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The Effectiveness of Learner Support Services in Blended Learning and Its Influence on Quality of Education in Kenya's Public Universities

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Abstract
Developed economies have considered increased investments in education as one of the key drivers of improving their productivity. The shift in the global world towards digitization of all sectors has not left education sector behind. The change of pedagogy in education instruction and assessment by using Information Communication Technology (ICT) means is the main paradigm shift in education globally in the last decade. Blended learning is the fusion of online instruction or assessment into the traditional lecture. The quality of education is assessed by the use of indicators that are preset at the input, process or output levels. Research has shown that if the indicators at the input and the process levels are achieved, then the output will be of good quality by implication. The emergence of Covid 19 made the use of blended learning in delivering education content be accelerated. The universities in different parts of the world, Kenya included were not ready for this new shift of pedagogy. Kenya's development blue print – *the Kenya Vision 2030*, proposes blended learning as one of the development agenda to be achieved by the year 2030. The Commission for University Education (CUE), Kenya as a body mandated in ensuring that education offered in the universities is of good quality came up with the *universities standards and regulation 2014* where Schedule IV deals with Open Distant and e-Learning (ODeL). This schedule highlights the main indicators to be assessed for quality education offered in blended learning. The study therefore aimed at assessing the effectiveness of learner support given to students in Kenyan public universities when adopting blended learning. To check on the learner support offered by Kenyan public universities when offering education in blended learning, the study focused on looking at the training of students on how to use the Learning Management System (LMS), whether the students have a training in computer course, whether the universities offer internet bundles while on-campus or off-campus and the level of engagement with the lecturers and course content on the LMS. The study used descriptive cross-sectional survey research design and was guided by Human Capital Theory under theoretical framework. The target population was Kenya's public universities students, lecturers or directors of digital schools. The study adopted a cluster and stratified sampling technique to get the responses from students and lecturers and purposive sampling for directors of digital schools. Questionnaires and interview schedules were used as research instruments. Data analysis was done using SPSS version 25 and output presented in frequency tables, percentages, bar graphs and pie charts. Data was collected in 29 Kenyan public universities where 384 students across all the years and course programmes and 354 lecturers participated. The study found that students were trained on the use of LMS either through webinars or by self-directed modules. Majority of the students had done basic computer course before joining university while others did the course after joining the university. The study also found that Kenyan public universities did not give internet bundles to students while on campus or off campus and the level of interactivity in the LMS was considered low. The study concluded that learner support services were not well implemented and recommended a policy change. The study also recommended that the universities need to undertake a basic computer course before online teaching is started in first year of student admission in the universities. The universities also need to adjust their budgetary allocation to offer internet bundles to students while on campus to be used in areas where Wi-Fi is absent and while off campus in hostels or their homes.
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1.0 Introduction

Education is considered as one of the key elements of economic growth and development. Developed economies in the world have made huge investments in education with its digitization being one of the developments in the last decade (World Bank, 2016). On a study on 'Blended Learning for Quality Higher Education: Selected Case Studies on Implementation from Asia-Pacific,' countries that infused technology in teaching and learning process had a progressive impact on their Gross Domestic Product. The countries that were under study were from East China, West Australia, Malaysia, Hong Kong, Republic of Korea among others (UNESCO, 2017). Increased rise in internet connectivity and usage, increased use of social media and mobile devices have made

the world a global village (UNESCO, 2018). Integration of Information Communication and Technology (ICT) in education has impacted on quality of education offered in universities and other institutions of higher education (World Bank, 2016). Quality of education in universities and institutions of higher education is the process of getting the best experience with a positive impression (Mishra, 2007). In a conference in 2018, UNESCO came out with a declaration that tertiary education that is offered on ICT platforms has a better quality than that on traditional one if the learner support is well managed and on integrated policy that is ratified by the respective university's governing council as either senate or otherwise (UNESCO, 2018).

Blended learning has been defined as the fusion of online and traditional face to face lecture in the same course or programme with an aim of improving the quality of the offered education (UNESCO, 2017). A report on a study focusing on 'Measuring Quality of Education in an Online Instruction and Assessment of Educational Content,' (Esfijani, 2018) reports that defining quality of education that is offered on online mode varies comprehensively. These diverse means indicate the various stakeholders' perceptions as envisioned on faculty performance and learner support. A similar study on 'Quality in Higher Education from Different Perspectives; A Literature Review by (Kundu G.K., 2017) supports the similar ideologies on the definition of quality of education. The technical team available to support students on LMS related challenges are not adequate enough to help on the issues at hand meaning that the learner support system is poor (Makokha and Mutisya, 2016). The step by step instruction and troubleshooting is essential for quality education to be realized in blended learning (Davis and Fill, 2007; Lim and Wang, 2017).

