



# OPPORTUNITIES AND CHALLENGES OF REMOTE TEACHING AND LEARNING IN UNIVERSITY EDUCATION DURING THE COVID 19 PANDEMIC LOCKDOWN PERIODS. THE CASE OF MAASAI MARA UNIVERSITY, NAROK, KENYA

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## Introduction

The COVID-19 pandemic has proved to be catastrophic to many people around the globe regardless of age, gender, culture and socioeconomic status. This has led to unusual new norms across many countries, characterized by lockdowns, working from homes, closure of learning institutions, and changes in academic calendars and modes of learning, among other adverse effects. Of interest to educationists is the impact that the COVID-19 pandemic has had on the education sectors in many countries, such that worldwide about 1.53 billion learners have been out of school. School closures in over 184 countries have impacted 87.6% of the world's total enrolled learners. Hence, dropout rates across the globe are likely to rise as a result of this massive disruption to education access (ECW, 2020). Indeed, the number of confirmed cases of COVID-19 has spiraled since the World Health Organization (WHO) declared it an international public-health concern in January 2020. WHO, since April 2020, has reported over 1 million confirmed cases in more than 206 countries, with more than 45,693 deaths. The global economy has been crumpled, while strict lockdown measures are forcing millions of people around the world to stay at home. The lockdown measures are causing considerable hardship and disruptions, which are likely to impact on over 75 million school and college-aged children and youth, of whom 39 million are girls; and their families who are

already marginalized by other adversities such as armed conflict, forced displacement, economic hardships and natural disasters. Certainly, while other critical needs such as health, water and sanitation are being met during the global COVID-19 pandemic, educational needs cannot be forgotten. Unmet educational needs impede all students, and have long-term implications, especially for the most vulnerable. Millions of children who have already been deprived of their right to education, particularly girls, are being more exposed to health and well-being risks (both psychosocial and physical) during COVID-19 (ECW, 2020).

In Kenya, the government took steps to curb the spread of the COVID-19 pandemic in mid-March 2020. Upon realizing that some emerging cases were increasingly being detected and reported through efforts by the Ministry of Health, the Government of Kenya through presidential decrees exercised its constitutional mandate and responsibility to protect its citizens from the pandemic by curbing its wildfire-like spread, through a number of measures. The measures taken included the closure (lockdown) of major socio-economic and politico-cultural operations (learning institutions included), social distancing, isolation, quarantine measures (self or forced), wearing of masks, washing of hands/sanitizing, countrywide curfews, close monitoring and constant containment of some major cities, particularly in Nairobi, the capital city, which saw an explosion in COVID-19 cases. Other measures included ultimatums regarding disposal and/or burials of dead persons, regardless of whether or not the cases are related to COVID-19, in order to reduce the incidence of gatherings that could easily lead to the spread of COVID-19. These measures are subject to constant revision depending on the projections of the infection rates. So far, the Ministry of Health in Kenya estimates that COVID-19 pandemic cases are above 160,559 cases, with 2,781 deaths (MOH, 2021).

COVID-19 has brought disruptions in schooling occasioned by closures of learning institutions that impede children's access to education, hence they become more

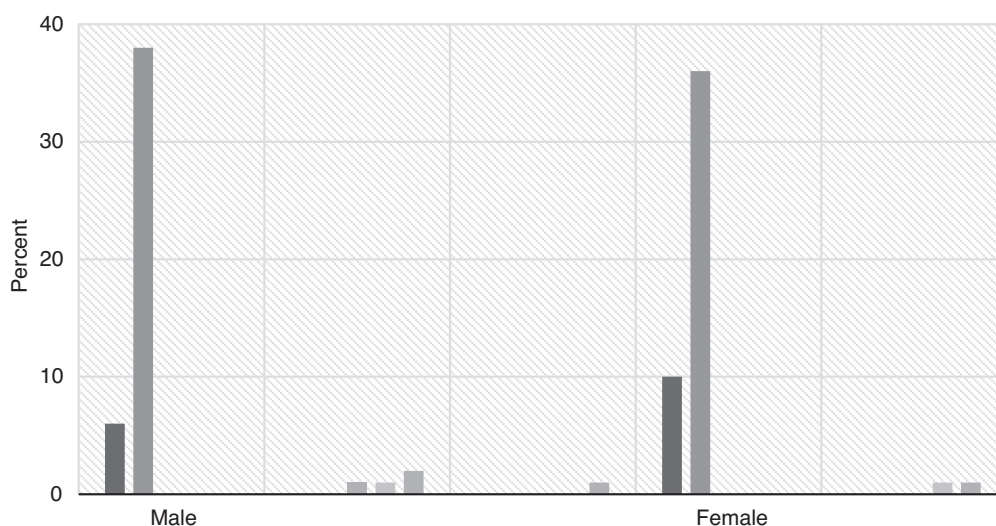


Figure 1. Distribution of respondents by age, gender and status at the university

