

Emerging Issues in Curriculum and Instruction during Post COVID-19 Era: Experience from South Eastern Kenya University, Kenya

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ABSTRACT

This paper examined the emerging issues in curriculum and instruction during post-COVID-19 in Higher Education in Kenya. The paper ascertained the influence of post COVID 19 era teacher training in online pedagogy on curriculum and instruction in higher education in Kenya, established the influence of post COVID 19 era paradigm shift from emergency based online content delivery to full time online pedagogy on curriculum and instruction in higher education in Kenya, determined the influence of post COVID 19 era availability of online educational resources on curriculum and instruction in higher education in Kenya and, finally, investigated the influence of post COVID 19 era education policy changes on curriculum and instruction in higher education in Kenya. The study employed the Classical Liberal Theory of Equal Opportunities which was advanced by Sherman and Wood and cited by Njeru and Orodho in 2003. A descriptive survey research design was used in the study. 1 dean, 10 academic staff and 225 students, all from the school of education, South Eastern Kenya University were chosen as the sample size using census sampling, simple random sampling, and purposive sampling procedures respectively. 236 respondents' responses were gathered using a questionnaire, interview schedule and checklist for the study. The instruments were piloted to test their validity and reliability. Both a quantitative and qualitative analysis of the data were performed. It was hoped that, this study would be important because it would advance our understanding and help to shape future transformative pedagogical approach policies for curriculum and instruction in higher education. The majority of lecturers in higher education, according to the research, are untrained in online content delivery. The primary impediments to a shift to distance online learning during and post COVID-19, according to the findings, are technical resources and unequal access to education. As an alternative method of learning, online learning or e-learning mode, has been widely accepted and is proven to be an opportunity and a challenge as there is still unknown that is not giving the desired output in the teaching and learning process. The study also found that there were no defined educational policies in place to deal with crises like COVID 19, which might have an impact on how higher education institutions engage in the teaching and learning process. The study suggested that higher education institutions should invest in technology-use training so that teachers can better prepare students to use technology, especially in the context of new assessments, higher education institutions should secure more resources from a variety of sources, and universities should study policies to mitigate the effects of a diverse student body.

Keywords: COVID19, Emerging issue, Curriculum, Instruction, Higher education,

INTRODUCTION

Global education systems underwent various modifications as a result of new challenges that emerged during the COVID 19 era. Numerous educational programs were developed to teach students in response to the COVID 19 pandemic. Such programs were either based on developmental theory (Flawell, 1965; Piaget, 1952, 1960) or ecological theory (Bronfenbrenner, 1979; Swap, Prieto & Harth, 1982). Curriculum change emerged as the principal focus of the educational system's reform, and its instruction gained a lot of attention. The vast majority of educational institutions globally opted to temporarily discontinue providing in-person instruction in favor of a remote learning delivery technique to prevent the spread of COVID-19. This innovative strategy created a novel online learning environment that aided students who were taking part in remote education (Kumar Basak et al., 2018).

Online learning has many benefits such as adaptable methods of learning, greater student autonomy and better retention (Radovic-Markovic, 2010; de Oliveira et al., 2018; Srivastava, 2019; Wong, 2020). However, some drawbacks should not be overlooked, particularly in two areas: student autonomy and teacher quality. As an example, students who engage in autonomous learning at home might experience difficulties with low motivation, insufficient planning, monitoring, and reflection (Arkorful & Abaidoo, 2015; Durksen et al., 2016; Wong, 2020; Zhou et al., 2020). However, according to several studies (de Oliveira et al., 2018, Alshamrani, 2019, Srivastava, 2019, and Bao, 2020), teachers may not have had enough opportunities for interactive communication with their students. This is especially true when it comes to mastering crucial skills through online education. The new policy required the teaching materials used in the online classrooms during this period to reflect learning in a broad sense in addition to the structured learning of the national curricula (Hu, 2017). For instance, it's crucial to promote knowledge about pandemic prevention and control, and schools should teach students about life skills, public safety, and mental health (People's Republic of China Ministry of Education, 2020).

According to UNESCO (2020), the closure of approximately 186 educational institutions by the end of April 2020 affected more than 74% of all enrolled students. Lancker and Parolin (2020) observed that almost 130 nations closed all of their educational institutions, while many more enacted regional or partial closures. Schools were closed for more than 80% of the students, which spurred debate over how lockdowns affected the educational system. Several countries closed their schools as of the beginning of March 2020, although several, especially China and South Korea, stopped holding in-person classes since January 2020. In contrast, in countries including Denmark, Germany, France, Greece, and Poland, parts of the formal education system gradually reopened in April or May 2020 depending on medical advice for de-confinement to allow evaluation and certification. Other countries, such as Malta, Portugal, and Ireland, declared that they would not reopen their formal education systems for the 2020–21 academic year.

Higher education institutions were forced to make considerable adjustments as a result of COVID-19, switching from traditional face-to-face learning to digital technologies like remote learning. The WHO (2021) recommended physical separation as a feasible safety measure because outbreaks frequently happened in social settings including restaurants, offices, and educational facilities as COVID 19 expanded around the globe. Because online education cannot completely replace all educational activities with the same efficacy, researchers were concerned about the long-term effects of lockdown on academic happenings, learning, experience, and learners' general development. Academicians are currently struggling to teach, learn, and use technological skills for teaching due to the introduction of e-learning. COVID-19 created issues for both enrolled students and traditional schools, constituting a serious dilemma for higher education (Pulsipher, 2020). Due to the disturbance to established methods of instruction, universities that

saw conventional teaching as a backup following COVID-19 may not have even survived (El-Azar & Nelson, 2020).

Technological advancement made education easy and approachable. Online learning, open learning, web-based learning, computer mediated learning, blended learning and m-learning offered an opportunity to learn from anywhere, anytime and with any means. Presently, the real time classrooms and interaction have been replaced by virtual classrooms, with the help of chatrooms occurring through online channels. The virtual classrooms are being planned using the platform such as video conferencing such as Google meet, Google handout, Microsoft teams among others.

Global pandemic provided an opportunity to teachers and students to learn, unlearn and relearn the teaching models and develop new skill or enhance the existing set of skills. Teachers have started creating the study material, training material and skill development programme in collaboration with variety of content like word, PDF, Excel File and Audio Video.

The field of online teaching and learning gave everyone a chance to experience new learning, develop new perspectives and accept new trend of education while heading into great unknown field of imparting knowledge with technology. Teachers and students faced challenges as practice and assessment of online education. the technical issues, complexity, sequencing activities were among the obstacles to incorporation of multimedia application in learning. The major challenges included: missing technical support, lack of technical skills, stressful living conditions, long hours of work, challenge for weak learners, data security, lack of interaction and missing result-oriented education.

The pandemic made the academicians and individuals realize the need to reframe the curriculum to ensure the presence of skills such as problem solving, critical thinking, and adaptability to service in globalized world. Teachers were hesitant in accepting change as they found themselves comfortable and confident in face-to-face teaching, but at the midst of this crisis, they were left with no alternative but to adopt the online mode of teaching, accepting the challenges which had to be compromised and overlooked in comparison of the benefits during COVID and post COVID era.

The first COVID19 occurrences in Africa were observed starting in February 2020 (UNESCO, 2020). As of April 28th, 2020, 33,389 instances were identified as coming from Africa. 4,793 infected individuals and 1,473 recoveries were recorded in South Africa. Egypt reported 4,782 infections, 337 fatalities, and 1,236 recoveries. Ghana reported 1,550 infections, 155 recoveries, and 11 fatalities. 1 337 infections, 255 recoveries, and 40 fatalities were recorded in Nigeria. 299 sicknesses and 10 fatalities were recorded by Tanzanian educational, research, and other organizations. 1.8 billion Students were harmed by school closures as a result of the pandemic by April 26, 2020.

