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Baseline Survey on Software and Tools for Odel and Digital Learning during and Post Covid 19 in Selected Universities in Kenya

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Abstract: One the mitigating measures adopted against the spread of COVID-19 was closure of business, suspension of face to face learning in institution of learning in Kenya and cancellation of international flights worldwide. There was also enforced locked down within highly infected areas. To survive educational institutions adopted mainly online/digital learning. In this paper we provide findings on a survey conducted in selected eleven universities in Kenya on the status of the soft wares and tools that facilitate online/ digital learning. The finding indicate that even though the universities had adopted blended learning the soft wares and tools are still a challenge. The Paper recommends the need of the institutions to enhance the acquisitions of tools and soft wares for an enhanced digital learning and inclusion..

Keywords: Software, Tools, Digital learning, Digital Inclusion, Covid-19

1. INTRODUCTION

in March 2020 the face to face education system in Kenya and in most parts of world was brought to halt as mitigation measure against the spread COVID-19 pandemic(E.I. Omwenga ,P.M.F. Mbithi, J.N. Muthama ,J.M.Chone[1]. The disruption of education calendar, put a stake graduation and progression of students. For most Universities student fees are the main source income to fund University activities, the disruption of student on campus stay resulted in a financial strain to the Universities. Digital and online learning then became the silver bullet towards these problems. The paper then sought to carry out a survey on status of softwares and tools required in Digital and online learning sampled eleven Kenyan Universities.

2. METHODOLOGY

A research methodology is guide on methods that will be used to collect Data, analyze and interpret the findings. In every research the need for good quality Data cannot be overemphasized if for output to have integrity. Surveys which are manual and electronic are most common mode of data collection. Three major methods of collecting survey data electronically are computer administered surveys, electronic mail surveys, and web surveys (M. S. Nayak,, K.A. Narayan, [2]. For this research the survey research design was adopted, where a set electronic mail **questionnaire forwarded into the** participating Universities. This mode allowed research to abide with COVID_ 19 protocols. Descriptive statistics were used in analysis of the data. Data was presented using bar charts and pie charts

3. RELATED STUDIES

Mbithi P.M.F. and Omwenga E.[3] did submit a proposal how Universities could be supported to mitigate the Challenges of Covid-19, Especially in Areas Of Digital Learning (ICT Infrastructure. They sought funding, on behave of 11 Universities from the African development bank to bridge identified gaps in present education systems.

In Position paper on ICT Infrastructure Development Funding Support as a Strategy for Public Universities overcome the Challenges Of Covid-19 by G.N. Chemining, S.M.Mbuguah, B.M Sanda, M.A.Elimi , A.H. Mohamed A.A.Hared, C. Oduor. D.N.Kamsingi [4], was submitted to the Kenya School of Government. They proposed a marshal plan to fund ICT infrastructure. They aver that forced closure of the universities resulted in universities being pushed into online learning without adequate notice and preparation They suggest that universities especially public university are experiencing reduced capitation from exchequer and reduced number of

students, leading to the universities becoming insolvent. They vouch for Government of Kenya find a funding to university to improve on ICT.

In a study carried out by Ngwacho A.G.[5] on impact COVID-19 Globally, and in Kenya, it was found out that economic growth has been and will be negatively affected by COVID-19 whose negative effect was felt by the poor, vulnerable and marginalized households who rely on informal employment and businesses to fend for their children. The study infers that the ability to finance school related expenditure such as school kits, meals, learning materials has been s compromised by the pandemic. The study concludes that the Government adoption of remote teaching to support distance learning and online education delivered through ICT will increase the digital divide to , leaners from poor, vulnerable and marginalized household.