vulnerable and unprotected. As household finances are being strained and needs increase, out-of-school children are more likely to be exposed to risks like family violence, child labor, forced marriage, trafficking and exploitation. Amidst such effects, proposals from the Ministry of Education and other stakeholders favored education through remote learning, whether via radio programs, home-schooling, online learning or other innovative approaches. A number of learning institutions have implemented such measures, with little concern about the accompanying challenges, so long as some learning is in progress. Additional long-term risks brought by COVID-19 include lack of food security, physical and mental health problems, increased school drop-out rates, increased numbers of orphans, and psychological harm to children related to COVID-19 and social distancing. With the adopting of remote and digital modes of teaching, the learning gap has increased and most learners are being excluded from online education due to the challenges of access to the internet and reliable electricity. Such scenarios necessitated a study that investigates opportunities and challenges of online teaching and learning in university education during the COVID-19 pandemic lockdown periods. This study investigated Maasai Mara University students and lecturers in Narok, Kenya.

### Objectives

- i) Categories of Remote Teaching and Learning used
- ii) Attitudes towards the use of Remote Teaching and Learning
- iii) Effectiveness of Remote Teaching and Learning
- iv) Challenges faced in the use of Remote Teaching and Learning
- v) Recommendations on the use of Remote Teaching and Learning

### Methodology

The study utilized a descriptive research design. The sample consisted of lecturers and students totaling 277, who

responded to an online questionnaire. The data was analyzed using descriptive statistics with the aid of percentage and mean percentage and presented in tables and figures. The findings of the study in relation to the objectives are as follows.

### Results and Discussions

The results are discussed based on the objectives beginning with demographic information.

#### Demographic Analysis

The distribution of respondents by age, gender, number of years at the university and their status at the university were analyzed and presented as shown in Figure 1 above and Figure 2 below.

As can be deduced in figure 1 above, a majority of participants were students (44% males; 46% females). Lecturers, both permanent staff and part-time staff, consisted of 5% males and 2% females. This demonstrates that students were readily available and willing to participate in the study more than were lecturers.

In figure 2 below, the majority of students have been in the university for less than four (4) years (90%). This is owing to the fact that most of their academic programs last for a period of four (4) years. On the other hand, the academic staff who participated in the study have been in the university for not less than five (5) years. On average, the duration of stay in the university provides an adequate basis for respondents to give reliable information concerning the main goal of the study as it relates to their experience with various variables on the ground.

#### Categories of Remote Teaching and Learning Used

The study sought to investigate the categories of remote/online teaching and learning modes used including

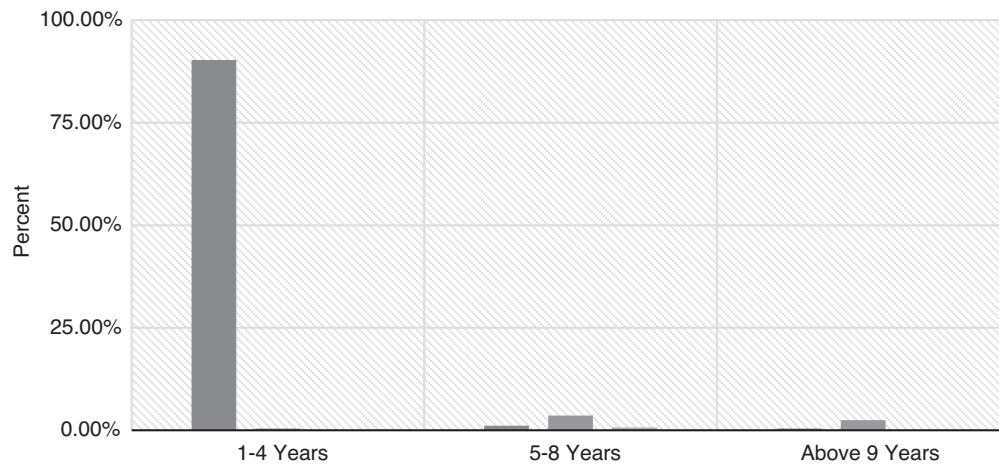


Figure 2. Distribution of respondents by status at the university and number of years at the university