Around 9.8% of the world's students were impacted by 189 national cessations and 5 local closures (UNESCO, 2020). On March 23, 2020, all states announced a temporary postponement of the May/June 2020 series of the Cambridge O Level, Cambridge International AS and A Level, Cambridge IGCSE, Cambridge AICE Diploma, and Cambridge Pre-University exams. Additionally delayed were the International Baccalaureate exams (UNESCO, 2020). Closing institutions had significant social and economic impacts on households, teachers, and students. A few of the economic and social challenges that resulted from the shutdown of institutions due to the coronavirus include student debt, digital learning, and

48 recoveries. According to the Nation Media Newsplex Team (April 29, 2020), Rwanda had 207 infections, 0 fatalities, and 93 recoveries, whereas Uganda had 79 infected cases, 0 fatalities, and 47 recoveries.

On March 13, 2020, Kenya announced the first COVID-19 case (MoH, 2020). The number of cases has steadily increased and spread throughout the nation. Kenya reported 374 confirmed COVID-19 cases as of April 28, 2020, 124 recoveries, and 14 fatalities. The majority of these incidences occurred in the counties of Nairobi, Mombasa, Kilifi, Kwale, and Mandela, with additional incidents occurring in all other counties. The government of the Republic of Kenya swiftly shuttered all schools and higher education institutions between March 16 and March 20, 2020, to stop the spread of the disease in educational institutions. To mitigate the effects of infectious diseases like the COVID-19 outbreak, the Ministry of Health also set a policy priority (Nation Media Newsplex Team, April 29, 2020).

In accordance with national and international recommendations for social isolation, quarantine, and self-isolation, the Kenyan government developed a three-pronged education approach to encourage online continuing education. The Ministry of Education developed an online curriculum that some students accessed through several channels to guarantee that learners in the country continued to learn while they were at home (MoH, 2020). However, this led to several issues. The most disadvantaged and marginalized children, who already struggled to access school or were more likely to be excluded for a variety of reasons, were negatively impacted by the lockdown and prolonged institutional closures. These included, among others, students with disabilities, people who live in urban slums, unincorporated villages, remote locations, asylum seekers, refugees, and people whose families had lost their means of support as a result of job losses, business closures, and casual work. The Kenyan constitution guarantees everyone, regardless of their situation, the right to pursue the highest level of education, training, and research (GoK, 2010). Although the COVID 19 concept has been more well-known among academics, educators, and policymakers, there isn't much research on it, especially in the context of higher education institutions. The researcher set out to investigate post-COVID-19 emerging issues in curriculum and instruction in higher education to add to the corpus of knowledge.

METHODOLOGY

A descriptive survey research design was used for this investigation. The study was conducted at South Eastern Kenya University in Kenya. Using census sampling, simple random sampling, and purposive sampling approaches, 225 students from the school of education at South Eastern Kenya University, one dean, and ten academic staff members were chosen as the sample size. 236 participants formed a sample frame for the study. The questionnaire, interview schedule, and checklist were used to gather data. Through piloting, the instrument's reliability and validity were assessed. Both a quantitative and a qualitative analysis of the results was performed. Version 12.0 of the Statistical Package for Social Sciences (SPSS) was used to code and analyze the field data. The data was then presented in tables, pie charts, and graphs.

KEY FINDINGS OF THE STUDY

The influence of post COVID 19 era teacher training in online pedagogy on curriculum and instruction in higher education

The first objective of this study was to ascertain the influence of post COVID 19 era teacher training in online pedagogy on curriculum and instruction in higher education in Kenya. To execute the curriculum online in higher education, it was intended that the data in this area would reveal whether the respondents had any training in online pedagogy. The question that was posed was, what impact does post-COVID 19 teacher training have on online learning in Kenyan higher education? Table 1 displays the lecturers' responses.

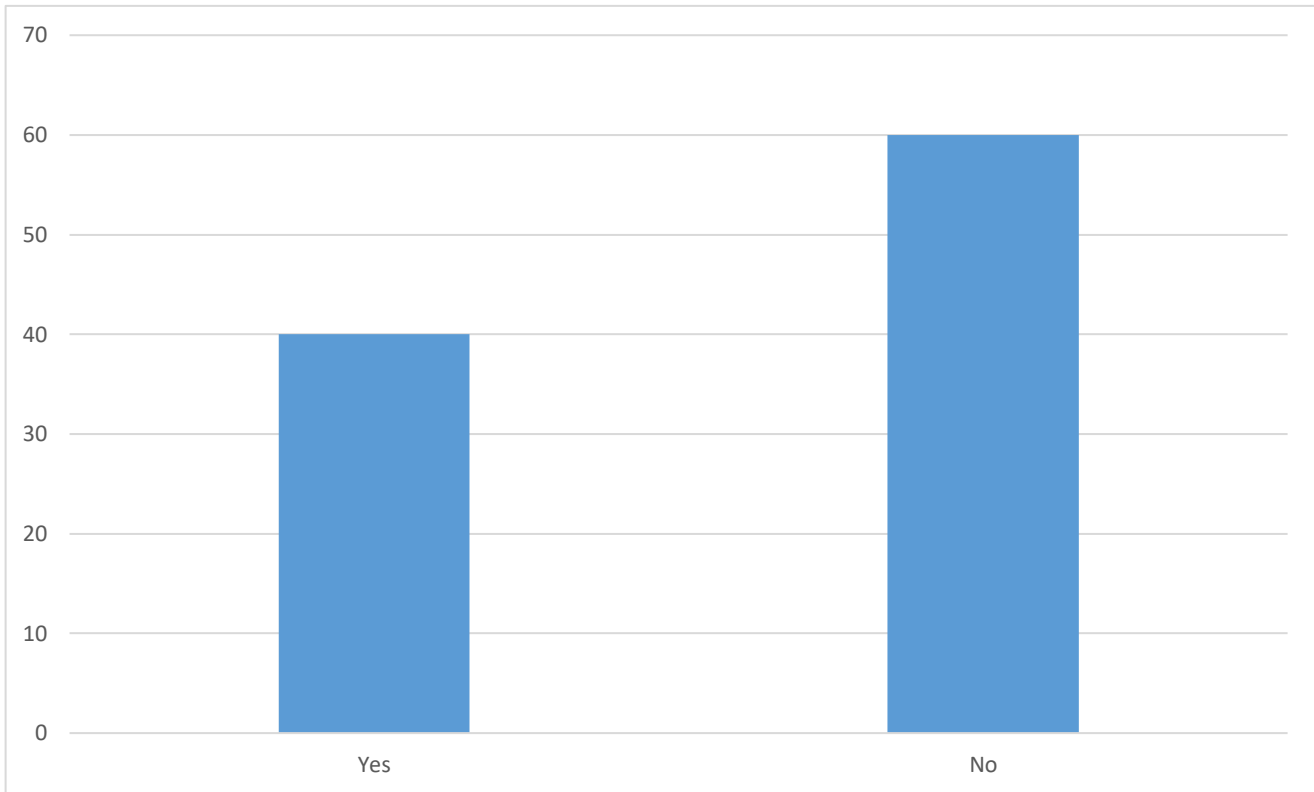


Figure 1 Lecturers' responses on whether they were trained in online curriculum delivery

Figure 1's findings demonstrate that 4 (40%) of the sampled lecturers had received training in the delivery of online curricula, whereas 6 (60%) lecturers had not. Additionally, students were asked if their particular lecturers had any training in the delivery of online courses. Their conclusions are shown in figure 2.

