# The Impact of the Novel Corona Virus in Education: Salient features learnt in Higher Institutions of learning, Kenyan perspective

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## ABSTRACT

The world was attacked by the Novel Coronavirus Virus which has been forcing the world into a series of changes in many fields one of them being education. This pandemic imposed new educational methods such as adopting remote teaching to support distance learning and online education delivered through radio and television and internet learning in schools, colleges and universities. This new method was considered the sole method to ensure continuity of education in the educational institutions during this pandemic. The aim of this paper was to evaluate the impact of the Novel Corona Virus in Education, the e-readiness of Dons in higher institutions of learning to shift from face-to-face to online teaching and the salient features learnt in Higher Institutions of learning. The study employed both a cross- sectional study design and a theoretical review of secondary data material to discuss the challenges and mitigations for the Novel Corona Virus of 2019 in the Kenyan education sector, with specific reference to higher institutions of learning. Classical Liberal Theory of Equal Opportunities advocated by Sherman and Wood and the theory of justice and fairness advanced by Rawls John guided the theoretical review. The in-depth background review shows the impact of the Novel Corona Virus on education especially the higher institutions of learning. The study findings established that ownership of electronic devices didn't guarantee e-readiness by Dons and competence in use, technical issues, lack of prior experience on e-learning and Dons had limited skills on e-readiness to shift from face-to face to online teaching. The study recommends an emerging framework to assess the uneven and difficult implementation of e-readiness in initial and continuing educational institutions in Africa especially Kenya, and this form both the perspective of Dons and stakeholders in higher institutions of learning.

**Key words: Novel Corona Virus, Preparedness, Higher institutions, e-readiness**

## 1.2. Introduction

Since its foundation, universities, like any other social institution, have had to face devastating epidemics that have impacted their daily functioning. And they have survived and continued their mission even with their doors closed. In 1665, Cambridge University closed due to a black plague epidemic that struck England. Isaac Newton had to return to Wools Thorpe Manor, his home. One day, sitting in the garden, he saw an apple fall that inspired him to formulate his theory of universal gravitation or, at least, he told William Stukeley who included this anecdote in Newton's biography that he would publish after his death (Stukeley, 1752). The moral of this story is that, inasmuch as the doors of higher education institutions have to be closed, academic activities continue where there are spirits committed to science and training, and, sometimes, with surprising results.

Incidentally, the University of Cambridge has closed its doors now in 2020, for the second time in its history.

Currently, the temporary closures of higher education institutions (HEIs) due to the COVID-19 pandemic are no longer news, because most countries have stopped face-to-face teaching. The UNESCO IESALC estimates reflected in the figure below, show that the temporary closure affects approximately 23.4 million higher education students (ISCED 5, 6, 7 and 8) and 1.4 million teachers in Latin America and the Caribbean; this represents approximately more than 98% of the region's population of higher education students and teachers.

The decision to temporarily close HEIs was prompted by the principle that large gatherings of persons constitute a serious risk to safeguarding public health during a pandemic. HEIs and indeed all educational institutions tend to close their doors in situations where some form of confinement or quarantine has been legislated. In Europe today, the only country not following the recommendation to suspend classroom activities is Sweden. In the United States, state authorities have mandated closure but the vast majority of campuses had already closed,
particularly those of large public and private universities had closed weeks before the government's intervention. As the pandemic spreads, which seems inevitable, the remaining countries will also institute mandatory measures to suspend face-to-face activities for all educational institutions (UNESCO, April 2020).

In Latin America, confinement or quarantine measures were taken almost immediately and, in some cases, with a long-term perspective. For example, in Argentina the suspension of face-to-face classes was recommended on March 14; in Chile, full quarantine in some districts resulted in the massive closure of HEIs as of March 16; in Colombia, all HEIs were closed following the health emergency decree of March 12 which is expected to continue until May 30; in
Cuba, HEIs were closed on March 25 for an indefinite period; in Peru, face-to-face classes were suspended on March 16 initially for 15 days but this has now been expanded to 30 days; in El Salvador classes were suspended for 30 days until further advice on March 11; in Uruguay, the University of the Republic ordered the cessation of classroom activities on March 15 also for close to 30 days; in Venezuela a state of emergency was proclaimed on March 13, initially for 30 days and to date, in the region only some HEIs in Brazil and Mexico appear to be open (UNESCO, April 2020).