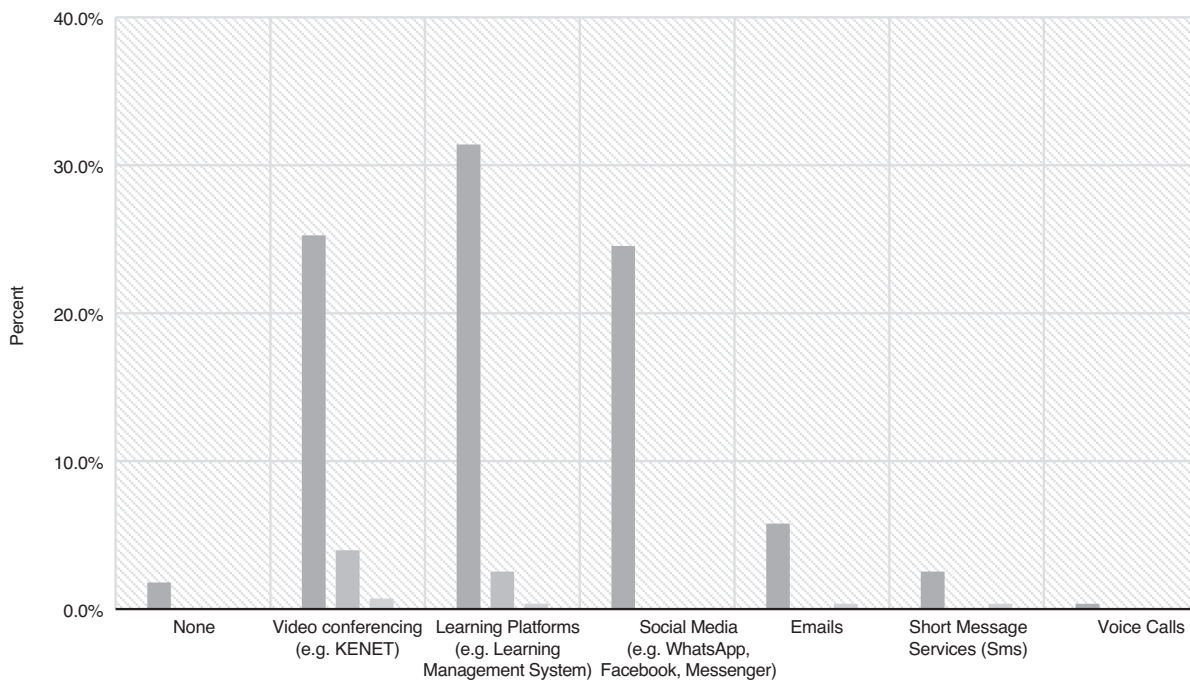


Figure 3. Categories of online platforms

learning management platforms, video conferencing and social media, among others. As shown in figure 3 above, a majority of respondents used video conferencing (30%), learning management systems (34.3%) and social media (24.5%). Indeed, these were the platforms emphasized by the university for remote learning at the onset of the COVID-19 lockdown. This was among the quick strategies used by the university in order to enhance continuation of learning during the lockdown.

Nevertheless, without proper planning and administration, we are bound to incur challenges in effectiveness of online teaching and learning, hence the need for continuous review of planning by the university. Certainly,

a number of researchers during the COVID-19 pandemic have suggested ways of enhancing accessibility and inclusivity of online teaching and learning. For instance, Leif, Grové, Alfrey, Laletas, & Sharma (2020), suggest the following guidelines, (i) consider how students will navigate through your online classroom; (ii) provide a video tour of your online classroom at the start of the semester; (iii) ensure all Word documents, PowerPoint presentations, and PDF files are accessible and searchable; (iv) add alternative text (alt text) to images and graphics so that they can be read aloud when students use a screen reader; and (v) add captions and transcriptions to video lessons.

Table 1. Levels of likeability towards online teaching and learning

Level of Likeability	Agreeability			Disagreement	
	Agree	Strongly Agree	Not sure	Disagree	Strongly Disagree
Liked online teaching-learning technologies	26.4	7.9	13.7	23.8	28.2
Online teaching-learning is more relaxed and friendly	22.7	6.5	7.9	32.9	30
I prefer online teaching-learning rather than face to face method	12.6	2.9	7.9	37.5	39
Online teaching-learning is more flexible	15.5	3.6	8.7	38.3	33.9
Online teaching-learning is easy to handle	22	4.3	7.2	28.9	37.5
I feel motivated in online teaching-learning process	24.9	5.1	9.7	27.4	32.9
Online teaching-learning is attractive	30	4.3	10.1	26	29.6
Complexity of online teaching-learning reduces my morale	34.7	18.4	11.2	22.7	13
Online teaching-learning fosters learning relationships	22.7	2.9	16.6	27.4	30.3
I like technological experiences in online teaching-learning	34.3	6.9	10.8	22.7	25.3
Online teaching-learning outcomes can best be achieved	22	4	12.6	36.1	25.3
Online teaching-learning is NOT enjoyable	35.7	24.5	10.5	22.4	6.9
<b>Total Percent</b>	<b>303.6</b>	<b>91.3</b>	<b>127.1</b>	<b>346.2</b>	<b>331.8</b>
<b>Mean Percent</b>	<b>25.30084</b>	<b>7.611312</b>	<b>10.58965</b>	<b>28.85078</b>	<b>27.64741</b>