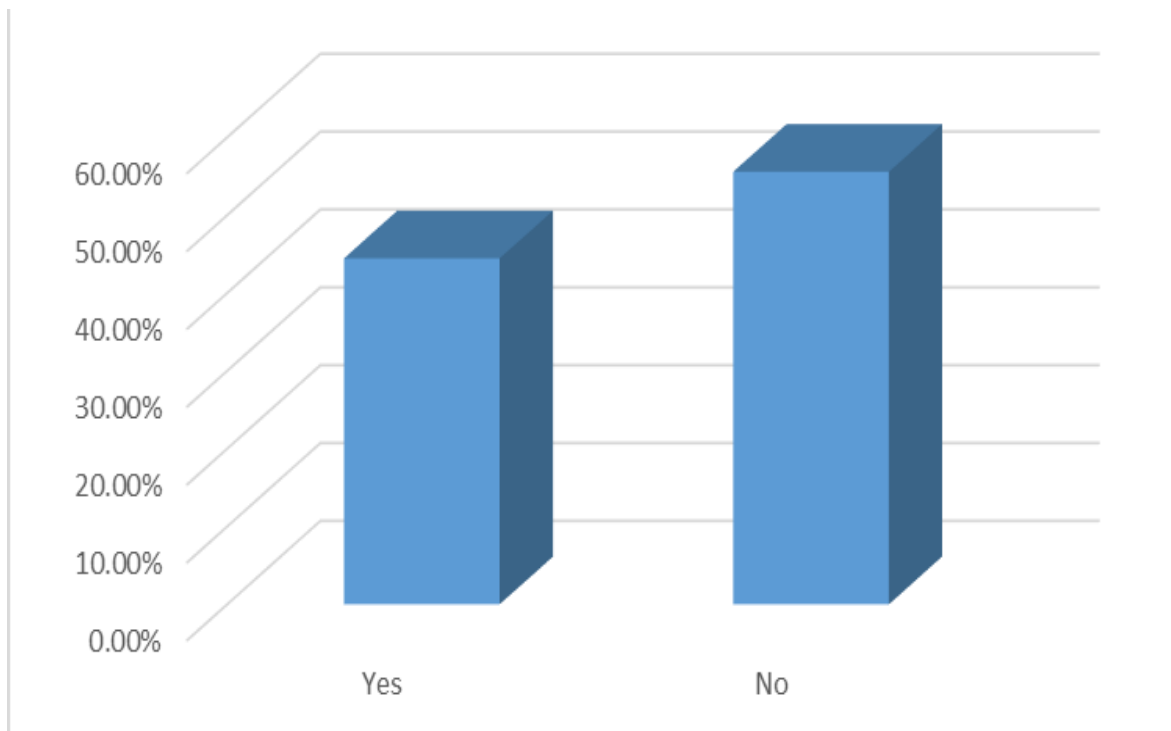


Figure 2 Students' responses on whether their respective lecturers were trained in online curriculum delivery

Figure 2’s findings show that 100 (44.44%) of the sampled students said that their lecturers had received training in the delivery of online curriculum, while 125 (55.60%) claimed that they had not. Additionally, lecturers were asked to discuss how their online training influenced the way they delivered the online curriculum. The results are displayed in figure 3 below.

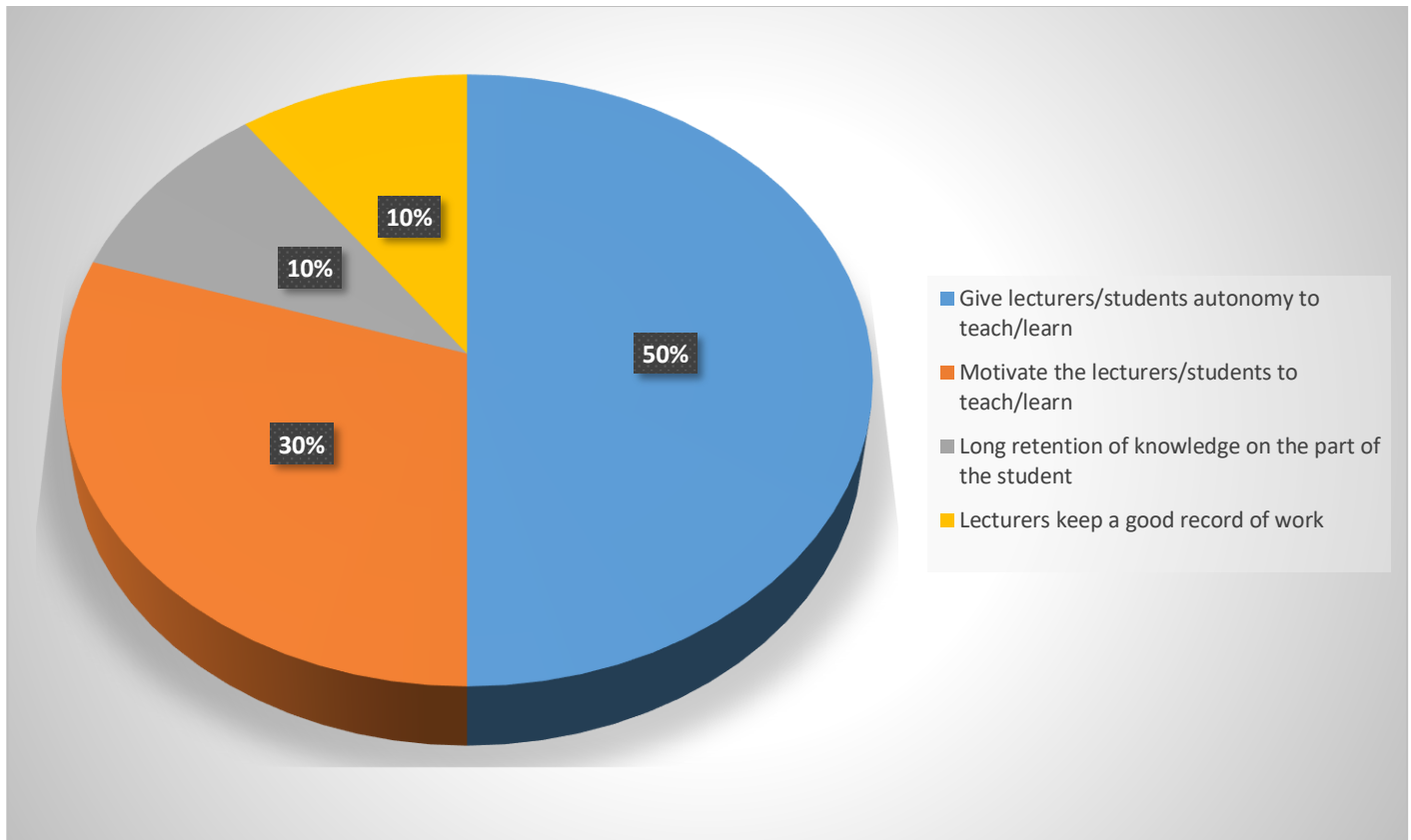


Figure 3 Lecturers responses on how their training in online influenced their online curriculum delivery

Evident in figure 3’s data shows that 5 (50%) of the lecturers said that their online education provided them and their students the freedom to teach and study, while 3 lecturers representing 30%, said that their online education motivated them and the students. Each lecturer had a 10% opinion that their training in online curriculum delivery helped students retain knowledge for a long time and helped lecturers keep accurate records of their work.

Post COVID 19 era paradigm shift from emergency based online content delivery to full time online pedagogy in higher education

The second objective was to determine the influence of the paradigm shift from emergency-based online content delivery to full-time online pedagogy in higher education in Kenya impacted curricula and instruction. What impact would the paradigm transition from emergency-based online content delivery to full-time online pedagogy have on Kenya’s higher education curricula and instruction in the post-COVID 19 era? The purpose of this question was to ascertain whether lecturers in Kenya had the skills to implement online means of curriculum delivery. Table 4 displays the results.

Table 1 Lectures opinion on the need for changes in curriculum delivery in higher education

Statement	Frequency	Percentage
Implement changes in the curriculum delivery	100	100

Not willing to changes in the existing curriculum Delivery	0.00	0.00
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According to the findings in table 1 above, every single respondent was in favour of making changes to how higher education curricula are delivered. None of the respondents indicated that they would be open to changing the current method of delivering education. The participants were also asked what they thought of online teaching and learning as a potential substitute for traditional classroom instruction. Figure 4 displays their responses.