In a study carried out by Kathula.D.N[6] on the effects of Covid-19 students, teachers and parents It was found out that parents and teachers especially in private schools lost their jobs or source of livelihoods. That most of the students were not able to access online learning due to lack of electricity, lack of learning materials and some were even forced to relocate to the country side. The study hence concludes that as a result of the challenges presented by the coronavirus and the likely impact of future pandemics the government's ability to ensure continuation of learning will depend on the ability to swiftly harness available technology, provide adequate infrastructure and mobilize stakeholders to prepare alternative learning programmes

On a study carried out by Lugonzo, H[7]. on online education and distance learning which has been implemented by the Kenyan government through the Ministry of Education it was found out that it does not allow learners to have a personal relationship and intimate interaction with the online teacher. Also online teaching do not favor such learners as most of them do not have access to mediums like smartphone, internet connectivity, computers, televisions, radios, among others. The study posits this has widened inequality in access to relevant quality education by such disadvantaged learners. The study suggests the need a strategy to determine mitigation measures (

A study was carried out carried out by E.I. Omwenga ,etal.(2021).… on the perception of impact of COVID-19 pandemic on diverse aspect of teaching and learning in Kenya. The study found out that Students were concerned with internet connectivity, computing devices and electrical power. While teaching staff were mainly concerned with access to the teaching resources, conducting online teaching, capacity to handle the online mode of teaching, devices and eContent development. The study infers that the pandemic has exposed the shortcomings of the current higher education system and the need for enhanced policy formulation and implementation on digital infrastructure to adapt to the rapidly changing education ecosystem of the world

Mbuguah SM, Njuguna A. Makokha J. and Njoki C.[8] have also written a paper on baseline survey baseline survey on an ICT infrastructure for Odel and digital learning during and post COVID 19: The paper concentrated more on hardware aspect and conclude that most institution are lacking the necessary infrastructure and recommending that Government should move in to fund the financially challenged institutions.

4. FINDING AND DISCUSSION

In this section an analysis of feedback of each question is presented and discussed.

4.1 Findings

(I) On the question which mode is used to offer your courses? All the respondent said Blended =16. The implication is that each of sampled university and adopted some form of digital learning.

(II) All the 16 participants' respondent with a yes to the Question Does your university have a learning management systems? This means all university geared towards digital learning.

(III) On the question on whether university has Student information system. The response by all the participant was Yes. The implication is that university are e-ready.

(IV) The response to question does your university have the Content management systems? The response was Yes = 15, No = 0 and Blank = 1. For the response it means that the university are in a place to create content suitable for digital learning.

(V) On the question on whether your university has the Plagiarism detection software? The response was Yes = 14, N0 =1 and Blank =1. This implies that universities are set to monitor content of student work to ensure that it can stand the test of integrity and ensure quality of the students work.

(VI) On question does your university have the Software Exam proctoring software? The response was No= 10, Yes =5 and Blank= 1. The response to this means that most universities have challenge offering online examination. There is need to facilitate them otherwise the university have to result to blended learning.

(VII) On the question does your university have Monitoring and Quality assessment tools? The response Yes = 12, NO = 3 and Blank =1. The implication of the result is that most of universities take quality of their program and graduates seriously. However there room for improvement.

(VIII) On the question does your university have the Helpline for e-learning? The response was NO =4, YESs =11 and Blank =1. Most of the Universities are set to assist their students remotely. But all university should have a help system to ensure that digital learning is friendly and effective.

(IX) On the question on whether these systems are integrated?. The response was Yes =7,No =8

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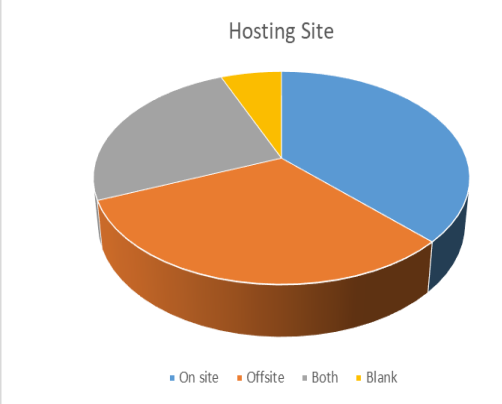
andBlank=1. The implication is that 50% have system that are not integrated which means hat systems cannot seamlessly interact, this is hindrance to effective digital learning.