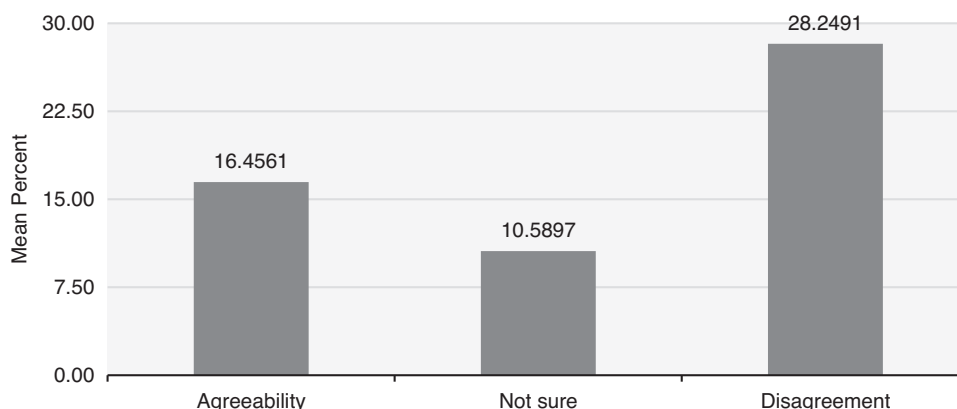


Figure 4. Levels of agreement and disagreement towards online teaching and learning

### Attitudes towards the Use of Remote Teaching and Learning

Respondents were asked about their attitudes towards online teaching and learning, and table 1 above shows the level of likeability in terms of agreement or disagreement to attitudinal statements, including the total and mean percentages.

In order to depict clarity in the divergent views on respondents' attitudes, the values on the table were further reduced into three (3) categories of agreeability, not sure and disagreement by mean percentage on either extreme. These new summaries were then presented in figure 4 above.

On Figure 4 above, the findings show that the degree of disagreement on attitudinal statements is high among the

respondents, with a mean percentage of 28.25, compared to the level of agreeability which had a mean percentage of 16.46. This denotes negative attitudes among respondents towards the use of online teaching-learning strategies during the COVID-19 pandemic lockdowns. These findings are however contrary to findings from similar studies on attitudes towards online teaching-learning during COVID-19 lockdown from other countries. For instance, Shahzad, Hussain, Sarwat, Ghani, & Saleem (2020) conducted a study to determine the impact of virtual teaching on students' behavior. Their results showed that students had a positive attitude towards the new way of teaching. Additionally, the Muflih et al. study (2020) highlighted one of the research results on students' attitudes towards online teaching during the pandemic, which indicated a positive

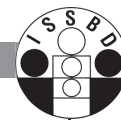


Table 2. Measures of effectiveness of online teaching and learning

Measures of Effectiveness	Agreeability			Disagreement	
	Agree	Strongly Agree	Not sure	Disagree	Strongly Disagree
Study materials for online teaching-learning are of good quality.	18.1	3.2	13.0	35.4	30.3
Online tutorials are more effective	17.3	4.0	10.1	40.8	27.8
Online teaching-learning needs are better met	14.4	2.2	15.2	35.0	33.2
Online teaching-learning interactions are more effective	14.8	1.8	9.7	39.0	34.7
Online tests/assignments are more effective	18.1	5.8	12.6	24.5	39.0
Online teaching-learning outcomes are effectively achieved	18.1	2.2	14.4	32.5	32.9
Effective cooperation is achieved in online teaching-learning	15.5	4.7	11.9	32.5	35.4
Online teaching-learning processes are guaranteed	14.1	2.5	14.1	32.5	36.8
Learners are independent and responsible in online teaching-learning	35.7	10.1	11.6	20.6	22.0
Lecturer-student understanding is enhanced in online teaching-learning	21.3	1.1	15.5	30.3	31.8
Online teaching-learning demotivates students	32.5	26.7	12.6	16.6	11.6
<b>Total Percent</b>	<b>219.9</b>	<b>64.3</b>	<b>140.8</b>	<b>339.7</b>	<b>335.4</b>
<b>Mean Percent</b>	<b>19.98687</b>	<b>5.841812</b>	<b>12.79947</b>	<b>30.88284</b>	<b>30.48901</b>