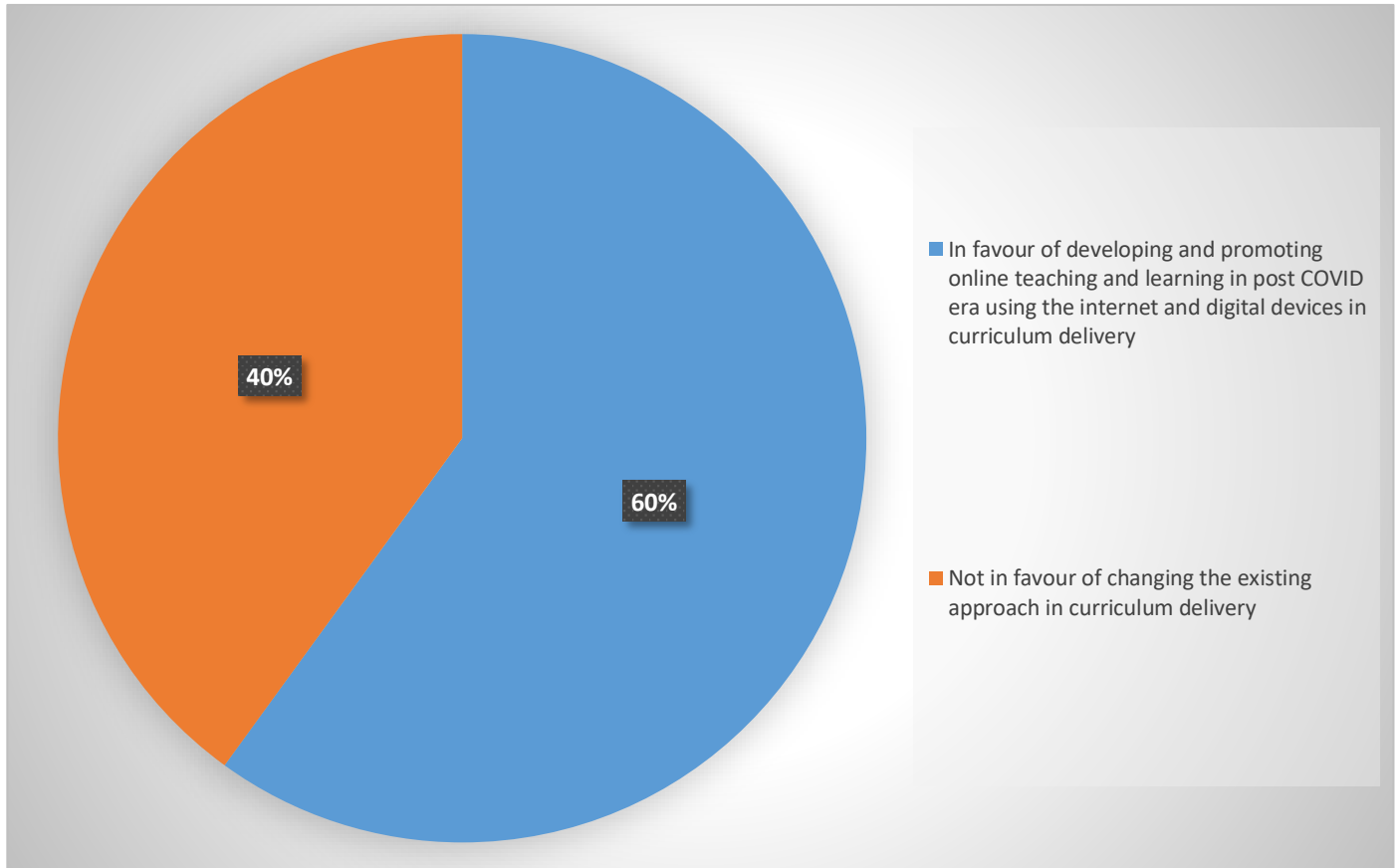


Figure 4 Lecturers’ opinions on online teaching and learning as an alternative method of curriculum delivery

60% of respondents, it was discovered after analysing the data gathered from respondents, were in favour of creating and promoting an online education system. 40% of respondents, however, disagreed and were opposed to modifying the current system of education. Additionally, the students were asked what they thought should be done to promote online teaching and learning. The table below displays their responses.

Table 2 Students’ opinions of promoting online teaching and learning in higher education

Statement	Frequency	Percentage
In favour of developing and promoting online online Teaching and learning in the COVID 19 era using the internet and technical devices in the curriculum delivery	147	65.33
Not in favour of changing the existing approach in curriculum delivery	78	34.67
Total	225	100

Table 2’s findings show that 147 respondents representing 65.33% agreed with the idea of promoting online

education as a method of delivering curriculum. 78 (34.67%) of the students felt that the current method of delivering the curriculum should not be changed. The participants were also asked to discuss the advantages of online teaching and learning in the post-COVID 19 environment. The table below shows their responses.

Table 3 Lecturers opinions on the benefits of online teaching and learning in higher education

Statement	Frequency	Percentage
In favour of using online resources of promoting the learning to overcome the impact of COVID-19 and any other eventualities	8	80
Not agreeing for managing the learning system through online to overcome the impact of COVID -19 and any other eventualities	2	20
Total	10	100

Table 3s results show that 80% of respondents supported using online resources to promote learning to combat the effects of COVID-19 and other eventualities, while 20% indicated that they disagreed with using the internet to manage the learning system in order to combat these effects.

Table 4 Lecturers’ opinions on the online curriculum delivery having long term impact.

Statement	Frequency	Percentage
Setting new trends for managing the study	9	90
Not setting new trends for managing the study	1	10
Total	10	100

According to Table 4, 90% of respondents thought the online system will help establish new standards for conducting the study. 10% of those surveyed disagreed with it.

Influence of post COVID 19 era availability of online educational resources on curriculum and instruction in higher education

The third objective of this study was to ascertain how the post-COVID-19 era availability of online educational resources influenced Kenyan higher education curricula and instruction. What effect does the availability of online educational resources in the post-COVID-19 era have on Kenyan curricula and instruction? The study sought to determine whether higher education institutions offered instructional resources for online teaching and learning. Table 5 displays their responses.

Table 5 Lecturers’ responses on the influence of Post COVID -19 on online learning due to online resources

Statement	Opinion				
	Strongly Agree	Agree	Disagree	Strongly Disagree	Undecided
Teaching was made impossible due to lack of accessible and reliable internet	07 (70%)	02 (20%)	01 (10%)	00 (0.0%)	00 (00%)
There is no electricity where I live making online teaching impossible for me	03 (30%)	02 (20%)	04 (40%)	01 (10%)	00 (00%)
The government has not provided enough facilities to assist online learning so I haven’t been studying online	02 (20%)	01 (10%)	06 (60%)	01 (10%)	00 (00%)

Most parents cannot afford to buy bundles for their children for online studies	04	03	02	01	00
	(40%)	(30%)	(20%)	(10%)	(00%)

Results in Table 5 shows that the majority of lecturers (70%) strongly indicated that the lack of availability and accessibility of the internet has made online learning in Kenya impossible, 20% agreed, and only 1% strongly disagreed with this variable. Neither of the professors had a strong opinion on this point or were unsure. Two out of three (30%) respondents who strongly felt that a lack of electricity prevented them from teaching online also agreed with this statement. Only 1 (10%) people disagreed with this variable, compared to 40 (40%) who strongly disagreed.

