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## **Virtual Teaching and Learning Paradigm Shift Implications on Access, Equity and Quality in Higher Education in Kenya**

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### **Abstract**

*Higher education is the lifeblood at the heart of every nation's development owing to its fundamental role in social, political and economic development. In this regard the accessibility and quality of the education delivered to the youths will determine whether we are to compete globally or not. Notwithstanding this significant role, higher education has been confronted with many challenges. The COVID-19 catastrophe being the most recent challenge has triggered swift and unprecedented distraction across higher learning institutions, impacting learners and lecturers. Consequently, institutions of higher education had no option but to abruptly engage use of information and communications technology (ICT) to deliver their programs online as part of their immediate instructional and institutional response measures. These initiatives however noble have laid bare the digital divide among institutions of higher learning particularly the African continent. This then pauses a question on how higher education institutions in Africa, Kenya inclusive deal with the quality, inequities, access and other challenges arising from the abrupt widespread use of virtual teaching and learning? It is on this pretext that this theoretical study seeks to interrogate Virtual Learning and Teaching Paradigm Shift Implications on Access, Equity and Quality in Higher Education. This theoretical study will be grounded on the Classical Liberal Theory of Equal Opportunities advocated by Sherman and Wood. The study is vital as it is envisaged that the insights will enable universities identify areas in access and delivery of online education that create and reinforce educational inequalities and provide solutions to eliminate such disparities.*

**Key words:** *Virtual, Access, Equity, Quality Learning & Teaching.*

### **1.0 Introduction**

Higher education is the lifeblood at the heart of every nation's development owing to its fundamental role in social, political and economic development thus higher education is at the top of the food chain. In this regard the accessibility and quality of the education delivered to the youths will determine whether we are to compete globally or not (Patrick Loch Otieno Lumumba, 2020). Notwithstanding this significant role this sector plays, it has been confronted with many challenges. The COVID-19 catastrophe being the most recent challenge has triggered swift and unprecedented distraction across higher learning institutions, impacting learners, lecturers, and institutions. Owing to sudden outbreak of this pandemic, the negative ramifications of the virus on Africa's approximately two thousand institutions of higher learning cannot be overstressed. As per UNESCO, nine point eight million African learners as are encountering interruption in education owing to the cessation of institutions of higher learning to contain the spread of the disease. Consequently, institutions of higher education had no option but to alternatively engage in use of information and communications technology (ICT) to deliver their programs online for their learners as part of their immediate instructional and institutional response measures. Conversely, going virtual is not such easy on a continent where only twenty four percent of the populace has access to the internet, reduced connectivity, outrageous costs, regular power disruptions among other challenges (Wondwosen Tamrat & Damte Teferra, 2020).

These initiatives however noble have laid bare the digital divide among institutions of higher learning particularly the African continent: between those countries that boast of superior ICT infrastructure than others; between institutions



of higher learning within the same region, with some equipped better than others; and between learners within the same institution – the affluent who reside in metropolitan and the underprivileged in countryside who can hardly access or afford the internet. The majority of institutions of higher learning in Africa don't have the ability to copiously deliver all courses online. The limited open universities in the continent that have that ability, their priority is commonly mature learners, those in careers and willing to advance their training. Though substantial number of higher education institutions in Africa and Kenya have been affecting amalgamated learning (a blend of face-to-face and virtual learning) for the purpose of increasing access and enhance learning, barely any had intents for common face-to-face delivery to be wholly substituted. This then pauses a question on how higher education institutions in Africa and more specifically Kenya deal with the quality, inequities, access and other challenges arising from the abrupt widespread use of virtual teaching and learning? (Goolam Mohamedbhai, 2020).

Similarly, like other countries, Kenya's closed institutions of higher learning face the challenge of rolling out virtual learning for their enrolled learners and getting money for remuneration of staff and meet other monetary commitments at a critical moment when main income avenues are waning. (Gilbert Nganga, Maina Waruru and Gilbert Nakweya, 2020).