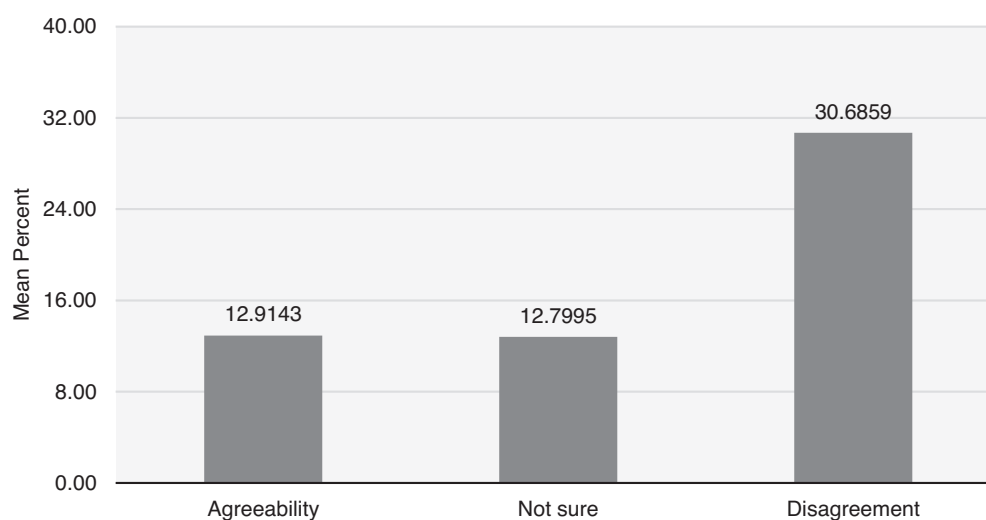


Figure 5. Levels of agreement and disagreement towards effectiveness of online teaching and learning

attitude among students towards online courses as an aid for working on assignments. Ali (2020) asserts in his study of online teaching during the pandemic that the most significant aspects of this sort of teaching relate to resources, teacher readiness, and confidence, as well as students' motivation and the possibility of attending e-classes. Possible reasons for the negative responses in this current study could be the abruptness of COVID-19 lockdowns without prior preparations for online classes by both the faculty and students, historic overreliance on the traditional face-to-face approaches with less emphasis on blended learning pedagogies, and lack of the technical know-how on e-classes among the faculty and the students.

### Effectiveness of Remote Teaching and Learning

The current study sought to evaluate the practicality and efficacy of e-classes to the respondents during the COVID-19 lockdown period(s). Table 2 above gives a summary of the total and mean percentages on agreeability and disagreement across the measures of effectiveness of e-classes that the study investigated.

For the purposes of precisely demarcating the responses on measures of effectiveness, the within-cluster percentages in effectiveness agreements versus disagreements were averaged to give a three (3) point scale marked

Table 3. Indicators of challenges of online teaching and learning

Indicators of Challenges	Agreeability			Disagreement	
	Agree	Strongly Agree	Not sure	Disagree	Strongly Disagree
Online teaching-learning workload is NOT too much	32.1	7.9	9.4	26.4	24.2
There is enough time for online teaching-learning	24.2	4.3	7.6	29.2	34.7
Internet connectivity was OK for online teaching-learning	4.7	1.4	4.3	24.5	65.0
Online teaching-learning facilities were readily available for use	10.1	2.9	3.6	23.5	59.9
Internet bundles were available for online teaching-learning	2.9	0.0	4.3	19.1	73.6
Internet bundles were adequate for online teaching-learning	1.8	1.1	5.1	23.1	69.0
Online teaching-learning platforms were user friendly	20.6	3.6	12.3	23.1	40.4
Time for task completion were adequate for online teaching-learning	17.3	3.6	10.5	28.9	39.7
Online teaching-learning is manageable	24.9	2.5	12.6	24.9	35.0
Online teaching-learning resources were readily available	10.1	2.2	8.3	30.3	49.1
There was a wide range of online teaching-learning resources	14.4	2.9	7.2	33.6	41.9
Online teaching-learning overcomes anxieties experienced by other methods	15.9	3.6	20.9	28.9	30.7
<b>Total Percent</b>	<b>179.1</b>	<b>36.1</b>	<b>106.1</b>	<b>315.5</b>	<b>563.2</b>
<b>Mean Percent</b>	<b>14.92</b>	<b>3.01</b>	<b>8.84</b>	<b>26.29</b>	<b>46.93</b>