The increased enrollments in the Kenyan public universities has caused the lecturer-student ratio go high and also led to increased part time teaching in the universities. These undertakings have led to the quality of education being low due to poor learner support from the faculty members (Republic of Kenya, 2012, 2023). When Covid 19 affected the entire world, many universities closed and education systems were haltered. The learners were then facilitated with internet bundles while their ICT training was unknown. Anecdote evidence show that public universities in Kenya have poor internet connectivity in their campus and do not give students internet bundles while off campus. Commission for University Education (CUE) Kenya has been mandated by the government of Kenya to ensure universities provide quality education. The Commission has come up with 38 standards and the relevant regulations on Schedule IV under the *Universities Standards and Guidelines, 2014* on Open Digital and e-Learning. Part of these standards include how students are to be supported on LMS issues through call centers and other support avenues (Commission for University Education, 2014).

When Covid 19 came in 2020, many universities in the world were closed, Kenyan institutions not excluded. Online teaching was inevitable making blended learning a new normal. Even when the pandemic was over, universities continued to offer education using this new pedagogy where universities developed their own support structure for students and lecturers. The universities did not have data on how many of their students had done a computer course, induction on LMS had not been done and internet bundles had to organized for students who were off campus. Use of social media platforms were considered more appropriate because little training was needed by the students as found on a study on 'Use of Social Media Platforms and Content Delivery in Higher Education,' Gichuhi et al. (2020). This study found that both students and instructors in the universities use various social media platforms like WhatsApp platform, YouTube or Facebook to do teaching learning process. The learner support in Kenyan public universities is not well documented to show if universities are giving data bundles to students while on campus or off campus, to identify whether the students have been trained on how to use LMS or whether they have undertaken a computer course to enable them use ICT in the learning process. These gaps on learner support indicators dictates the requisite to investigate the level of student support in embracing ICT in education and its influence in the quality of education that is offered in Kenyan Public universities.

1.1 Statement of the Problem

In the post Covid 19 era, blended learning has been embraced in Kenyan public universities among other universities in the world. This is because of the capability of ICT to promote quality of higher education in the respective institutions (UNESCO, 2017). In a study on 'Status of E-Learning in Public Universities in Kenya,' (Makokha and Mutisya, 2016), learner support on blended learning was not extensively investigated and instead e-learning processes were considered. The enrollments in the universities have been going up (Republic of Kenya, 2018, 2020, 2023), and the learner support system needs to be checked especially with the new pedagogies that are ICT compliant being embraced. There is very little information on the entry behaviors of students in terms of their ICT compliance and the universities offer of internet bundles to students when off campus or on campus but away from the internet hotspots. The missing report on the in CUE's published reports on the set *Universities standards and guidelines (2014) Schedule IV* needs to be bridged to evaluate how students are supported in relation to the preset standards by the body that checks on the quality of university education in Kenya. The preset principles that govern the ODeL standards in Kenya needs to be evaluated to ensure that the education offered using the emerging pedagogies where blended learning is part of it has proper student support

on ICT issues (Commission for University Education, 2014). Due to these gaps, the study sought to investigate the effectiveness of learner support services in blended learning and its influence on quality of education in Kenya's public universities.

1.2 The purpose of the study

This article is part of the study on 'Influence of Blended Learning on quality of education in Kenya's Public Universities.' The main objective of the study was to investigate the effectiveness of learner support services in blended learning and its influence on quality of education in Kenya's public universities. The study was guided by the following questions;

1. Are students in Kenyan public universities trained and supported through troubleshooting on Learning Management System (LMS)?
2. Are the students having a training course in computer before or after joining the Kenyan public universities?
3. Does Kenyan public universities offer the internet bundles while on-campus or off-campus?
4. What is the level of engagement of students in the ICT platforms with either fellow students, lecturers or course content in Kenya's public universities?

2.0 Literature review

Students in the universities need to have a basic computer course before induction on LMS use. This will make the troubleshooting manageable when they have issues on the system. Learner support entails interventions on technological difficulties coming from a system use when teaching – learning process is in progress (Wang, Han and Yang, 2015). The support is made complete when the students are able to overcome these challenges and be able to effectively communicate using ICT platforms. This is very crucial in achieving quality education as offered using blended learning (UNESCO, 2017).