It is important to earnestly pursue substitute modalities for the purpose of not leaving behind learners with no access to ICT gadgets. The excruciating truth of the digital gulf on the continent and country has to be systematically and tactically mitigated: stretching out to marginalized learners ought to be of urgency. While this is gaining momentum in Kenyan universities like Kisii, Nairobi, Kenyatta among others, these institutions require to initiate a wide-ranging strategy and thorough complementary plan to ascertain that staff and learners utilize well the virtual podia (Woodwomen Tamrat & Dامتew Teferra,2020).

The COVID-19 catastrophe has offered a chance to reevaluate students' necessities and develop appropriate digital learning strategies thus enhancing delivery of high-quality and equitable online teaching and learning. For majority in the tertiary, the idea that almost each instructor could abruptly at some point of time be offering their programs on virtual mode appeared unlikely. But it has come to happen. Within no time as an outcome of the swiftly spreading virus, nearly each tertiary institution has either shut or swiftly switched from face-to-face teaching to virtual learning. For those relocating to virtual, the first aim was "make it run" for the sake of staying afloat (O'Keefe, Rafferty, Gunder, Vignare, 2020).

In spite of the average progress on virtual learning, studies on students, staff, and institutional preparedness for virtual learning lays it bare that mostly, staff and students have a challenge on how to efficiently scheme, develop, and deliver good quality instructions virtually to all learners. This requirement is the extreme for staffs at institutions helping underprivileged learners and first-generation learners, who are excessively impacted by the ongoing catastrophe as they have limited access to required infrastructure and technology (O'Keefe, Rafferty, Gunder, Vignare,2020).

As already indicated higher education is the lifeblood at the heart of every nation's development owing to its fundamental role in social, political and economic development. Notwithstanding this significant role this sector plays, it has been confronted with many issues. The COVID-19 catastrophe is the recent challenge. Thus, institutions of higher education abruptly and alternatively turned to use of information and communications technology (ICT) to deliver their programs online as part of their immediate instructional and institutional response actions. These initiatives are commendable but have exposed the digital divide among institutions of higher learning, chiefly the African continent. This then pauses a question on how higher education institutions in Africa and more specifically Kenya deal with the quality, inequities, access and other challenges arising from the abrupt widespread use of virtual teaching and learning? This is the gist of the matter to be unraveled in this study review.

The review was guided by the following enquiry questions:

- i. Which e-learning platforms are available for teaching and learning among higher institutions of learning in Kenya?
- ii. To what extent are faculty and students prepared for e-learning among higher institutions of learning in Kenya?
- iii. What policy recommendations can be formulated to mitigate the e-learning challenges experienced in utilizing the e-learning platforms among higher institutions of learning in Kenya?

The Visible Learning Theory whose proponent is John Hattie (2012) guides this theoretical study. Hattie underscores the essence of the learner and the teacher knowing what to do and how to do it in a teaching and learning process. For



Hattie teaching is visible when the learner is aware of what to do and how to do it. For the teacher learning is visible when he or she conscious if learning is taking place or not. Learning and teaching are visible when the learning aim is not only stimulating but is clear. Moreover, both the learner and instructor work in harmony to achieve the objectives, offer response, and establish if the learner has achieved the objective. The utmost effect of visible learning is evident when the learners assume roles of own instructors and instructors become students of their individual teaching experiences. In a productive classroom, both the learning and teaching are visible.

This theory is vital in assessing effectiveness of remote and virtual teaching in higher institutions of learning. It provides opportunity to suggest strategies on the kind of interaction in the virtual learning process between the instructor, the student and the setting. It further affords the rationale for crafting meaningful leaning experiences within the E-learning platform which is the bedrock of this study. As higher institutions embark on virtual learning amidst COVID-19 pandemic, the pertinent questions to ask is how visible is virtual learning? Do the teacher and the learner know what to do and how to do it in the context of virtual learning? This will be part of the engagement of this study.

Further the study is guided by Vygotsky's Social-Cultural Development Theory. The theory emphasizes that learning and teaching are extremely social undertakings and that communication with instructors, peers and teaching resources impact the affective and cognitive growth of students (Kim and Baylor, 2006). The model contends that learning is achieved when students interrelate among themselves, or have other social interaction. Students construct connotations with persons in the learning setting, and they accomplish aims by interrelating, both overtly and covertly, with the instructor, peers, resources, and atmosphere entrenched in the setting. This theory interrogates the recent initiated virtual learning platforms in higher institutions in terms of how interactive they are, conceptualized and designed with the view of inculcating essential paradigm changes that will enable the creation of rich virtual platforms which will motivate all students and assist them unleash their potential.