Results in table 5 show that most of the lecturers (70%) strongly indicated that unavailability and inaccessibility of the internet have made online learning impossible in Kenya, 20% agreed that unavailability and inaccessibility of the internet have made online learning impossible in Kenya while only 1% strongly disagreed with this variable. Neither of the lecturers strongly disagreed with this factor nor were undecided. 3 representing 30% strongly reported that lack of electricity made online teaching impossible for them, 2 (20%) agreed that lack of electricity made online teaching impossible for them. 40(40%) strongly disagreed with this variable while only 1 (10%) disagreed with this variable. On this variable, none of the lecturers had concerns. Regarding the matter of whether the government has provided enough resources to support online learning, 6 (60%) strongly disagreed, 2 (20%) strongly agreed, and 1 (10%) agreed and disagreed, respectively. Concerning the fact that most parents cannot afford to buy their children bundles for online courses, 4 respondents, or 40% strongly agreed with this statement, and 3 respondents, or 30%, agreed with this statement. Only 1 person, or 10% of respondents, disagreed with this variable, whereas 2 (20%) severely disagreed. Nobody among the lecturers was unsure.

Table 6 Students’ responses on the influence of COVID -19 on online learning due to online resources

Statement	Opinion				
	Strongly Agree	Agree	Disagree	Strongly Disagree	Undecided
Learning was made impossible due to lack accessible and reliable internet	105	97	22	03	00
	(35.00%)	(21.70%)	(33.30%)	(6.70%)	(1.106%)
There is no electricity where I live making online learning impossible for me	100	85	33	05	02
	(44.44%)	(37.78%)	(14.67%)	(2.22%)	(0.89%)
The government has not provided enough facilities to assist online learning so i haven’t been studying online	99	94	18	13	01
	(44.00%)	(41.79%)	(8.00%)	(5.77%)	(0.44%)
My parents cannot afford to buy bundles for me for online studies	113	84	21	07	00
	(50.22%)	(37.33%)	(9.33%)	(3.11%)	(0.00%)

Based on the results in table 6 above, 105 respondents representing 35.00% strongly agreed that internet accessibility and availability have made online learning in Kenya impossible, 97 (21.70%) of the sample strongly agreed, and only 3 (6.97%) of the sample strongly disagreed. Of the students, 22, representing 33.30 percent, strongly disagreed with this statement. Nobody among the students was unsure. 100 respondents, representing 44.44%, strongly agreed that not having access to electricity prevented them from teaching online, and 85 respondents, representing 37.78%, agreed as well. 33 (14.67%) respondents

disagreed with this variable, but only 05 (2.22%) seriously disagreed. 02 students representing 0.89% were unsure about this variable. 13 (5.77%) highly disagreed, 99 (44.00%) strongly agreed, 94 (41.79%) agreed, and 18 (8.00%) severely disagreed with the statement that the government has not provided enough facilities to support online studying. Regarding the variable that most parents cannot afford to buy their children bundles for online courses, 113 (50.22%) of the respondents strongly agreed with this variable, and 84 of the respondents (37.33%) agreed. 7 (3.11%) respondents highly disapproved of this factor. No one who took participated was unsure.

Influence of post COVID – 19 era future education policy changes on curriculum and instruction in higher education

The lecturers were asked for feedback on the following higher education policies for the post-COVID-19 era and how well they were being implemented. They answered as shown in figure 5.

Table 7 Lecturers’ responses to the extent to which post-COVID-19 era education policies have been implemented in higher education.

Policy Statement	Opinion		
	Fully implemented	Moderately implemented	Not implemented
Utilization of ICTs to upsurge access to quality education in Higher Education	00 (0%)	08 (80%)	02 (20%)
Allotment of funds for delivery of ICT infrastructure to address Equity, access and quality in Higher Education	00 (0%)	08 (80%)	02 (20%)
Utilization of ICTs to stimulate Online curriculum delivery (satellite, computers, radio, Television and mobile phones) To reach vulnerable and Marginalized higher education learners	00 (%)	09 (90%)	01 (10%)
Upsurge affordability of ICTs Infrastructure through discussion With providers for cheap rates for Higher Education	03 (30%)	06 (60%)	01(10%)

According to Table 7, two (20%) of the lecturers said that using ICTs to increase access to high-quality education in higher education had not been implemented at all, while none of the participants said that using ICTs to increase access to high-quality education in higher education had been fully implemented. Eight (80%) of the lecturers said that using ICTs to increase access to quality education in higher education was moderate. The delivery of ICT infrastructure to address equity, access, and quality in higher education received a similar report on the allocation of funding.

Only one lecturer claimed that this policy was not put into practice when it came to the use of ICTs (satellite, computers, radio, television, and mobile phones) to stimulate online curriculum delivery in order to reach vulnerable and marginalized higher education students. Nine lecturers representing 90% of all lecturers, reported that this policy was moderately used. No lecturer claimed that this policy had been completely put into practice. Three (30%) of the lecturers believed that the policy had been fully implemented, six (60%) believed that it had been moderately implemented, and only one (10%) said that the policy had not been implemented at all in relation to the increase in affordability of ICT infrastructure through discussions with providers for low rates for higher education. Additionally, students were asked for their opinions on this variable. The results are displayed in table 10 below.

Table 8 Students’ responses to the extent to which post COVID 19 era education policies have been implemented in higher education

Policy Statement	Opinion		
	Fully implemented	Moderately Implemented	Not Implemented
Utilization of ICTs to upsurge access to quality education in Higher Education	33 (14.62%)	175 (77.78%)	17 (7.60%)
Allotment of funds for delivery of ICTs infrastructure to address Equity, access and quality in Higher Education	24 (10.67%)	187 (83.11%)	14 (6.22%)
Utilization of ICTs to stimulate Online curriculum delivery (satellite, computers, radio, Television and mobile phones) To reach vulnerable and Marginalized higher education learners	63 (28%)	135 (60%)	27 (12%)
Upsurge affordability of ICTs Infrastructure through discussion With providers for cheap rates for Higher Education	51 (22.67%)	149 (66.22%)	25 (11.11%)

Table 8’s results show that 175 (77.78%) of the students reported a moderate use of ICTs to increase access to quality higher education, 17 (7.60%) reported a complete lack of ICT use to increase access to quality education in higher education, and 33 (14.62%) of the participants reported a full use of ICTs to increase access to quality education in higher education. Regarding the distribution of funds for ICT infrastructure delivery to address equity, access, and quality in higher education, 187 (83.11%) respondents indicated that this policy had been implemented moderately, 14 (6.22%) indicated that it had not been implemented at all, and 24 (10.67%) indicated that it had not been fully implemented. Concerning the use of ICTs to stimulate online curriculum delivery (satellite, computers, radio, television, and mobile phones) to reach vulnerable and marginalized higher education learners, 135 students representing 60% of the total, reported that this policy was moderately implemented. Only one lecturer claimed that this policy was not followed. 27 (12%) of the students said that this policy had been fully applied. 51 (22.67%) of the students felt that the policy had been fully implemented, 149 (66.22%) thought it had been moderately implemented, and 25 (11.11%) felt it had not been implemented at all about the increase in affordability of ICT infrastructure through discussions with providers for low rates for higher education. Additionally, students were asked for their opinions on this variable.

DISCUSSION OF THE FINDINGS

Post COVID 19 era teacher training in online teaching and curriculum and instruction in higher education

Based on the study’s previous findings, figure 1’s results show that a respectable percentage of lecturers have received training in online teaching and learning. Lecturers’ report collaborated with the students’ findings in figure 2. This report demonstrates that online teaching and learning in the post-COVID-19 era was successfully carried out because lecturers had received training in online pedagogy. These findings, however, are contradicted by the remarks by the Dean of students, who remarked, “Most of the public higher education institutions lecturers are ICT illiterate. Most of them are trained in micro soft computer word package such as typesetting, saving the document and printing. They have little or no knowledge of other ICT packages such as Internet search engines, recording and editing, video teaching, use of web resources in teaching, ICT educational pedagogy, creating smart board lessons and integrating ICT in teaching and learning which are important for online teaching and learning”. (An interview with the Dean

of students).

