lesson. Not all are able to attend again due to other engagements/online classes.'*

However, one of the lecturers argued that *'I have not found myself in such a situation- I always plan for my online classes.'* Almost similar points were raised by another lecturer who indicated

'In the event of such environment, the class is certainly suspended, however, the lessons are timetabled hence planning minimizes such scenarios. Nonetheless, interruptions like power blackout, poor network connectivity quite often lead to interruptions.'

For the students, most indicated that they rarely find themselves in such situations because the classes are scheduled beforehand.

The respondents also indicated that they often are able to do most of what the lesson requires them to do through remote teaching. One lecturer was surprised that the students actively participated as compared to face-to—face learning. *'Yes, surprisingly students actively participate unlike physical face to face teaching/learning process.'* However, another lecture was concerned over the limited time for engaging all of the students in the class especially where the number of students learning remotely is high. He argued *'No, student participation for large classes is a challenge. I have devised class videos for the lesson but it is not as efficient as physical demonstrations in class where I am able to address student's challenges immediately'*

The students also indicated that they also find the classes interesting but not as much as the physical classrooms. One argued *'there are many distractions either at home or at the cyber. Your attention is never truly fully in class.'*

Aside from participation, the lecturers indicated that the lessons requirements are not always met because *'there are challenges emanating from constraints of time. It ends up being a teacher centered lesson so as to try to cover more.'*

Accessing of necessary materials was reported to be a challenge for some of the lecturers especially those who due to the sudden nature of the lockdowns were locked upcountry had to travel or source other resources to continue with the classes. As most of those in charge of the resources were also locked down at home, accessing some of the resources was deemed to be a challenge.

However, not all of the lecturers had challenges as one argued that *'Most current materials required for teaching/research are fairly documented and available virtually hence lockdown is not a major challenge to access of materials. Moreover, the University library is accessible through the maktaba platform.'*

Next, the participants were asked whether they experience network issues while teaching and the extent to which the problem persisted. The majority of lecturers indicated that network was a major challenge with one terming it as a *'major handicapping condition, either from my side or from the side of some learners in remote destinations.'* One lecturer indicated that to overcome the challenge, they have *'identified spots in my compound where I can access network through Safaricom broadband.'* Other lecturers had to install internet connections in their homes to facilitate teaching remotely.

The respondents were also asked to indicate the feedback they get from their students and the cost of internet was reported as the major source of complaints for the students. One lecturer indicated that the *'They complain of costly internet, poor network coverage in some areas but with time most have adopted and they have started to appreciate this mode of learning.'* The main constraints in regards to remote learning was found to be associated with issues of cost of the internet, lack of the gadget to use for learning especially for some students who do not have laptops and the unreliable electricity prone to rationing and power cuts. Consequently, only those who have stable and reliable network and other infrastructure that make the learning environment conducive enjoy learning remotely. This leads to mixed feedback. While some find it good as it is justified through robust discussions that quite often ensues, some complain of being expensive. Additionally, students are scattered all over the country and some regions lack necessary infrastructure to enable any meaningful learning/navigation through the platform. The inability of the remote learning to meet some of the students' unique needs was also identified as a major challenge.

It also seemed that for the Students in the CEP (Continuous Education Programme) they enjoy online learning much probably because they are working and can afford the required equipment and data unlike regular students who are not working hence find a challenge getting laptops, smart phones and even internet.

In comparison to the physical learning, the lecturers felt that due to the constraints facing most of the students and some lecturers in terms of resources and poor infrastructure to support remote learning, *'remote learning can't guarantee quality learning to the extent that learners from regions lacking necessary infrastructure will be eliminated in the long- ran, unless the question of poor infrastructure is urgently addressed.'*

Another lecture indicated that physical learning is better because it creates an ideal learning environment where learners can learn from each other and enhance their concentration and prompt feedback. One argued that *'For me physical learning is good since student engagement is noticeable unlike online where you do not even know whether the students are listening /participating or not.'*

One of the respondent felt that physical learning does lead to quality learning, but remote learning, if well-planned and resources sourced, then it can enhanced blended learning.