## **2.0 Methodology**

The study selected and reviewed empirical literature related to the study between 2005-2020. Further the study utilized document analysis as a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic (Bowen, 2009). The study collected information from published articles on virtual learning covering information about Kenya and other countries. The study employed a purposive random sampling strategy as it only reviewed articles that were concerned with E-learning.

## **3.0 Results and Discussion**

The study sought to review the impact of the paradigm shift implications of virtual learning on access, equity and quality in higher education, with a focus on higher education.

### **3.1E-learning platforms available for teaching and learning among higher institutions of learning**

While the importance of virtual program is anchored in its capacity to train everyone, anytime, anyplace, executing and supporting e-learning programs need more than just relocating teaching and learning online (Harris, 2002). The main impediment to the development of virtual studies is limited access to the essential technological infrastructure, as failure to access it there could be no learning (Naidu, 2003). Chaula et al. (2006) blames the minimal implementation of virtual learning in developing nations to cut and paste remedies borrowed wholesomely from the already developed nations whose orientations vary significantly from the developing nations. Nyerere et al. (2012) remarks that the adaptation of ICT in learning in Kenya is a recent phenomenon and on a lesser scope hence widening the access, equity and quality gap. This is owing to resources and infrastructural limitations.

Higher institutions of learning in Kenya are being tasked by the state to initiate virtual teaching and integrated learning as a substitute mode of delivery (Kenya Vision, 2030). Whereas virtual teaching and learning keeps on to improve in already developed nations, Kenya continues to encounter challenges in its execution, and that keeps on to expand the knowledge and digital divides (Ford, 2007). Nonetheless, presently, several mechanisms are in place in the country to execute virtual learning technologies in higher institutions of learning regardless of the several challenges.

The survey in many of Kenya's higher institutions of learning shows that there are indicators that many of these higher institutions are already engaged in virtual learning but mostly in integrated approach with face-to-face instructions. In the University of Nairobi for example, execution of virtual learning commenced in 2004 with a good-tested virtual learning platform known as Wedusoft (a framework of Chisimba). Kenyatta University initiated the virtual learning mode of teaching and learning in two thousand and five and presently using Moodle as a virtual learning platform.



Virtual learning programs have similarly been utilized at Jomo Kenyatta University of Agriculture and Technology as from 2006 with Moodle as virtual learning avenue. In Kisii University virtual learning through Big-Blue Button and Kenya Education Network (KENET) began in 2019 but was fast-tracked with the outbreak of COVID-19 pandemic. Enactment of virtual learning in Moi University commenced in 2007 with MUSOMI (customized from Chisimba framework) as a virtual learning platform. Conversely, as per Tarus (2011), use of virtual learning in Kenya's higher institutions of learning is still at the developing stage. Nonetheless these institutions have achieved substantial milestones in adopting virtual learning as an alternate mechanism to facilitate learning, slight improvement has been achieved in its execution. Many higher institutions of learning in Kenya are utilizing virtual learning in integrated mode and have lagged behind in full utilization of e-learning consequently disadvantaging many students especially during the COVID-19 pandemic.

### **3.2 Faculty and Technical support preparedness for Virtual learning in higher institutions of learning**

In spite of increase of virtual learning, studies on learner, institutional and educator's preparedness for virtual learning reveals that faculty and universities require more support to comprehend how to competently develop, design, and deliver quality instructions virtually. This necessity is much required for faculty at universities handling low-income learners, first-generation learners, and vulnerable learners who are possibly unduly victims of the present predicament as they fail to access the required resources and technological infrastructure. The common response to COVID-19 pandemic by almost all universities was instant change of nearly all courses to entirely virtual setting, however several faculties were not equipped to teach virtually. Higher education institutions embarking on such crucial change will require to offer substantial and continuing help to lecturers and tutors. As already mentioned, the COVID-19 disease is putting pressure to several higher institutions to tersely and expansively implement virtual learning as a substitute to face-to-face lessons, in an attempt to reduce the spread of the disease. Lecturers, learners, and non-teaching staff are all striving to embrace this huge transformation. EDUCAUSE study on learner, staff, and institutional willingness for virtual learning reveals that there is need for thorough preparations on this category of people (Christopher Brooks & Susan Grajek, 2020).