The outbreak of the novel coronavirus pandemic in China became primetime news in Africa as the plight of its international students in Wuhan where it began took centre stage. At the time of the outbreak, Hubei, the province where Wuhan is located, hosted around 5,000 of the nearly 82,000 African students in China. In the early days of the crisis, concerns in the Global North focused primarily on the disruption that the pandemic would bring to student flows from China and its economic impact on their higher education systems. Efforts to prevent the spread of the virus ranged from extending or postponing academic terms to banning incoming students. Most of Africa's initial response focused on repatriating students stranded in Wuhan or providing assistance from afar. Nigeria, Senegal, South Africa, as well as Algeria and its North African neighbours, succeeded in repatriating their students an achievement that was much celebrated. Other countries lacking the readiness and the resources to do the same had to assume a low profile against public opinion, which favoured repatriation (Wondwosen Tamrat and Damtew Teferra, April 2020).

Institution closures in the context of this rapidly-spreading virus have been deemed necessary by health authorities across the globe, to both slow the spread of the disease and to mitigate the effects on health systems that will not be able to cope with potentially massive numbers of critically ill patients. In some contexts, confinement is becoming not only an act of civil solidarity, but an imperative measure for protecting public health. However, confinement and school closures often have longer-term consequences, especially for the most vulnerable and marginalized, magnifying already-existing disparities within the education system. In addition to the missed opportunities for learning, many children and youth lose access to healthy meals, and are subjected to economic and social stress.

Africa has taken the coronavirus pandemic seriously only in the last few weeks, following the confirmation of its first cases. Initial responses included the closure of schools and universities beginning in mid-March. Increasingly, universities across the continent are setting up institution-wide task forces to mitigate the impact of the pandemic. Some are striving to participate in high-end research towards finding a cure for the virus. Many are attempting to shift to online teaching and learning through institutional, national, continental and international initiatives. Most plans are only at their initial stages of implementation and call for ramping up current efforts, forging wider cooperation and sharing experiences and resources across the whole continent UNESCO, April 2020). In Kenya, learning in all institutions of learning was suspended as from 16th March and was expected to continue for 30 days.

No one knows for sure how long these closures are likely to last. Initial measures taken by many governments, Kenya inclusive have ranged from 15 to 30 days, but one can easily anticipate that they will be extended until the pandemic subsides. It is not unreasonable to imagine scenarios where this situation can last two months or more, or as in the case of Spain and Italy where the decision was announced not to resume face to face classes for the rest of the academic course which normally ends in June. While the impact of the pandemic on HEIs was abrupt and in the majority of cases there was no contingency plan other than to attempt to continue classes remotely, it is important that we start to conceptualize a way out of this crisis, ensuring the highest degree possible of inclusion and equity. Indeed, one could say that the pandemic adds a further degree of complexity to higher education globally but particularly in the region because of the unresolved challenges it faced such as growth without quality, inequities in access and achievement and the progressive loss of public financing (UNESCO, April 2020).

Higher education institutions in Kenya have reacted in a solidary manner and practically at a global level, have acted uniformly: they have continued teaching using pedagogical modalities that do not require physical attendance. The doubts arise when one begins to hypothesize about the likelihood of a prolonged duration of this exceptional situation. Should this be the case, the effects on the system will be multiple. Two major issues that hold serious implications in the fight against the pandemic is this online teaching, which is now championed as an alternative form of educational delivery, and the economic impact of the pandemic on Kenyan higher education. The pertinent question one would ask is; were all the higher institutions of learning prepared for the shift to online teaching?