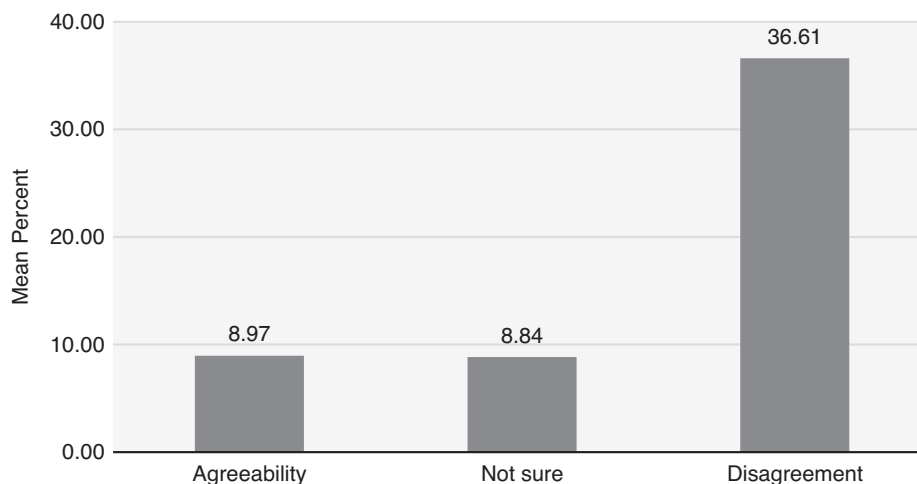


Figure 6. Levels of agreement and disagreement towards indicators of e-classes challenges

by agreeability, not sure and disagreement. These results are presented in figure 5 above.

The findings in figure 5 above, indicate that a majority of respondents disagreed with the measures of effectiveness of e-classes that the study sought to investigate, that is, 30.69 mean percent disagreement against 12.91 mean percent agreement in the total sample. This implied that to many of the respondents, e-classes were not effective in the teaching-learning process during the COVID-19 lockdown period. In other words, they were not satisfied with the indicators of effective e-classes that included subject matter/content, e-learning platforms used (despite the fact that a majority of respondents used video conferencing-30%, learning management system-34.3%, and social media-24.5%, ref. to figure 3, above), and student-teacher interactions, just to mention a few. In this setting, it is clear that a number of students may be unwilling to participate actively in online classes (as depicted in Figure 4 above).

Nevertheless, a number of researchers have suggested guidelines on how to create an engaging online learning environment for effective e-classes. For example, Fung, Magdeline and Kamei (2020), recommended that teachers strengthen student-teacher interaction by asking students to turn on their videos so as to increase their attention to the lectures or class activities, and also by regularly seeking their real-time responses during online classes.

Martin (2020) on his part offers key considerations for educators to optimize online learning in the time of COVID-19 lockdown, which includes instructions (explicit, orderly, and well-organized); content (high-quality and appropriate to students' level); motivation (self-regulation, parents' involvement, and tasks that separate students from the online environment); relationships (interpersonal relationships through various communication channels and sufficient face-to-face online instructions); and mental



Table 4. Recommendation variables for online teaching and learning

Recommendation Variables	Agreeability			Disagreement	
	Agree	Strongly Agree	Not sure	Disagree	Strongly Disagree
I recommend the use of online Teaching-Learning	11.6	4.0	9.7	31.4	43.3
Online Teaching-Learning is useful only during crisis period	33.2	9.7	13.7	23.5	19.9
Online Teaching-Learning should be mandatory in university	13.4	4.7	9.7	26.4	45.8
All lecturers & students should embrace online Teaching-Learning	27.8	8.7	11.6	17.7	34.3
Online Teaching-Learning is the option in 21st Century	28.5	13.0	13.0	19.1	26.4
Online Teaching-Learning is not necessary for Lecturers & students	30.7	32.5	6.9	18.8	11.2
Both lecturers & students should be trained on online Teaching-Learning	41.5	35.7	5.1	7.6	10.1
Both lecturers & students should prepare for online Teaching-Learning	43.3	28.9	4.7	9.0	14.1
<b>Total Percent</b>	<b>230.0</b>	<b>137.2</b>	<b>74.4</b>	<b>153.4</b>	<b>205.1</b>
<b>Mean Percent</b>	<b>28.75</b>	<b>17.15</b>	<b>9.30</b>	<b>19.18</b>	<b>25.63</b>