Studies done in several institutions in Kenya have shown that many of them have not efficiently adopted and utilized ICT to assist teaching, learning, and management as envisioned (Manduku, Kosgey, & Sang, 2012). For Salmon (2004), concentrating training on the technological aspects of the virtual system is the single first step towards achievement; the major issue is training for transformation in pedagogy. A research carried out in Zimbabwe revealed that more than half of the faculty (97.5%) engaged in virtual learning lacked knowledge in virtual learning (Mpofu et al., 2012). Operative utilization of virtual technological infrastructure requires that educators be correctly skilled and knowledgeable in handling virtual education as a method of delivery. To this era in the 21<sup>st</sup> century, only a small number of African faculty members are acquainted with knowledge and skills of facilitating virtual programs. This scenario creates a complex situation in good efforts geared towards developing e-learning education in the African continent. Ssekakubo et al. (2011) remarks that several students in developing nations are not exposed to various Information Communication Technology remedies and additionally notes that the mainstream Learning Management System (LMS) executed in Sub-Saharan nations tend to flop. This flop is ascribed to several hurdles to virtual learning among developing nations. The lack or insufficiency of technological infrastructure is an obstacle towards access for learners in developing nations.

The internet access rate among developing countries is thirty-one per cent (31%) as opposed to seventy-seven per cent (77%) in the already developed countries. Internet access rate in African continent is scarcely at sixteen per cent (16%) (Global Internet Usage, 2013). Blinco et al. (2004) accentuates that virtual learning achievement is contingent upon the crucial prerequisite of educators and learners possessing appropriate technical skills to utilize virtual tools efficiently. Hollow and ICWE (2009) in their report review of one hundred and forth seven (147) virtual practitioners from thirty-four (34) nations in African continent noted that virtual learning is on growing although few facilitators are trained extensively on its usage. As per Tarus (2011), execution of virtual teaching and learning is stagnated at the initial stages in several higher education institutions in Kenya owing to numerous challenges associated with implementation. These challenges majorly include pedagogical, organizational and technological. Walimbwa (2008) notes that in spite of virtual learning expanding exponentially globally, East African universities are yet to fully embrace it. This research was based at University of Nairobi, Makerere University and University of Dar es Salaam. It was demonstrated that insufficient human capacity and inadequate skills was a factor to small scale virtual execution. Insufficient Internet bandwidth and no policy harmonization were part of noteworthy factors that were hampering virtual learning from expanding in universities.



Similarly, research by Kasse and Balunywa (2013) assessed the execution of virtual learning for universities in Uganda specifically Kampala International University, Makerere University Business School, Makerere University, Islamic University, University of Kampala, all in Uganda. The justification for the selection of these universities was anchored on the justification that they are the highest-ranking higher institutions in Uganda on the basis of ICT adoption, student population and quality of education. Their research exposed key technical and infrastructural ineptitude, and attitude-based challenges (by faculty and learners) that hindered full-scale execution of virtual learning in these higher institutions of learning. Part of the infrastructural issues encompassed unavailability of Internet connectivity and lack of electricity. Naidu (2006) remarks that in the matter of virtual learning, student assistance is vital, as students become detached in place and time from the lecturer and the institution. Likewise, sufficient technical assistance is a significant component of the execution and incorporation of ICT and virtual learning (Sife et al., 2007). Romiszowski (2004) remarks that virtual learning poses a completely novel learning setting for learners, therefore needs distinct skill set to be fruitful.