A study conducted in Palestine on 'Students' Readiness Towards E-learning. A Case Study of Virtual Classrooms for Secondary Education in Palestine,' Khitam Yousuf Shraim & Khlaif, (2010) found that 75% of learners under study did not have the basic ICT knowledge and skills for adopting blended learning. Due to this gap, learner support was not possible because they required the presence of ICT experts throughout the learning time which was not practical. This made blended learning and e-learning mode of instruction fail due to poor quality of education offered then. Computer knowledge is therefore a main and compulsory element in blended learning so that students can manage the use of e-gadgets and system proficiency appropriately (Selim, 2007; Bashorun *et al.*, 2016).

When the students are trained on basic computer applications, the quality of education that will be offered will be high (Bashorun *et al.*, 2016). Students in the 21st century have been labeled as being 'digital' due to their ability to use internet for entertainment and social media interactions (Prensky, 2001; Wang, Han and Yang, 2015). Studies done on 'Digital Natives, Digital Immigrants Part 1' and 'Revisiting the Blended Learning Literature: Using a Complex Adaptive Systems Framework, ' found that ability for students to use their devices for entertainment and social media interactions are not related to their use of the same gadgets for educational instruction purposes (Prensky, 2001; Wang, Han and Yang, 2015).

Stability in internet connectivity is a key ingredient in offering quality education through ICT facilitated platforms (Selim, 2007; Asio *et al.*, 2021). A study that was conducted on Critical Success Factors for E-Learning Acceptance: Confirmatory Factor Models found that the success of education is dependent on stable and strong internet connectivity provided to students. Education that is offered on ICT platforms is highly dependent on the stability and consistent supply of internet services to the students (Selim, 2007). In a similar study on Internet Connection and Learning Device Availability of College Students: Basis for Institutionalizing Flexible Learning in the New Normal, students being provided with data bundles by the respective universities while on campus or off campus form an integral part of quality education to be offered (Asio *et al.*, 2021). The students' adoption in internet usage either through Wi-Fi or data bundles have no gender biasness as indicated in a study on Online Students: Relationships between Participation, Demographics and Academic Performance (Coldwell *et al.*, 2012).

Student interactivity when using LMS in terms of how often they maneuver in the educational content in the system, ability to use break outs when in synchronous class is important in the effective implementation of blended learning (Achahbar and Khoumssi, 2023). The collaborations built among students, between students and lecturers or by spending more time with education contents that has been uploaded on the LMS forms the general description of enhanced interactivity that impacts on the quality of education that is offered (Donnelly, 2010; Achahbar and Khoumssi, 2023). The design of the LMS should by itself promote interactivity because as the interactivity improves, the quality of education offered using the ICT based platforms will be enhanced (Commission for University Education, 2014).

2.1 Theoretical Framework

The study was guided by Human Capital Theory that was proposed by Gary Becker in 1964 and later developed by Debrulle in 2014 and later by Wuttaphan in 2017, (Debrulle, Maes and Sels, 2014; Wuttaphan, 2017). The theory indicates that investments education for human beings have a direct positive correlation with economic growth and development through increased productivity. Increased development in ICT and in modern education pedagogies impact on the productivity and efficiency of the economy's growth.

3.0 Methodology

Descriptive cross-sectional survey research design was adopted to guide the study. This design was advocated for due to its ability to measure various indicators that depict the learner support when using blended learning at a given period. The design was also used due to its numerous advantages especially when collecting huge data at a cost-effective manner (Mwituria, 2012).

3.1 Target population, sample size and sampling procedure

The study was conducted in 31 public chartered universities as listed by CUE in the year 2020. There were 448,482 students, 13,267 lecturers and 31 directors of digital schools making the total population under study as 461,780 (Republic of Kenya, 2023). The Krejcie and Morgan (1970) model that was later adopted by Memon et al. (2020) was used to come up with the study target population at 95% confidence level.

The study sample size was therefore 384 students and 31 directors of various digital schools or their representatives. Cluster sampling was used together with stratified sampling to get the respondents from students while purposive sampling was used in getting respondents from the 31 directors of digital schools. Interviews were booked in advance through the directors of digital schools. After the interview was conducted, the students were given questionnaires to fill. The questionnaires were then picked the same day and sought for completeness before moving to the next university.