## 1.2. Research Questions
i. What is the impact of the Novel Corona Virus on higher institutions of learning Kenya?
ii. Are Dons in higher institutions of learning in Kenya prepared for e-readiness and teaching in times of crisis?

iii. What are the salient features learnt in higher institutions of learnt from Novel Corona Virus  in education?

## 2.1. Methodology

The objective of this paper was to identify the e-readiness for online learning in the event the Novel Corona Virus in Education: Salient features learnt in Higher Institutions of learning, Kenyan perspective. The study employed both a cross□sectional descriptive study and a theoretical review of secondary data material to discuss the challenges and mitigations for COVID-19 in the Kenyan education sector, with specific reference to higher institutions of learning. Classical Liberal Theory of Equal Opportunities advocated by Sherman and Wood and the theory of justice and fairness advanced by Rawls John guided the theoretical review.. A purposeful sample was drawn from Dons in selected higher institutions of learning in Kenya.  To that end, a systematic background review was made based on the following formulation of review question, devising search strategy and application of study selection criteria (Cohen, (1999).  A simple questionnaire was mailed to the targeted respondents. A questionnaire was a way of collecting information by engaging in a special kind of conversation with respondents in a state of lockdown due to the Novel COVID-19 Pandemic.

### 2.1.1 Devising Search Strategy
The search strategy was comprehensive and articles were collected from various databases in Google Scholar and UNESCO Global Network of Learning. The study used COVID-19: Learning cities on the front line, e-learning readiness and e-learning pandemic pedagogy during as Keywords.

### 2.1.2 Study Selection Criteria
 According to Cohen, (1999) the selection criteria provides their clientele with information in a form, format, and schedule that maximizes its effectiveness.  This criterion was used to filter the impact of the novel corona virus in higher institutions of learning in Kenya. The pertinent question was "were higher institutions of learning ready to shift from face-to- face to online teaching"?

### 3.1 Findings of the Study
**What is the impact of the Novel Corona Virus on higher institutions of learning Kenya?**
Today, e-learning services provide opportunity for any person to learn anywhere, anytime. Its flexibility enables a significant shift in the engagement of educational institutions in lifelong learning towards non-traditional learners (Vassiliou & McAleese, 2014).  To answer the research questions, an item in the questionnaire asked Dons to state the electronic devices they owned for e-readiness shift from face to face to online learning. Out of 36 respondents who responded, 97.2% revealed that they owned smartphones whereas 2.8% revealed they didn't own smartphones, 52.8% revealed they owned tablets whereas 47.2% revealed that they didn't own smartphones, 97.2% revealed that they owned laptops whereas 2.8% revealed that they didn't own any laptop and 36.1% revealed that they owned desktops whereas 63.9% revealed that they didn't own desktops.  Using the mean to further analyze the responses on ownership of the electronic devices, a summary of ownership with their standard deviation are shown in Table 1. Ownership of the smartphones by Dons had a mean of .97 with a standard deviation of .167; ownership of the tablet had a mean of .53 with a standard deviation of .506, ownership of laptop had a mean of .97 with a standard deviation of .167 whereas ownership of the desktop had a mean of .56 with a standard of .773 as shown on Table 1.

**Table 1: Means of ownership of Electronic Devices by Dons**

|  | Ownership of electronic Smartphone | Ownership of electronic Tablet | Ownership of electronic Laptop | Ownership of electronic Desktop |
|---|---|---|---|---|
| N | 36 | 36 | 36 | 36 |
| Mean | .97 | .53 | .97 | .56 |
| Std. Deviation | .167 | .506 | .167 | .773 |

Ownership of electronic devices doesn't guarantee e-readiness by Dons and competence in use. Institutions of higher learning in Kenya are expected to do more in the months ahead while concurrently battling across many fronts. This includes addressing the more immediate challenges of the threat of COVID-19, seeking improved mechanisms for online delivery and planning to address the long-term effects of the pandemic on institutional capacity. Marshall and Ruohonen (1999) indicated that e-learning in the classroom still a big challenge to implement in Africa, Kenya inclusive whereas Thakur (2014) study revealed how learners were suffering from adopting e-learning and these barriers are Internet outages, laptop problems, and login issues and some of the learners never used laptops for the e-learning purposes. This could be a problem cutting across board on both learners and Dons. Further, an item in the questionnaire asked Dons to indicate online modes they used to apply in teaching their students. Out of 36 respondents 80.6% revealed that they used email whereas 16.7% revealed that they didn't use email as a mode applied in teaching. The study got varied responses with the following means as shown in Table 2.