(X) On the question on whether monitoring of Lecturers and student engagement on the LMS is done? The response was Yes =13, No =2 and Blank =1. From the responses most of the university keep in touch with progress of students and execution of learning process.

(XI) On the question which LMS do you use in your institution for e-Learning? The response was Moodle = 13, Google classroom =1 and Blank = 1. From the responses it appears that Moodle is the most popular LMS

(XII) On the question where these systems are hosted? The response was On site = 6(38%), Offsite = 5(31%) , Both = 4(25%) and blank =1(6%). From the responses it appears there is no preferred site of hosting the system.

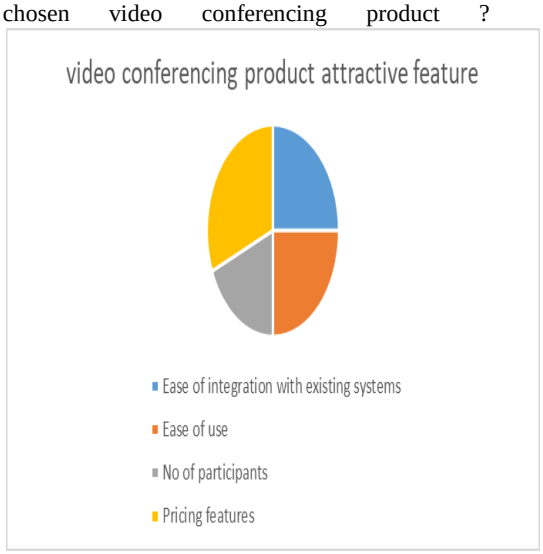


(XIII) On the question on whether the University had a premium video conferencing account(s)? The response was No =7 and yes=9. The response to this question means there is still room for improvements as far as video conferencing is concerned.

(XIV) On whether teaching staff have access to or have accounts to use Premium video conferencing platforms? The response was Yes =11and N0=5 . Most respondents have premium accounts.

(XV) On which video conferencing tools used by your University? The response was Zoom =11and Google meet = 5. In this case it appears that Zoom is most preferred video conferencing tool.

(XVI) On question of what most attracted you to your chosen video conferencing product ?

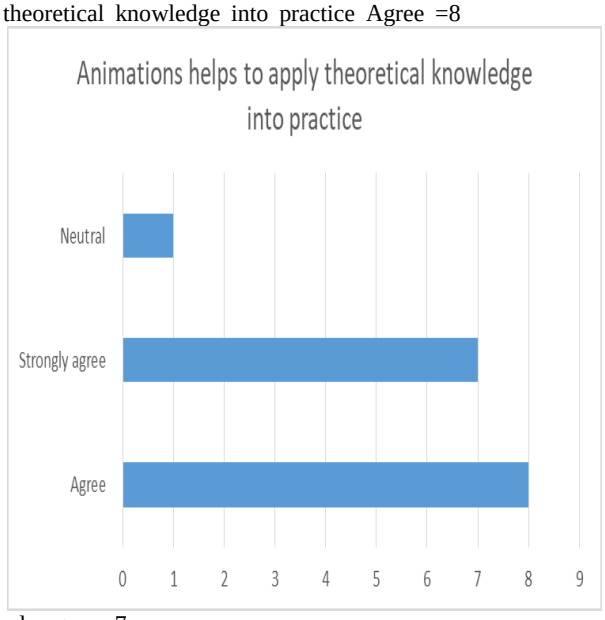


(XVII) Ease of integration with existing systems = 4(25%)
Ease of use = 4(25%)
No of participants = 3(19%)
Pricing features = 5(31%)

From the responses it appears there equally valid reasons for selecting the video conferencing tool but pricing features appear to have a slightly higher impact.

(XVIII) On the question do you use virtual Lab tools for teaching practical lessons? The response was Yes= 4 and NO =12. From the responses then it implies that most university are not ready for virtual labs and hence the labs for now will have to be physical. However there is need for institution use virtual labs.