These results are at conflict with those of the OECD (2020, p. 41), which noted that in-service training for teachers should emphasize building teachers' resilience to help them succeed in contexts that are constantly changing. This IO states that as opposed to concentrating solely on instrumental abilities, in-service teachers' training during times of crisis ought to reinforce attitudes like learning to learn, adaptability, and collaborative work to identify acceptable answers to new situations. The goal is to empower educators to take charge of future responses to potential emergencies that, like the Covid-19 outbreak, could impair regular teaching and learning procedures. It is emphasized in the OECD guidelines that educators should also learn the required abilities to support children emotionally. This IO claims that the crisis has shown that candidate's emotive and motivational competencies are not sufficiently taken into account during the teacher training and selection processes (OECD, 2020).

Additionally, Nager (2013) claimed that due to a lack of training in online teaching and learning in higher education, lecturers face numerous obstacles when attempting to successfully integrate technology into their courses. Technology experimentation is frequently viewed by educators as being outside the purview of their job descriptions (Nager, 2013). According to Harwen (2013), some seasoned educators prefer to stick with teaching methods they are familiar with and neglect to make use of the available technologies. Since they have been teaching for a while, they do not want to add anything new to their tried-and-true lesson plans. While some schools are pressuring teachers to include technology in their curricula, when that technology is poorly taught, it is not utilized to its full potential. Any teacher who is given a high-tech program and expected to teach it in the classroom deserves sufficient training, but occasionally that training isn't offered, according to Altuna, Aydin, Ozfidan, and Amenabav (2013). This study contradicts Coman, îru, Meseşan-Schmitz, Stanciu, and Bularca (2020), who found that teachers struggled to adapt information to the online format and had equipment challenges as a result of a lack of technical online knowledge (Coman et al., 2020).

Post COVID 19 era paradigm shift from emergency-based online content delivery to full time online pedagogy and curriculum and instruction

The ideal method to promote learning is referred to as pedagogy. Teachers must understand and choose the most effective delivery method for the course in order to ensure that students are learning the subject matter as intended for them. It was anticipated that the introduction of online teaching would increase the need for educational system reform. However, it was difficult to foresee how these changes would influence established institutions that were created specifically to bring together instructors, students, and researchers. While technology advancements may make it possible for them to progressively switch to online programs, there are important distinctions between in-person interactions and the delivery of online content that must be skilfully managed.

According to table 1's findings, all respondents were in favor of altering how higher education curricula are delivered in the post-COVID-19 period. None of the respondents expressed a willingness to support modifications to the current way of delivering curriculum. Results in figure 4 indicate that the online learning system is a good substitute for preserving the study and organizing the future learning approach with regard to lecturers' perspectives of online teaching and learning as an alternative mode of curriculum delivery. The majority of respondents, according to a study of the data gathered from them, were in favor of creating and supporting online education systems. A minority number of respondents, meanwhile, disagreed and were opposed to modifying the current system of schooling. This study supports the claim made by Taglietti et al. (2021) that the COVID 19 emergency forced the closure of educational institutions all over the world. In order to ensure learning continuity, participants in the educational system were forced to look for alternate means of education delivery.

As seen in table 3, the study also looked into the advantages of online instruction. According to the study's findings, online learning helped both students and lecturers stay engaged and keep the educational process moving along as planned. The majority of respondents supported using online resources to promote learning and lessen the effects of COVID-19. A minor percentage of respondents disagreed with controlling the educational system online because it would put more financial strain on parents in the lower middle class to build infrastructure. These results are consistent with Leung and Keing's (2023) research of the Chinese University of Hong Kong's (CUHK) spring SARS response. They assert that remote learning does play a significant role in assisting students in carrying on with their studies after the disruption of the educational process brought on by the closing of schools and colleges. Despite the cancellation of courses, many teachers were nevertheless able to lecture online. The SARS epidemic spurred academics to learn how to use more advanced features, such as creating online quizzes, even though the majority of them were already familiar with online teaching platforms before the outbreak (Leung and Keing, 2003). Baytiyeh (2018) emphasizes how crucial digital tools are to maintaining access to education during brief school closures following an earthquake. For self-directed learners, digital education offers significant benefits. Older students were able to tailor their education, according to Herold (2017). They had the opportunity to some level to direct their own education, determine what they wanted to learn, what interests them, and what type of support they required. These students were also able to learn at their own pace thanks to online learning environments, which gave them greater freedom during the day.

These results, however, contradict Modan (2020), who believed that while interactive learning can be facilitated by online learning tools, it was difficult for teachers to maintain student engagement and limit the use of technology-related distractions. With digital platforms, teachers have to create the content not just for content delivery, but also to develop their students' creative thinking and implementation skills. The idea of an inclusive classroom was still in its infancy, and current educational practices fall short of managing student-centered classrooms, thus it was a significant transition and challenge (Modan, 2020).

Additionally, it's possible that students spent less time learning as a result of the closing of physical school facilities and the transition to a remote learning environment. According to the Schul Barometer (School Barometer) survey, which was conducted from March 25 to April 5, 2020, and was aimed at Austrian, Swiss, and German students between the ages of 10 and 19 (Huber et al. 2020), students' weekly learning time decreased by between 4 and 8 hours during the COVID-19 lockdown compared to when schools were open. In addition, one out of every five students claimed to study for less than nine hours per week. Leaving aside the debate over whether in-person instruction is more effective than online instruction, numerous research consistently demonstrate that cutting back on study time can result in learning loss. Young Swedish males were given a variable number of days to get ready for a battery of cognitive tests, which Carlsson et al. (2015) examined. On tests of crystallized intellect (synonyms and technical comprehension), they discovered that an additional 10 days of teaching raised results by about 1% of a standard deviation.

Marcotte and Hemelt (2008) found that in Maryland, heavy snowfall that causes fewer school days results in lower student performance. Lavy (2015) examined how variations in instructional time across countries affected student learning and came to the conclusion that these variations do matter: an extra hour per week over the school year in the core courses boosts test scores by about 6% of a standard deviation. Truancy and absenteeism at school have a negative effect on students' academic achievement. According to Stanca (2006) attendance demonstrated a statistically significant and quantitatively relevant impact on student learning after accounting for unobservable student attributes such as motivation and effort. According to Aucejo and Romano (2016), adding 10 more days to the school year results in 1.7% and 0.8% standard deviation gains in math and reading exam scores, respectively. Belot and Webbink (2010) examine the consequences of a teacher strike that occurred in the Belgian French community between May and November 1990 on academic performance. They discovered that this incident increased class repetition and

decreased educational performance.

The social split was exacerbated and widened by the sharp digital divide, which increased inequality and had an immediate effect on how learning losses were distributed among social groups during school closures (Bozkurt & Sharma, 2020). Both the impact on learning and teachers' and students' perceptions of online education were impacted by the abrupt shift to online teaching, which occurred without careful prior planning (Bozkurt & Sharma, 2020). Teachers and students had to quickly become familiar with new types of technologies and deal with uncertainties regarding Internet access or connectivity. The shift to online teaching should be seen as "emergency remote teaching," not comparable with good online education, as scholars in the field of online learning have underlined (Hodges et al., 2020).

Post-COVID-19 era availability of educational resources in curriculum and instruction in higher education in Kenya.