**Table 2. Modes applied in Teaching**

|  |  | Email | Whatsapp | Zoom | PPT | Radio | Enaz | Moodle | KENET | Big BlueButton | Dropbox | GOOGLE MEET |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | Valid | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
|  | Missing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mean |  | .86 | .81 | .28 | .44 | .00 | .03 | .03 | .06 | .03 | .47 | .28 |
| Std. Deviation |  | .424 | .856 | .454 | .504 | .000 | .167 | .167 | .232 | .167 | 1.978 | 1.667 |

Out of 36 respondents, Dons who used email in teaching had a mean of .86 with a standard deviation of .424, those who used WhatsApp had a mean of .81 with a standard deviation of .856, those who used Dropbox had a mean of .47 with a standard deviation 1.978 and those who used PowerPoint had a mean of .44 with standard deviation of .504 whereas modes had minimal use in teaching. This clearly shows that the first epicenter of COVID-19 which brought about the seismic shift from a face-to-face learning tradition to conducting all learning activities online was not without problems; technical issues had to be solved and even higher institutions of learning with no prior experience were forced to find solutions. However, distance and online courses produced new gaps, the challenges that higher institutions have to address. The study established students perspectives on modes applied on teaching and received the following sentiments on social media: *"You want me to take online classes. I live in Turkana (in far-off remote northern Kenya). Does this university even care that I obviously can't access [the] internet. It is University of Nairobi, not University for people of Nairobi,"* tweeted student Jared Washington Ochako. *"Training is an inevitable part of any business but depending solely on an e-learning platform can make learning less personal, less engaging, and in the process, less effective. We urge comrades to boycott such shenanigans by UON,"* said another student going by the online name Mzee Mzima (*2020).

Further, the study sought how confident Dons were on-readiness by shifting from face- to-face-to face to online teaching as shown on Table 3. Dons had various means with standard deviations on e-readiness such varying from means of 3.33 to 4.11 with standard deviation ranging from 0.73 to 1.06 as shown on Table 3.

**Table 3.Dons e-readiness**

|  | N | Missing | Mean | Std. Deviation |
|---|---|---|---|---|
| I am confident in my ability to implement curriculum in an online environment | 36 | 0 | 4.11 | 1.01 |
| I am confident in my ability to use various programs to deliver instruction. | 36 | 0 | 4.11 | 0.92 |
| I am confident in my ability to create an online environment which allows students to build new knowledge and skills. | 36 | 0 | 4.11 | 0.89 |
| I am confident in my ability to implement different methods of teaching online. | 36 | 0 | 3.92 | 1.02 |
| I am confident in my ability to moderate online interactivity among students. | 36 | 0 | 3.89 | 0.85 |
| I am confident in my ability to encourage online interactivity among students. | 36 | 0 | 4.08 | 0.73 |
| I am confident in my ability to use online student assessment to modify instruction. | 36 | 0 | 3.81 | 0.95 |
| I am confident in my ability to use technology to predict studentsskills/understanding of a particular topic | 36 | 0 | 3.33 | 1.12 |
| I am confident in my ability to use technology to create effective representations of content that departs from textbook knowledge. | 36 | 0 | 3.78 | 1.17 |
| I am confident in my ability to meet the overall demands of online teaching | 36 | 0 | 3.50 | 1.06 |