3.2 Research instruments, their validity and reliability

Data from students and lecturers was collected using questionnaires and interview schedules to get the data from the directors of digital schools. Questionnaires were considered due to their capability of collecting huge data within a short period of time (Mwituria, 2012). The two instruments were subjected to content validity where subject experts in economics of education reviewed them before they were administered to ensure that they measure the intended need (Orodho, 2008; Mugenda and Mugenda, 2009). Piloting was done in five universities to ensure that the data collected was consistent. Random error method was used where there was no error that arose meaning that the data was reliable for the study (Mugenda and Mugenda, 2009; Bell, 2010).

3.3 Data analysis techniques and ethical considerations

After the collected data was sorted, coding was done and then entered on SPSS for analysis reasons. The results were then presented using frequency tables, pie charts and bar graphs. Ethical clearance was sought from Kenyatta University Ethics Review Committee (KUERC). When collecting data, Covid-19 measures were adhered to which included sanitizing, maintaining social distance and wearing a mask.

4.0 Results and discussions

The various indicators of learner support which included training on basic computer application before or after joining university, the appropriate induction and continuous support on LMS use, the level of interactivity on the LMS, availability of data bundles and internet connectivity generally were evaluated and results presented. Results were presented as done on other similar studies on 'Blended Learning for Quality Higher Education: Selected Case Studies on Implementation from Asia-Pacific' (UNESCO, 2017).

4.1 Kenyan universities training on how to use LMS

The students were asked whether they were trained on LMS use after joining first year. The findings are presented in Figure 1 below.

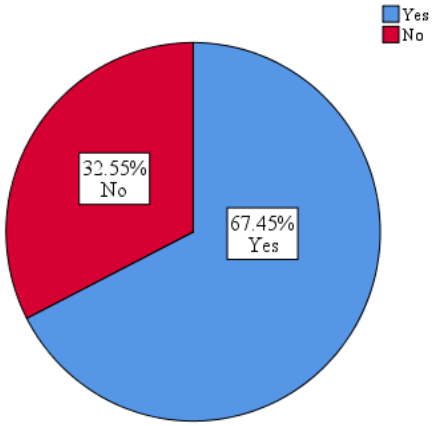

Figure 1. Training of Students on LMS Use

From the sample, 65.45% of the respondents indicated that they had received basic training through webinars, or self-directed modules on how to create their account and navigate in system. Another group of 32.55% said that they were not engaged on any formal training on how to use LMS and they learnt about the system from the modules sent to them by other students and training done by other students. This was attributed to late reporting and absence of some students when training was being conducted. These findings were similar to those found on a study on 'Professional Development for Blended Learning in a Faculty: A Case Study of the Education University of Hong Kong,' Lim & Wang, (2017) which found that students were trained on how to use LMS. However, in this similar study, those who reported late were enrolled to another class to be trained due to the need for LMS training in supporting the learners to use blended learning in quality education achievements. This make-up class was missing in the Kenyan context and impacted the implementation of blended learning negatively.

4.2 Students in Kenya public universities undertaken a computer course

Students in Kenyan public universities were asked whether they had done any computer course. The findings are presented in Figure 2 below.