Table 5's findings indicate that the majority of lecturers claimed that the inability to access the internet prevented online learning. Online learning was impossible due to low digital literacy, a shortage of electricity, and insufficient government funding and support for infrastructure to support it. This was verified and agreed with table 6's analysis of student input on online instruction. These results show that online teaching and learning in higher education do not function well after COVID-19. Uneven student access to educational resources poses a severe problem for vulnerable populations, which is a well-known reality. These results support the Ministry of Education's Disaster Management Policy (2017) which was released in 2018 stating that, many forms of catastrophes occur occasionally in the nation. As a result, education emergency interventions must be created to address the various and particular needs of the affected communities where learners live. Sadly, nothing of the sort has happened (MoE Disaster Management Policy, 2018). Furthermore, the Kenyan Ministry of Education recognizes the importance of the marginalized students' unequal access to educational resources, particularly digital ones, in its Sessional Paper of 2018 on Reforming Education and Training for Sustainable Development. These findings are further supported by UNESCO cited by Abidjan (2020) who claimed that, as schools abruptly shut down in March 2020, MoE turned to online education. 89% of learners in Sub-Saharan Africa lack access to home computers and 82% lack internet. According to a UNESCO report 56 million students reside in areas that are not covered by mobile networks.

These findings are further supported by a Nation Team survey conducted in Kenya shortly after schools closed, just a small portion of the country's 17 million learners, most of whom live in urban areas, have access to digital devices, while those in rural regions are unable to do so. For students with disabilities who receive no accommodations, the situation is worse. According to an ICT Authority poll, MoE has not added CBC material on digital devices five years after the program's launch. The roughly Kshs 30 million laptop project, which was intended to give laptops to class one in 2014, has not yet been a success story (Ouma, 2020).

These findings support Treva's (2021) conclusion that the COVID-19 epidemic has had an impact on higher education institution quality. The quality of higher education is currently in jeopardy as a result of pandemic-related budget limitations among institutions of higher learning, which have reduced student resources, reduced possibilities for academic members to pursue professional learning opportunities, and reduced administrative staff. The findings showed that the epidemic worsened the already-existing imbalance in access to smart devices, internet connectivity, and teacher preparation needed for an effective switch to an online method of instruction.

The COVID-19 global pandemic has caused large-scale changes that certain higher education institutions have been unable to handle or have found challenging. This change is due to the unprecedented and fast shifting nature of the pandemic. Higher Educational Institutions have recently established emergency

systems to aid with their transition to online learning, but this does not imply that they are prepared for such systems or that the systems are efficient. The OECD has noted, using PISA data, that most education systems are not yet prepared to provide the majority of students with opportunities to learn online. They frequently cite the availability and sufficiency of school infrastructure as well as digital divides as the two main issues that policymakers need to address.

Even though learner-centered education and online pedagogy have expanded in scope over the past few decades, especially after 2000, there are still reasons why higher education institutions continue to struggle owing to a lack of educational infrastructure. The findings of this study are consistent with those of Zalat, Hamed, and Bolbol (2021), who found that 40% of teachers lacked sufficient internet connection and 36% of teachers lacked the necessary facilities and equipment. The move from traditional or blended educational systems to entirely virtual networks or online pedagogy will take some time. Lack of home office infrastructure and problems with the general skill set needed to develop online virtual education are a couple of the challenges. These findings are further supported by Crawford et al. (2020) who found that higher education institutions around the world lack the financial and academic resources necessary to make the switch to an online delivery system.

Further study of the results in table 6 reveals considerable socio-economic differences in students' access to digital tools at home. Higher socioeconomic status students are significantly more likely to own a laptop or computer at home than individuals with lower socioeconomic status. This finding is congruent with research conducted by the app Teacher Tap, which daily surveys more than 6,000 teachers in the UK. By the end of the first week of lockdown under COVID-19, according to that study, 10% or so of children were without access to a device or the internet. Additionally, according to a US Associated Press (2019) analysis, 17% and 18% of children, respectively, did not have access to broadband internet at home or a computer at school.

The US survey from the Pew Research Center (2019) provides additional evidence in favor of these findings. They asserted that access to broadband internet at home is noticeably different for families with low and high incomes. Eurostat (2019) data also shows that there is a sizable socioeconomic disparity in Europe. The availability of a broadband internet connection varies significantly by household income across all of Europe. Wealthier homes consistently have higher access to broadband internet connections than poorer homes. In the lowest income quartile, 74% of households in the EU have a broadband connection on average; in the highest income quartile, that number is over 97%. The bottom quartile exhibits substantially more cross-country variability than the top quartile, as one might also observe. In the lowest income quartile, less than 40% of households in Bulgaria and more than 90% in the Netherlands, respectively, have access to broadband internet. The substantial digital inequalities between students and teachers, as well as across schools and nations, have recently come to attention. When schools were not in session, access to digital technology varied greatly based on the economic standing of the various nations and the various social groups within those nations.

The quick transition to online teaching, which took place without careful prior planning, had an influence on both the impact on learning and teachers' and students' opinions of online education (Bozkurt & Sharma, 2020). Teachers and students had to adapt rapidly to new technological developments and cope with questions about connectivity or Internet access. As experts in the field of online learning have emphasized, the transition to online teaching should be viewed as "emergency remote teaching," not comparable with high-quality online education (Hodges et al., 2020).

Influence of post COVID 19 era future education policy changes on curriculum and instruction in higher education

The unprecedented use of technology that exposed the inadequacies of educational institutions in terms of

the availability and sufficiency of digital infrastructure as a result of COVID 19 has led to a greater focus on educational digitization policies. According to Table 7, lecturers were somewhat in favor of the strategy of using ICTs to increase access to high-quality education in higher education. While none of the participants claimed that the use of ICTs to increase access to high-quality education in higher education was fully adopted, a small minority of these lecturers revealed that the policy was not applied at all. A small percentage of the participants believed that the Upsurge Affordability of ICTs Infrastructure through Discussion with Providers for Cheap Rates for Higher Education policy had been fully implemented, six (60%) believed it had been moderately implemented, and only one, or 10%, believed it had not been implemented at all.

These results indicate that the majority of educational initiatives from the post-COVID-19 era have not been properly implemented. These data also show that the policies are only concerned with current problems and not with potential pandemics. This demonstrates that the curriculum and instructional difficulties from COVID 19 have not been fully adopted. These results support Abidjan's (2020) claim that sound policies can exist without being put into practice, but they would merely gather dust on the shelves. Additionally, the Ministry of Education (2018) supports these findings by claiming that all of these regulations have a narrow reach because they only address urgent issues in particular situations and contexts. These issues include routine common safety precautions, school fires, floods, and peace. Global pandemics that disrupt traditional school schedules and learning from home using digital platforms during such pandemics are not adequately anticipated in these rules; as a result, they need to be reevaluated to include more developing challenges and global concern-related ways.

CONCLUSION

This study concludes that COVID-19 added a lot of additional challenges to Kenya's education system, notably higher education. To guarantee that children do not lose out on vital learning opportunities that could damage their developmental milestones in the future, it is imperative to plan for smooth learning in emergencies, as illustrated by infectious diseases like COVID-19 and others. Therefore, continuing education, through alternate learning pathways, as soon as possible, must be a top priority for MoE to ensure that the disruption to the education sector is as limited as possible. Measures to mitigate any emerging challenges from the laid down strategies are also critical to ensure that MoE is able to provide access to quality, equitable and inclusive education to learners during and after the crisis to ensure continued learning and to keep pace with 100 percent policy.

This paper has outlined a few recent concerns for curriculum and instruction. To maintain educational systems that serve society's needs, teachers, teacher educators, policy-makers, and families must all work together to address these problems. Four important curriculum and instruction-related concerns were covered in this essay. The first, and possibly most important, was the impact of teacher preparation programs in online pedagogy from the post-COVID 19 era on Kenyan higher education curricula and instruction. According to the study's findings, the majority of lecturers delivering material online lacked adequate training in online pedagogy. The system's ability to provide training and support is severely hampered by the students' and teachers' lack of technical competence.