Moreover, the study sought to find out whether in the wake of COVID-19 Dons were provided with the enabling environment for transition from teaching from face-to- face to online teaching. Out of 36 respondents, Dons revealed that there was a supportive environment regarding professional development for online learning with a mean of 3.22 and a standard deviation, others revealed that there were clear objectives regarding online learning with a mean of 3.119 and a standard deviation of 0.98, others reveled that current ICT- possibilities and infrastructure regarding online learning were taken into account with a mean of 3.31 and a standard deviation of, 0.98, others revealed that there was a clear vision towards online learning with a mean of 3.22 and a standard deviation of 3.44, others revealed that there was a professional development strategy towards online learning with a mean of 2.86and a standard deviation 1.3, others revealed that additional pedagogical support provided to transition from face-to-face teaching to online because of COVID-19 had a mean of 3.31 and a standard deviation of 0.98 whereas additional technical support support provided to transition from face-to-face teaching to online because of COVID-19 had a mean of 4.16 and a standard deviation of 0.69 as shown in Table 4.

**Table 4. Wake of COVID-19 and enabling environment**

|  | N | Missing | Mean | Std. Deviation |
|---|---|---|---|---|
| There is a supportive environment as regards professional development for online learning. | 36 | 0 | 3.22 | 1.12 |
| There are clear objectives as regards online learning. | 36 | 0 | 3.19 | 0.98 |
| The current ICT-possibilities and infrastructure as regards online learning are taken into account. | 36 | 0 | 3.31 | 0.98 |
| There is a clear vision towards online learning. | 36 | 0 | 3.22 | 3.44 |
| There is a professional development strategy towards online learning. | 36 | 0 | 2.86 | 1.31 |
| Additional pedagogical support has been provided to ition face-to-face teaching to online because of COVID-19 | 36 | 0 | 3.31 | 0.98 |
| Additional technical support has been provided to transition face-to-face teaching to online because of COVID-19. | 31 | 5 | 4.16 | 0.69 |

Despite having benefits of online teaching such as ability to pull different materials to explain your point, It is cheaper than the face to face since it consumes less resources and It inculcates self-discipline on both the students and teachers Dons revealed that there were still challenges such as some students didn't have a quiet place to learn, Some students were distracted to do other things since while teaching is going on and socially disconnected and students might never had the opportunity to network.

From the findings, the study concludes that going digital effectively requires substantial coordination with, and swift support from, institutional and national service providers, regional entities, international partners, NGOs, the private sector and ICT providers to rally behind such tools and platforms at little or no cost. It is imperative to seriously seek alternative means and approaches in order not to leave behind students with little or no access to electronic communication. The painful reality of the digital divide in Kenya has to be strategically and systematically managed: reaching out to millions of 'marginalised' students must become a national priority in this time of crisis. Moreover, an item in the questionnaire to sought opinions on what percentage of Dons' initial teaching load was online before COVID-19. Out of 36 respondents who responded, between 1-10% opined 30.6%, 11-20% opined 22.2%, 21-30% opined 8.3%, 31-40% opined 11.1%, 41-50% 0pined 5.6%, a whereas over 51% opined 11.1% as shown on Table 5.

**Table 5.  Dons opinion on percentage of initial teaching load online before Corona Pandemic**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | None | 2 | 5.6 | 5.9 | 5.9 |
| | 1-10% | 11 | 30.6 | 32.4 | 38.2 |
| | 11-20% | 8 | 22.2 | 23.5 | 61.8 |
| | 21-30% | 3 | 8.3 | 8.8 | 70.6 |
| | 31-40% | 4 | 11.1 | 11.8 | 82.4 |
| | 41-50% | 2 | 5.6 | 5.9 | 88.2 |
| | Over 51% | 4 | 11.1 | 11.8 | 100.0 |
| | Total | 34 | 94.4 | 100.0 | |
| Missing | System | 2 | 5.6 | | |
| Total | | 36 | 100.0 | | |

From these findings, Kenya's shuttered universities face the twin challenge of rolling out online learning for thousands of students due Dons limited skills on e-readiness and finding money to pay salaries and meet their financial obligations at a time when major revenue streams are shut. Like private institutions, public universities rely heavily on tuition fees to fund their operations since any subsidies they receive from the government are inadequate to meet their financial needs.  On a positive note, the threat on e-readiness and the approaches to overcome it may be catalytic for long-lasting changes in Kenya's higher education. Among others, diversified means of educational delivery, in particular a non-residential model, may become more mainstream, more acceptable and more respectable.