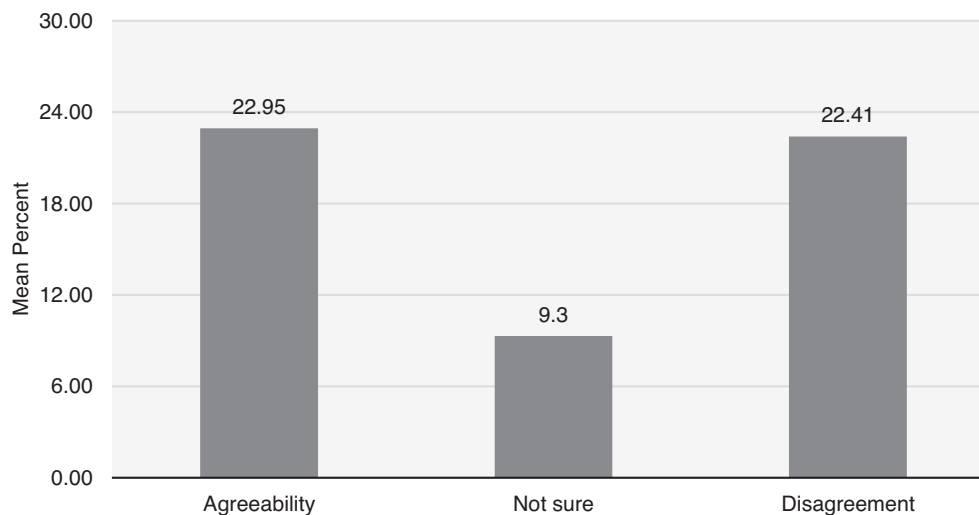


Figure 7. Levels of agreement and disagreement towards e-classes recommendation variables

health (reaching out to students who may need help and informing them about who to contact when they need mental health support). Besides these guidelines, Naffi, et al. (2020) suggest ways in which universities can improve equity, access and hence effective online learning. These include (1) creating accessible materials; (2) choosing adequate digital technologies; (3) recording lectures and captioning videos and audio contents; (4) adopting inclusive culturally responsive teaching; (5) adopting a flexible approach to student participation; (6) ensuring financial support and equipment; and (7) understanding student needs. Principally, the materials used in e-learning should capture student attention and connect to students; this in turn will enable teachers to boost students' confidence and satisfaction with positive reinforcements or rewards (Kew Si Na, 2020).

By considering such salient guidelines, we may see a remarkable improvement in the effectiveness of e-classes, given that it is increasingly becoming a new norm thereby evading disruptions of academic classes and calendars in

learning institutions, not just during COVID-19 lockdown times, but also for posterity, where and when applicable.

### Challenges Faced in the Use of Remote Teaching and Learning

The respondents were asked the degree of agreement and disagreement across the indicators of their challenges and experiences with e-classes. The level of agreement depicted opportunities for e-class experiences, whereas the level of disagreement indicated challenges experienced with e-classes. The indicators of opportunities and challenges ranged from e-class workload, time factor, internet issues, sources of power/electricity, online facilities, to learning platforms, among others. Table 3 gives a summary of responses to the indicators of e-class challenges encountered by the respondents.

The total and mean percentages in table 3 above were clustered and summarized as shown in figure 6 above.

From figure 6 above, 36.61 mean percent represented the majority of respondents disagreeing with the indicators hence perceiving them as challenges, while only 8.97 mean percent of the respondents perceived the indicators as opportunities for e-class experiences.

Indeed, remote learning poses a lot of challenges particularly during the COVID-19 pandemic forced shutdown of many physical activities worldwide, including educational activities. This situation leaves educational institutions with no choice but to migrate to online learning. As a matter of fact, online learning is not a novel phenomenon; however, the abrupt migration into online learning has posed substantial challenges for educational activities globally, and particularly in resource-scarce environments like Kenya, where educational institutions, teachers, and students are generally not ready for this unexpected disruption to traditional teaching and learning methods due to a lack of well-defined infrastructure. This poses a challenge to most of the teachers and education stakeholders in terms of limited knowledge for online teaching, costs of teaching and preparation of online teaching, and online assessment and evaluation, thus slackening implementation of online learning. Additionally, most learners in Kenya lack the gadgets to use for online learning, a major impediment to online learning (Jelimo, 2020). A number of studies have pointed out challenges caused by abrupt digital immigration during the COVID-19 pandemic.