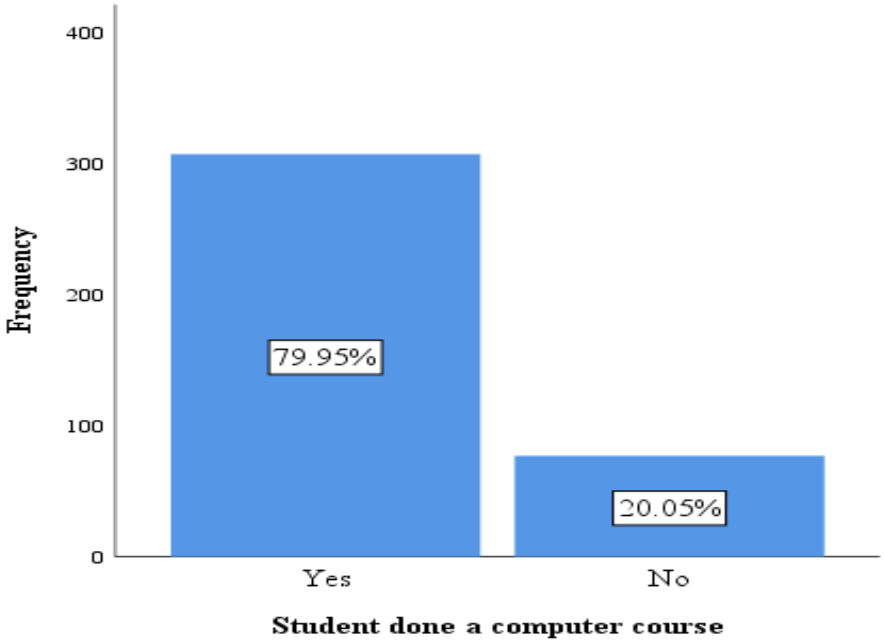

Figure 2. Students in Kenyan Public Universities done a Computer Course

From the total respondents, 79.95% said that they had done computer packages. They had done computer packages before joining university or immediately after joining first year of their university schooling. The remaining 20.05% had not done any computer course but they had learnt on how to navigate on the LMS with the help of other students and do simple basic applications using the ICT gadgets. This group was not able to do simple troubleshooting in case of simple basic ICT challenges. Similar studies across the world have reported

similar results were students who join first year in the universities are said to have done a basic computer package (Makokha and Mutisya, 2016; Esfijani, 2018; Young *et al.*, 2021). The only difference is where after joining these studies found that a computer applications unit was scheduled in the first semester to cover those who might not have done the course before being admitted. This aspect was missing in many of Kenyan public universities. Policy guideline on the entry behavior of students on the level of ICT has not been put to place. This has made the parents and guardians by their own choice either enroll their children for a computer course or not as they get admission to the universities.

4.3 Internet bundles provision to students while on-campus

The study sought to find whether students were supported with data bundles when they are away from the internet hotspots. This includes places like when in the hostels in campus or those who have sought accommodation outside the university. The results are presented in Figure 3 below.

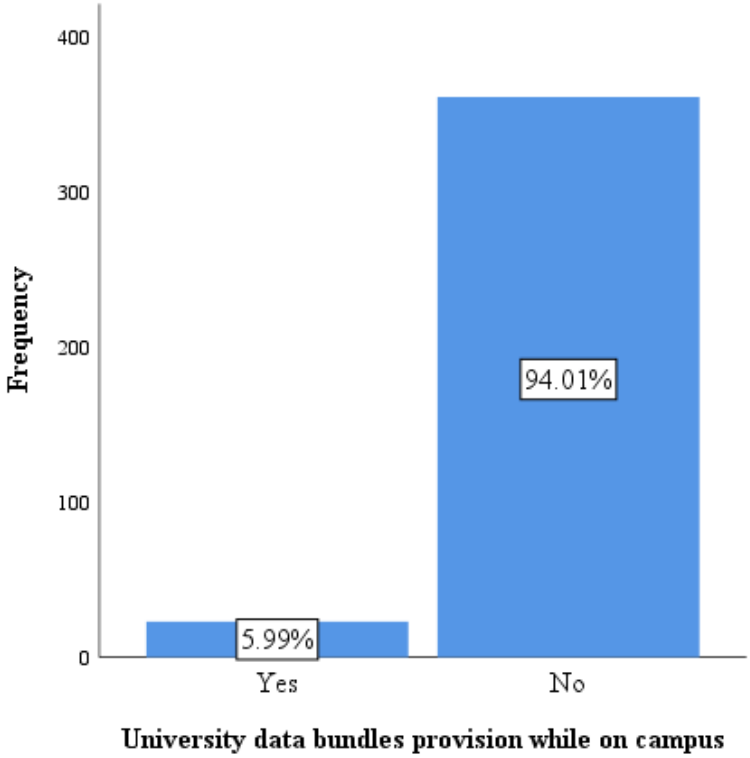

Figure 3. Provision of Data Bundles to Students while on Campus

Majority of the students at 94.01% said that their universities did not give them internet bundles while they were on campus. The remaining 5.99% said that they were given data bundles by their universities especially during the Covid 19 pandemic era. The students who were receiving data bundles had been given data lines by their universities when there was a complete closure of the universities and then they retained the lines even after resumption. Others indicated that the internet bundles they received were at a subsided cost and not entirely free. On a similar study conducted in Central Luzon, Philippines on 'Internet Connection and Learning Device Availability of College Students: Basis for Institutionalizing Flexible Learning in the New Normal,' Asio et al., (2021) indicated that learner support on improved connectivity and having reliable data was a main consideration in offering effective instruction on ICT enabled platforms. Ensuring that the learners have internet connectivity throughout improves the quality of education that is offered on blended learning. In another study conducted in School of Education, University of Nairobi on 'Use of Social Media Platforms and Content Delivery in Higher Education,' Gichuhi et al., (2020) found that there is need to improve on the provision of internet to students.