Studies revealed that Kenya took the coronavirus pandemic seriously, following the confirmation of its first cases. Initial responses included the closure of schools and universities beginning in mid-March. Increasingly, universities across the continent Kenya inclusive, set up institution-wide task forces to mitigate the impact of the pandemic. Some are striving to participate in high-end research towards finding a cure for the virus. Many are attempting to shift to online teaching and learning through institutional, national, continental and international initiatives. However, most plans were only at their initial stages of implementation and call for ramping up current efforts, forging wider cooperation and sharing experiences and resources across the whole continent (Wondwosen Tamrat and Damtew Teferra, 2020). Still, major issues that hold serious implications in the fight against the pandemic in education are online teaching, which is now championed as an alternative form of educational delivery, e-readiness and the economic impact of the pandemic on Kenya higher education.

In addition, an item in the questionnaire sort to find out how Dons could rate themselves as a result of COVID-19 on how they shifted from face-to-face subjects/classes to an online platform. Out of the 36 Dons who responded, 1-10% rated 2.8%, 11-20% rated 2.8%, 21-30% rated 11.1%, 31-40% rated 11.1%, 41-50% rated 13.9% whereas over 51% rated 44.4% as shown on Table 6.

**Table 6. Shifting face- to- face subject/classes to online platform**

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | None | 3 | 8.3 | 8.8 | 8.8 |
|  | 1-10% | 1 | 2.8 | 2.9 | 11.8 |
|  | 11-20% | 1 | 2.8 | 2.9 | 14.7 |
|  | 21-30% | 4 | 11.1 | 11.8 | 26.5 |
|  | 31-40% | 4 | 11.1 | 11.8 | 38.2 |
|  | 41-50% | 5 | 13.9 | 14.7 | 52.9 |
|  | Over 51% | 16 | 44.4 | 47.1 | 100.0 |
|  | Total | 34 | 94.4 | 100.0 |  |
| Missing | System | 2 | 5.6 |  |  |
| Total |  | 36 | 100.0 |  |  |

From the findings, it was imperative to seriously seek alternative means and approaches in order not to leave behind students with little or no access to electronic communication. The findings concur with findings of Wondwosen et al. (2020) on the impact of COVID-19 in higher institutions of learning. While this is taking shape, institutions of higher learning need to develop a comprehensive plan and a rigorous follow-up scheme to ensure that academics and students make proper use of digital platforms. This task cannot be left solely to the discretion of individual actors. Dr Richard Bosire, the chairman of the Universities Academic Staff Union's University of Nairobi chapter, was quoted in local media as saying: *"Not all lecturers had been trained and those who had were waiting for directions on how to proceed. Most students do not have laptops or money to buy internet bundles to sustain a three-hour online course. Some of them live in far-flung areas and do not even have access to the internet, so how will they be expected to come on board?" "At Kenyan universities, online learning is mainly focused on postgraduate students with the larger population, undergraduate learners, left out. Part of the problem is lack of investment in online resources by the institutions,"* said the local Daily Nation newspaper in an editorial on 28 March. *"The obvious drawback for e-learning is the digital divide. Most families have limited or no access to the internet. Such a situation does not belong to the future but the present,"* the newspaper said (Gilbert Nganga, Maina Waruru and Gilbert Nakweya , 2020).

Moreover, an item in the questionnaire sought to find out if Dons were given adequate time to prepare and shift to online teaching. Out of 36 respondents 38.9 % revealed that days to prepare to shift to online were not adequate, 16.7% revealed days were less adequate, 25.0% revealed that days were somehow adequate whereas 13.9% revealed that days were adequate as shown on Table 7.