Adedoyin and Soykan (2020) point out key challenges related to technological infrastructure and digital competence, socio-economic factors (educational inequality), assessment and supervision, heavy workload, and compatibility (some subjects such as sports, engineering, and medical studies require hands-on experience as part of instructional activities). They further cite typical technological issues including lack of knowledge of how to use applications, unstable/slow internet connection, outdated communication devices, and incompatible browsers. In Jalli's (2020) study, it was discovered that lack of internet access and connectivity poses great challenges to online learning for students in most developing economies of the world, particularly in rural areas (Flynn & Himel, 2020). According to Chea, Kieng, Leng, and Water (2020) students from low socio-economic families are not able to afford broadband connection and pertinent devices such as computers/laptops or tablets to support their online learning. The few who can afford it resort to the use of smartphones to access lessons and learning materials, complete assignments, and take exams, yet smartphones cannot handle all of the learning management systems applications.

Migration to online teaching also comes with a lot of demand on the faculty, support staff and the institutions. Studies have shown that there are critical challenges relating to training on the use of the new platforms and systems, pressures of extra workloads to the faculty in terms of transforming course/subject contents, learning resources, and assessments to online platforms, leading to onerous stress and anxieties (MacIntyre, Gregersen, & Mercer, 2020; Winthrop, 2020). Other challenges which have been identified in research studies on online learning during the COVID-19 pandemic include e-class related stress, frustration, and isolation for students who miss peer interactions (Daniel, 2020; Gillett-Swan, 2017). Also reported were an increase in cybersecurity, cyberbullying, online violence and

exploitation, and other psychological issues caused by difficulties and uncertainties associated with COVID-19 pandemic online learning (Daniel, 2020; Yan, 2020). It is worth noting that challenges of online learning are many and may not be exhausted in a onetime study as technological transformation comes with new demands.

### **Recommendations on the Use of Remote Teaching and Learning**

Assessment of the recommendations for online teaching and learning highlighted the following variables: the need for online teaching and learning, its usefulness, making it mandatory, and training needs and preparations. The results are summarized in table 4 above.

The summaries of total and mean percentages in table 4 above are presented in figure 7 above.

The results in figure 7 above gave almost 50:50 agreement and disagreement on the e-classes recommendation variables, 22.95 and 22.41 mean percentages, respectively. This indicates that despite attitudinal dimensions, ranges of effectiveness and challenges of e-classes discussed beforehand, slightly half of respondents recommended online teaching and learning. Perhaps with no other options for the continuation of teaching and learning, particularly during learning disruptions (for example, as caused by COVID-19), respondents were of the view that improvements and implementation of e-classes by institutions could create fewer or no disruptions of teaching and learning in such circumstances. In order to improve and successfully implement online teaching and learning, researchers have given several recommendations, for instance, Leif et al. (2020) offer five guidelines for making online learning more accessible and inclusive as follows: (1) consider how students will navigate through the online classroom; (2) provide a video tour of the online classroom at the start of the semester; (3) ensure all Word documents, PowerPoint presentations, and PDF files are accessible and searchable; (4) add alternative text (alt text) to images and graphics so that they can be read aloud when students use a screen reader; and (5) add captions and transcriptions to video lessons. Nevertheless, it may take a lot of resources in terms of time and expenditure to achieve all these goals, particularly in developing economies like Kenya.

Additionally, Leng, Khieng, and Water (2020) offer further recommendations for ensuring the successful transition to online learning and teaching. They include: commitment and support from the institutional leadership of the digital transformation of education; development of digital infrastructure and literacy; capacity building training opportunities for faculty to enable them to develop knowledge, skills, and innovative pedagogy that can increase student engagement and attention to online classes; e-community support for students and staff (both teaching and non-teaching staff) to communicate socially and academically; instilling positive attitudes toward new developments regarding online learning and teaching in both the faculty and students; and finally, governmental support to educational institutions in developing and improving ICT infrastructure, capacity building and collaboration. In the long run, therefore, there is hope for the future undertaking of e-education as a means to solve





occasional learning interruptions that may not only be caused by disease outbreaks like COVID-19, but even by students' unrest, among other interruptions.

## Conclusion

In conclusion, the findings of this study indicate that there is a need to improve e-learning platforms in Kenya, making them more user friendly and effective. There is also a need to foster positive attitudes towards e-learning in both faculty and student communities, including parents and caregivers. Finally, there is also a need to enhance effectiveness of e-learning through capacity building, resource mobilization and leadership efficiency. In so doing, e-learning will aid in solving problems of academic calendar disruptions in institutions of higher learning, as is being witnessed in these COVID-19 times.

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