The respondents were then asked to indicate whether the quality of instruction through remote learning is good for undergraduate students. The lecturers felt that due to the changes in technology *'it is time for students to be introduced to online learning – there are many advantages to it – I would support the blended learning mode that is well organized.'*

Another lecturer felt that due to the rapidly changing world, working from home is becoming increasingly common so *'learning remotely is good. This is because it sharpens skills on using internet as source of knowledge as opposed to the old methods of physically getting materials from the library.'*

V. Discussion

The aim of this study was to assess remote teaching during covid-19 lockdowns and its implication on quality of instruction of undergraduates in Kenya. The findings indicate that all of the lecturers sampled in the study have engaged in remote teaching since the lockdown of learning institutions and suspension of physical classes. This was similar to other regions of the world where there has been a massive shift to online and remote learning to promote continuity of learning. Most lecturers were found to use laptops and smartphones to conduct their classes while the students used mainly their smartphones to learn because most indicated that they cannot afford to purchase a computer or a laptop. Google meet was also most frequently used in the remote teaching and learning. Similarly, Pkhrel and Chheti (2021) reported that several far-reaching changes have been implemented to move on teaching and learning in institutions to remote platforms in response to COVID-19. The classes taught by the lectures were mainly reported to be more than one hundred and this may pose a

number of challenges for the lecturers such as maintaining the class attendance list, but it was found that the online register automatically helped the lecturer establish the students who attended the class which could then be checked across the students registered for the unit in question.

It was found that planning ahead was important in limiting the constraints brought by being caught off-guard in an uncondusive environment when the lesson should be commencing. However, where the environment is uncondusive, the lecturers reported that they re-scheduled the classes and gave the students some assignment to cover the time the class did not happen. For the students, such challenges meat that they had to miss classes.

Sourcing of materials, for both students and lecturers was found to be a challenge at times, especially where one is caught unaware and cannot access their laptops or course material. Similarly, this challenge extends to the inability to conduct and meet all the lesson requirements. A number of challenges were identified in regards to meeting the learning outcomes. First, it was found that the participation of students in the large classes was a challenge as the online classes are not as efficiency as the physical ones. Similarly, remote learning is more lecturer-centered so student engagement is quite limited constraining active participation, use of illustration or even demonstrations. The claims were similar to those found by Alqurshi (2021) who study found that both students and teachers were concerned with the lack of student-teacher and student-student interaction. This was found to negatively correlate with the student's overall satisfaction. This suggests that engagement between students and between the lecturers and students is critical for the overall satisfaction with the learning approach taken.

Infrastructure was reported as one of the key constraint to effective remote teaching and learning. Mainly the internet and electricity were found to be key challenges for the students and the lecturers especially those in rural areas. Internet is quite expensive for the students and the connectivity is sometimes unreliable which may lead to disruptions during the class. Unreliability of the internet, however is not a local challenge only as Mishra, Gupta and Shree (2020) reported that the students reported that the experience of learning online has been different, yet equally effective in meeting their learning needs. Similarly, the lecturers were in agreement agreeing that there were challenges such as some cases of internet connectivity, but overly the process, due to well-laid out plans has been effective. The findings suggest that infrastructure is a crucial aspect for the success of remote teaching and learning.

The perceptions of the students towards remote teaching is mixed with some being happy about it, but these were only those whose needs were met by remote learning such as those working and learning part- time. Similarly, positive feedback was found among the students who have reliable internet connectivity and a conducive learning environment. In line with the constraints currently facing remote learning, the lecturers and students generally perceive physical learning to lead to quality learning as compared to remote teaching. Due to the lack of proper internet connections and further planning, interaction with students is limited and the lecturers feel a need to ensure active participation which they are not assured in remote teaching. These findings are contrary to those by Ghada (2021) who findings showed that there results were not statistically different in the students grades. The study attributed this to the good learning experience over online platforms which was contrary to what was expected following the fast and unplanned shift to remote teaching. However, in this study, there are several constraints that effects the quality of remote teaching and learning.

In conclusion, the study establishes that remote classes may be as large as 250 students with most classes having 100-150 students. Several challenges face remote teaching and learning such as access to teaching and learning resources, poor infrastructure and poor student engagement. Consequently, most of the students and lecturers perceive remote learning as being poor quality learning as compared to physical learning. This is because those who enjoy and actively participate in learning are those with quality infrastructure such as good internet connectivity and a conducive learning environment. However, most of those in rural setting have a myriad of challenges making remote learning a challenge.

The study makes the following recommendations.

- a. There is a need to sensitize and involve stakeholders including the policymakers, the lecturers, the students and technicians to promote digital literacy and policies to ensure rolling out of remote learning is done in a way that does not compromise the quality of learning.
- b. Students, especially those from rural areas should be provided with the necessary equipment at a fee to ensure that they can access learning.
- c. Staff and students should be subjected to proper training on ways to maximize remote learning and teaching.
- d. The government should subsidize the internet costs and promote connectivity in rural areas to increase its reliability and affordability for all students to promote equity in access to learning.

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Antony Njoroge Johnson. "Assessment of remote teaching during covid-19 lockdowns and its implication on quality of instruction of undergraduates in Kenya." *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 11(4), (2021): pp. 26-32.