**Table 7. Adequate Days to Prepare subjects/classes online**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Not adequate | 14 | 38.9 | 41.2 | 41.2 |
| | less adequate | 6 | 16.7 | 17.6 | 58.8 |
| | Somehow adequate | 9 | 25.0 | 26.5 | 85.3 |
| | adequate | 5 | 13.9 | 14.7 | 100.0 |
| | Total | 34 | 94.4 | 100.0 | |
| Missing | System | 2 | 5.6 | | |
| Total | | 36 | 100.0 | | |

From the findings of the study, there was no adequate time to prepare and shift to online teaching in higher institutions of learning in Kenya. This concurs with Wondwosen et al. (2020) study on ''COVID-19 poses a serious threat to higher education'' which revealed that 9.8 million African students were experiencing disruption in their studies due to the closure of higher education institutions and the danger of contamination which triggered institutions to move their courses online. However, going online was not that simple on a continent where only 24% of the population had access to the internet, and poor connectivity, exorbitant costs and frequent power interruptions were serious challenges.

Additionally, the study sought to find out the institutions' decision on transition from face-to-face classes to online teaching platform. Out of 36 respondents, 22.2% revealed that decisions were not mandatory, 22.2% revealed that decisions were mandatory, 50.0% revealed that decisions to shift to online were expected as shown on Table 8.

**Table 8. Nature of decisions to transit from face-to face classes to online platform**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | It was not mandatory | 8 | 22.2 | 23.5 | 23.5 |
| | It was mandatory | 8 | 22.2 | 23.5 | 47.1 |
| | It was expected | 18 | 50.0 | 52.9 | 100.0 |
| | Total | 34 | 94.4 | 100.0 | |
| Missing | System | 2 | 5.6 | | |
| Total | | 36 | 100.0 | | |

The findings revealed that a decision to transit from face-to-face to online platform was expected given the crisis. Studies show that in Kenya, successful electronic-based degree programmes have been dominated by foreign and international qualifications, mostly postgraduate degrees featuring collaborations between local private institutions and foreign institutions (Nganga, et al. 2020). While the magnitude of the COVID-19 crisis is unprecedented, the study looked at the lessons

learnt from the Ebola epidemic in Africa. At the height of the epidemic, 5 million children were affected by school closures across Guinea, Liberia and Sierra Leone, countries hardest hit by the outbreak. And poverty levels rose significantly as education was interrupted. Thus, the study concluded that it was high time that higher institutions of learning in Kenya responded to the current crisis by tapping into its existing investment in ODeL [opens and distance e-learning] and provide enabling infrastructure to enhance online learning. Further,   universities to embark on programmes to train its staff on e-readiness to enable them to move their teaching and learning to online platforms to be mitigation measure in times of pandemics and epidemics.

**Salient features learnt in higher institutions of learning from COVID-19 pandemic in education**

The study established that in   July   2018, Ministry of Education of Education Science and Technology (MoEST) launched  its Disaster  Management  policy  whose  objective  was  to establish an inclusive institutional framework for disaster management  in  educational  institutions in  Kenya. The Policy  launch  came  at  a  time  when  the  education  sector was challenged by the effects of heavy rains  as  well  as  the  wave  of  fires  that  had  ruined  institutional infrastructure in several parts  of  the  country (Education  Sector  Disaster Management Policy, 2018). The policy was purposed   in mitigating these risks in order to promote the safety of educators and learners    in the  Kenyan  learning  institutions. The interventions  outlined  in  the  policy  encompass strengthening and development of capacities at  all levels of  personnel  and  leaners  on  disaster management  in  the  education  sector.  The  policy  provides  a  framework to guide  coordination, collaboration  and  management  of  emergencies in the education sector.  The   2018   MoEST Disaster  Management  Policy  further reinforced  other  policies  and  guidelines  such  as The Education Sector Policy for Education for Sustainable Development, The Education Sector Policy  on  Peace  Education  (2014)  and  the  Health  and  Safety  Standard  Guidelines  for institutions,  which  are  presently  being executed in educational  institutions.  All  these  policies were  limited  in  scope  as  they  addressed immediate  concerns  in  specific  time  frame  and context.  These  concerns  include  fires  in  schools,  floods,  peace  and  routine  common  safety guidelines but not e-readiness in higher institutions of learning.  Global pandemics disrupting  the regular  higher institutions learning routines  and  learning  from home through digital platforms during such pandemics were not envisaged exhaustively in these policies hence need to re-evaluate them to incorporate more emerging issues and approaches of global concern.