It will be beneficial to train staff members and gather parent input on the online system for online learning to be successful. Additionally, the study found that social media, such as Twitter, Facebook, Instagram, LinkedIn, and Hi5, have shaped the way of life of our young people. However, there are differences between how younger students and older generations of teachers use technology, even if the usage of technology in schools has increased. There is, as it has been put, a gap between students who are "digital natives" and their lecturers who are "digital immigrants." The county government, states, and school administrators should invest more in training so that instructors can better prepare children to use

technology, particularly in the context of new examinations, to close this gap.

The second objective was to look at how Kenyan higher education curricula and instruction were impacted by the paradigm shift from emergency-based online material distribution to full-time online pedagogy following COVID 19. The research has revealed the effects of this pervasive issue on the educational system and institutional mechanisms for delivering learning through various media. According to the report, people are looking for new learning techniques and battling serious issues with learning. As a result of this change, schools were compelled to modify their structures, cultures, programs, and curricula in order to accommodate and meet the needs of a diverse student body.

In addition to benefiting students, these changes also helped society's social and economic development (Lafer & Aydin, 2012). As an illustration, making sure that diverse students had a positive educational experience encouraged lifelong learning, and giving all students peers from different backgrounds has the potential to improve work and social interactions between people of different races, languages, religions, cultures, and ages. According to the findings of our study, a significant number of respondents expressed confidence that such changes to the educational system will eventually be advantageous to instructors and students.

The third goal was to assess the impact of post-COVID-19 era educational resource availability on Kenyan higher education curricula and instruction. Due to a lack of infrastructure and preparation for the format that best suits the new approach, the countries and educational authorities found it challenging to make the abrupt switch to online learning. Maintaining operational costs and retaining students becomes challenging for educational institutions. In the upcoming years, as countries' economies are under strain, it will be extremely difficult for developing and impoverished countries to create such infrastructure. The methods used by institutions to carry out the online education plan were influenced by the lack of money and competence in remote locations. Changes were required in institutional approaches and the educational system as a whole. It was advised that universities utilize technology and involve the students in their learning in order to ensure continuity in the learning process and to impart knowledge to the students. For providing the learning, smart learning platforms like Padlet and Edmodo were to be used.

The fourth objective was how future curriculum and instruction modifications in Kenya's higher education would be impacted by COVID 19-era education policy reforms. The proper application of social isolation and sanitization regulations also raised the facilities' operating expenses. The curriculum was impacted by these frequent policy changes. Although political and educational leaders strove to enact changes that resulted in beneficial change, many of them fell short. Thus, additional research must be done by higher education institutions, and then, based on the results, the government and school administrators must choose the most suitable reforms and adjustments to the curriculum and instruction in school settings.

RECOMMENDATIONS

The following suggestions are hereby offered in light of the facts and conclusions reported in the preceding section: Lecturers need to learn how to change their roles in a world where communication is only possible online and even motivated students who generally perform well in class can become unmotivated when learning is conducted entirely online. All instructors must increase their digital literacy, and this can be done with workshops and training sessions that can be a part of their ongoing professional development (Redecker 2017). It would also be crucial to support cooperative forms of professional development among teachers (such as teacher networks), as this would enable them to learn from their colleagues.

Teachers should learn how to adapt their role to a situation in which they can communicate only online and in which even students typically performing well at school may tend to lose motivation when shifting to online learning. It is essential to improve teachers' digital competences across all ages, and this could be

done with workshops and training courses (Redecker 2017), which should become part of their continuous professional development. Supporting collaborative types of professional development between teachers (e.g. teacher networks) would also be important, as it would allow them to learn from their peers

For ICT to be competent, there must be a supply of pre-service as well as in-service abilities in areas like networking, pedagogy, technical issues, and social issues. Effective usage of computers will result from this. Senior and older lecturers require training. In order to maintain equity when it comes to the delivery of online services in higher education, the Ministry of Education must ensure that lecturers receive proper training on online teaching. Lecturers should learn how to change their roles in situations when they can only communicate online and even motivated as students may become unmotivated when switching to online learning.

It is crucial to improve lecturers overall digital literacy and make sure they are knowledgeable about the pedagogical approaches that are most effective for blended learning and online learning. Higher education administrators ought to consider incorporating entirely online teaching strategies into the course offerings. In order to simplify the implementation of the curriculum, the Kenyan government should also ensure that students are taught about the use of online instruction beginning in secondary school.

Institutions of higher learning must be prepared to fully integrate both traditional classroom instruction and online learning. The curriculum, the design of the school buildings, and both the quantity and quality of teaching capacity must all be changed if one wants to maintain physical distance. The government should reevaluate its stance on broadcasting for educational purposes. Educational broadcasting can be a useful addition to online programs as it offers training to people without internet access and standardizes teaching practices and resources across schools in a country or area.

Governments and educational institutions ought to continue spending money on e-learning when the COVID-19 emergency period is ended. The lessons learned from this catastrophe, which necessitated a sudden and unanticipated transfer to online instruction, will need to be carefully considered by them. They must evaluate what worked, what didn't work, and why internet connectivity and the availability of computers, laptops and tablets should be guaranteed by the government. Any online teaching and learning plan must meet the basic requirements of having access to the internet at a reasonable speed and to the appropriate ICT tools. They are less likely to be available to poor students, according to the evidence.

Government might lower the cost of internet connectivity for low income households and ensure that low income students have access to free computers, laptops and tablets. The government should investigate the possibility of forming partnership with sponsors like Computer for Schools Kenya (CFSK), NEPAD and other reputable development partners in order to provide higher education with adequate ICT resources and increase the number of higher institutions receiving grants. This will contribute to the funding needed to equip higher education buildings with computers and connect them to high speed internet.

Access to computers and the internet is necessary for efficient online teaching and learning. Additionally, to reduce the digital divide between those who have access to these resources and those who do not, high-quality ICT infrastructure should be provided to all institutions of higher education. The government must also provide academics with computer and broadband internet connection packages with fair payment and installment arrangements. Because they don't have enough time during the school day to prepare for ICT-related online content, they can't finish it. If they did, they could once they went home. It is important to expand the function of broadcasting education. In addition to delivering instruction to those without internet access and distributing educational content across all schools in a nation or region, educational broadcasting, or the distribution of educational programs by public television or radio, can be a useful complement to online programs.

The government should work through the MoE to establish and execute intervention policies and programs for the most vulnerable students, including those with special needs, the underprivileged, and the marginalized. The government, through the Ministry of Education, ought to improve the current Risk Management and Safeguards policies to serve as a roadmap for emergency preparedness measures against the COVID-19 pandemic and other associated crises. To make sure that more susceptible students can make up for the learning loss they suffered during the COVID 19 lock down, the proper regulations should be put in place.

Higher learning institutions should be prepared to fully incorporate online and offline teaching and learning. This calls for change in both the quantity and quality of teaching capacity, revision of the curriculum and the structure of the school buildings especially if one wants to maintain physical distancing. The government should rethink the role of broadcasting education. Educational broadcasting can be a useful complement to online programmes as it delivers teaching to those who do not have access to the internet and equalises teaching methods and material across schools within a country or region. In order to assist the government, state leaders, and higher institution leaders in choosing the most suitable reforms and modifications to curriculum and instruction in school settings, researchers in higher education institutions must concentrate their efforts in this area. In several nations, educational broadcasting has been employed to assist distance learning during the COVID-19 epidemic.

The effectiveness of policies designed to reduce the number of early dropouts of students must be strengthened and continuously monitored. In order to prevent some students from disadvantaged families from being tempted to drop out of universities in the event that one or both of their parents lost their jobs due to the COVID-19 crisis, financial incentives, such as scholarships, cash payments, or vouchers, could be offered to these families. These initiatives, also referred to as means-tested conditional cash transfers, have been implemented in a number of wealthy countries, such as the Earnings Maintenance Allowance (EMA) program in England and the “Helping Outstanding Pupils Educationally” (HOPE) programme in Georgia, United States. Dearden et al. (2009) find that EMA worked very well in reducing the proportion of school dropouts.

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