(XIX) On the extent to which you Strongly Agree/ Agree/ Disagree/ Strongly Disagree /Neutral with the statement Animations helps to apply theoretical knowledge into practice Agree =8



Strongly agree =7

Neutral =1

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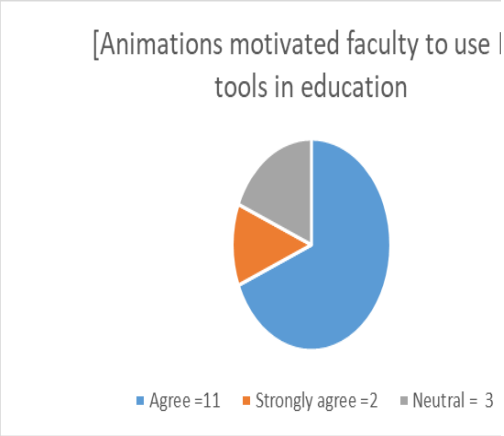
From the responses it appears that the respondent consider animation as a valuable tool in digital learning

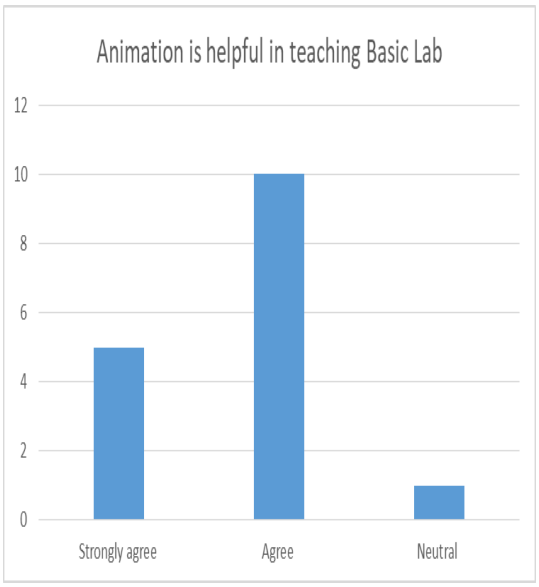
(XX) On the question Please rate the extent to which you strongly Agree/ Agree/ Disagree/ Strongly Disagree /Neutral with the statements Animations motivated faculty to use ICT tools in education. The response was Agree =11(69%), Strongly agree =2(13%) and Neutral = 3(19%)



From the respondent do appreciate use animation motivated staff to use ICT tools.

(XXI) Please rate the extent to which you Strongly Agree/ Agree/ Disagree/ Strongly Disagree /Neutral with the following statements. [Animations is helpful in teaching basic lab techniques easily with standardized protocols and enhance, intensify and motivate

Strongly agree = 5
Agree =10
Neutral = 1



online online

Most of staff agree that animation can help in teaching basic labs

4.2 Discussion

From the findings it appears that most of the selected Universities have the necessary basic soft wares and tools to engage in digital learning. The main drawback is lack of an examination software to conduct online examination. This means for most universities examinations will have to be physical, in order to ensure the quality and integrity of examination process. This is a challenge. Another observation is that most universities were not exposed to virtual labs. Hence the Labs will have to be physical which is a challenge during lockdown. However, most staff are well aware that even animation could lead to transfer of knowledge as would be the case of a live experiment. To enhance, efficiency the systems should be integrated.

5. CONCLUSION AND RECOMMENDATIONS

The researchers do conclude the most of the sampled universities to have the appropriate softwares and tools to facilitate digital learning and are involved in blended learning. The sampled universities adopted fast to the learning challenges due to COVID-19 pandemic. Even though the transition and graduations of student was delayed but it did happen. Most of the universities adopted blended learning as the new normal. However there challenges in conduction of online examination and laboratories. The systems are also not fully integrated.

The researchers do recommend that universities find strategies of acquiring Exam proctoring software which will assure the quality and integrity online examination. There is need for university to invest in virtual labs to allow practical's to continue even during lockdown. They will enhance transition and graduation of students. There is also need for integrated system to allow effective and efficient seamless flow of the various soft wares available.

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