Using the horse analogy, the study established that e-readiness was limited or rather is at an infant stage in higher institutions of learning.
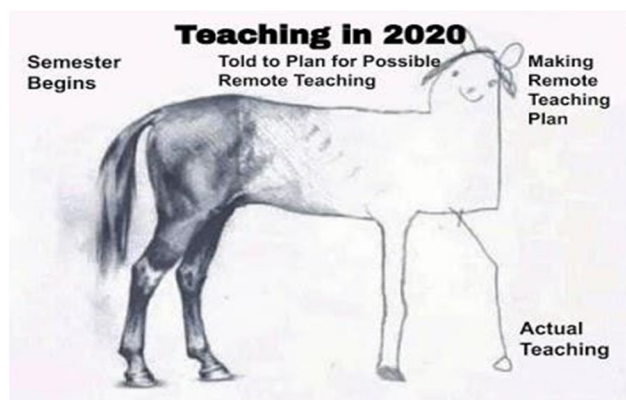


Image sourced on Twitter.

In the emerging 4th industrial revolution, Dons are meant to guide not to teach because teaching stifles creativity. Research shows that kindergarten kids are more creative to university graduates. This is because they are unhindered. The future of work will require people who can solve problems creatively, who have soft skills (Kori, 2016). Teaching has been eroding these qualities. Thus, e-readiness is inevitable. Further, the study established that Covid-19 had just fast tracked what higher institutions of learning were supposed to do in the emerging 4th industrial revolution. Education was to shift from the traditional industrial model to mass customization of learning simply because technology has become cheap that we can customize learning to individual learning at a fraction of the current cost of teaching.

**Secondly,** there is need to develop a change model that will address issues in the education sector during pandemics and epidemics to mitigate closure of learning institutions thus leading to lifelong learning. When lifelong learning is adopted as the overarching concept framing the Sustainable Development Goal (SDG) on education, the vision will not only be educational but also developmental, carrying impact across other SDGs. Today, confronted with the COVID-19 crisis, the model would have been used to demonstrate how higher institutions of learning in Kenya become resilient. Or

Develop an individual-based simulation model was used to investigate the effectiveness of institutions closure interventions for influenza pandemics.

**Thirdly,** there was need to monitor the impact of the crisis on education at local level, documenting lifelong learning policy responses, share experiences and good practices as some of the functions that the Kenyan government will do to build resilience.

While the magnitude of the COVID-19 crisis is unprecedented, we can look to the lessons learnt from the Ebola epidemic in West Africa. At the height of the epidemic, 5 million children were affected by school closures across Guinea, Liberia and Sierra Leone, countries hardest hit by the outbreak. And poverty levels rose significantly as education was interrupted. Kenyan institutions higher learning are expected to do more while concurrently battling across many fronts. This includes addressing the more immediate challenges of the threat of COVID-19, seeking improved mechanisms for e-readiness on online delivery and planning to address the long-term effects of the pandemic on institutional capacity.

# Conclusion

Conclusively, it is imperative to be ahead of pandemics purposely to envisage seamless learning in critical situations as evidenced by the novel corona virus and other infectious diseases, to emanate in future to ensure that students do not lose out on essential learning times that could have an impact on their career milestones. Therefore, e-readiness for Dons using alternate learning pathways must be a top priority in higher institutions of learning to ensure that the disruption to education sector is as limited as possible. Measures to mitigate any emerging challenges from the laid down strategies are also critical to ensure that Dons are able to provide access to quality, equitable and inclusive education to students during and after the crisis to ensure continued learning and to keep pace with 100 percent education.

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**Availability of Data and Material**
All data generated or analyzed during this study are included in this published article.
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