#### **4.0 Policy recommendations to mitigate the E-learning challenges experienced in utilizing the e-learning platforms among higher institutions of learning in Kenya**

Kenya national ICT policy approved in the year 2006 purposed to ensure the accessibility of effectual, dependable, inexpensive and accessible Information Communication Technology services in the entire nation. The policy says that the Government of Kenyan will boost the utilization of ICT in educational institutions across the country for the purpose of enhancing quality, access and equity in education. Similarly, the Kenya Education Sector Support Program (KESSP), established in the year two thousand and five by the Ministry of Education (MoE), gives priority mainstreaming Information Communication Technology into the learning and teaching process. Though this is the plan, a national virtual learning education policy for guiding execution is yet to be established in Kenya. The ensuing are the possible policy strategies that the review recommends that higher institutions of learning could undertake to remedy the challenges of access, equity and quality in higher Education in Kenya occasioned by virtual learning:

- i. Effecting mandatory ICT and virtual courses in institutions of higher learning curricula for all learners at the first-year courses of studies to empower them with Information Communication Technology (ICT) skills will be significant.
- ii. Partnerships with like-minded successful virtual learning associates in an effort to attain finest competencies to hasten the execution of virtual learning as well as reduce duplication of resources. Collaborations can be encouraged in components like drafting and sharing of virtual content and other virtual equipment, financing, capacity building, and virtual learning infrastructure improvement. Utsumi (2005) observes that, the benefits of collaborations encompass conjointly remedying educational and developmental obstacles, consolidation of human and technical capacity prowess for learning, teaching, and research.
- iii. Institutions of higher learning should identify modalities of encouraging the faculty to utilize virtual learning and change their subject content to virtual either by means of promotions, financial incentives among others. Applicable and high-quality virtual content is key to success of virtual learning.
- iv. Institutions of higher learning should make it obligatory for every learner to report with a laptop during admissions to enable them augment their Information Communication Technology mastery as well as enhance accessibility to virtual teaching and learning. Universities can negotiate with their business support partners to lower prices of laptops for their students. A study by Ndume et al., (2008) in Tanzania established that lessening of taxes on technological products had assisted a substantial number of learners to buy their own individual laptops.
- v. Prioritizing of ICT budgetary allocations alongside other university core activities. Kamba (2009) while surveying the status of virtual learning in 18 selected universities in Nigeria he revealed that implementation of virtual learning was hampered by low key investment and absence of commitment to grow virtual learning softwares.
- vi. Internet service suppliers to institutions of learning like the government owned Kenya Education Network (KENET) ought to reduce what they charge in terms of Internet bandwidth to make it cheap by institutions of higher learning. This can be made possible through more bandwidth cost subsidy by the state to institutions of higher learning through KENET. Sufficient Internet bandwidth will assist quicker Internet connectivity, hence enabling stress-free access to virtual learning. Walimbwa (2008) notes inadequate Internet bandwidth and absence of policy synchronization are key components that hamper virtual learning from expanding in higher institutions of learning.



- vii. Drafting of suitable and operative virtual learning policies to guide the Kenyan institutions of higher learning towards successful execution of virtual learning.
- viii. Wide-range in- service of faculty and technical staff on virtual learning skills in higher institutions of learning is key.
- ix. Growth of Information Communication Technology and virtual learning infrastructural facilitates could hasten easy access to virtual learning by students and faculty through distribution of more resources towards ICT infrastructural expansion. Accessibility to networks, laptops, computers, and other applicable technological infrastructural components will bridge the equity and quality gap. Naidu, (2003) remarks that the major impediment to the expansion of virtual learning is absence of access to the essential technological infrastructure.
- x. As a starting point institution of higher learning should adopt integrated learning approach and pilot with few faculties before execution of full-scale virtual learning. Awidi (2008) observes that developing a virtual learning setting that is maintainable for universities needs trailing an integrated strategy from initial stages.
- xi. Each institution of higher learning ought to create technical support staff at every faculty to constantly work with course content designers to make them more collaborative and inspiring.
- xii. Universities' senates that haven't yet approved virtual learning policies for their respective universities ought to hasten this process to allow the execution of the same in their institutions.
- xiii. The MoE in Kenya ought to develop and execute a virtual learning strategy for their institutions.

## 5.0 Conclusion

Efficacious execution of virtual learning at higher institutions of learning is perceived as a long-term stratagem in Kenya Vision 2030. Execution of virtual learning alongside other policies for education in Kenya Vision 2030 is projected to address the strategic areas, namely quality, access innovation and technology. The vision for the education sector for 2030 is "to have internationally competitive quality education, training and research for sustainable development" (NESC, 2007).

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