4.4 Internet bundles provision to students while off-campus

Students who were at home for various reasons that range from lack of accommodation in the universities to those on holiday and to those who were enrolled in programmes that require them to attend online classes from home and later come to do exams were considered to be off campus. When asked whether they received any data bundles to facilitate their online learning, the results are presented in Figure 4 below.

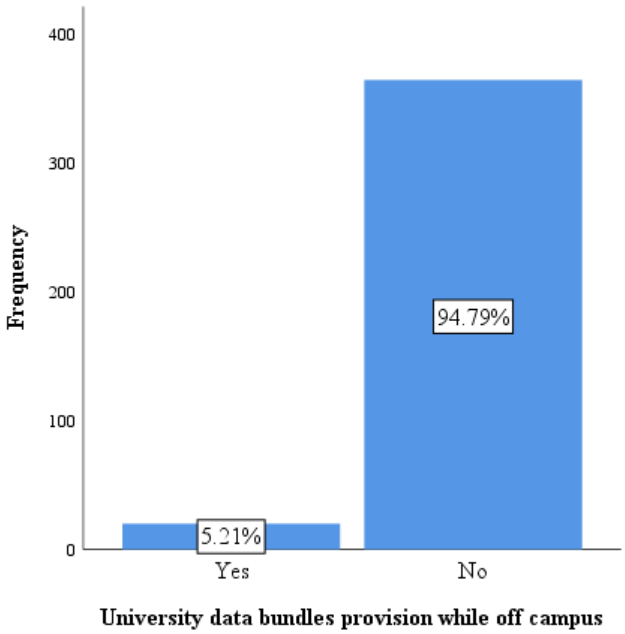

Figure 4. Provision of Data Bundles to Students while Off Campus

The biggest group of respondents at 94.79% indicated that they did not receive any data bundles. Despite this finding, the study found that the cost of the programme the students were undertaking was not lowered or subsidized. The other remaining 5.21% of the students indicated that they received data bundles from the time there was complete closure of the universities due to Covid 19 pandemic. Some of the students from the 5.21% who indicated that they received data bundles indicated that the data bundles were not entirely free but at a subsided cost. These students who reported to have been given data bundles were from some specific universities with majority of the universities not offering any data bundles. The students that had offered internet bundles to students during Covid 19 pandemic had not picked the data lines from the students and therefore they were enjoying the services at the subsidized cost as they subscribed from the internet providers.

On a study conducted in the School of Education, University of Nairobi on 'Use of Social Media Platforms and Content Delivery in Higher Education,' the use of Telecom data lines that had been subsidized or otherwise given for free to students during the Covid 19 pandemic was found to be challenging to do poor connectivity in various parts of the country (Gichuhi *et al.*, 2020). The study therefore recommended that universities re-think their strategies of ensuring stable internet supply to students to promote their online learning for quality education achievements. Incorporating the learner support measures by having the stable provision of internet services to students while off campus yields a great impact on providing quality education in the universities (Asio *et al.*, 2021). Universities need to come up with policies that make data connectivity steady and available to students throughout. This will improve on the quality of education offered on Blended learning platform.

4.5 Level of students' engagement in online and traditional classes

The study sought to investigate the level of engagement that depicts interactivity on the system. This was rated by the lecturers on how LMS was being used by the students. This indicated how frequent the students would ask questions in an online class, how they would conveniently get into the LMS and go through the course content that was uploaded on the system among other indicators. The details are presented in Table 1 below.

Table 1. Level of interactivity in Online platforms

Online lecture engagement	Frequency	Percent	Cumulative Percent
High	37	10.5	10.5
Moderate	139	39.3	49.7
Low	128	36.2	85.9
No Idea	50	14.1	100.0
Total	**354**	**100.0**	

From the total lecturer respondents, 10.5% indicated that the level of interactivity was high and 39.3% said it was moderate. This indicated that cumulatively, 49.7% are comfortable with the how the students interact in ICT platforms may it be synchronous or asynchronous modes of instruction. A further 36.2% rated the level of interactivity as low and the remaining 14.1% did not have any idea on how to rate the interactivity on the ICT

platforms. The lecturers who said that they did not know how to rate the interactivity indicated that the statistics were with the ICT staff who were managing the system. The lecturers who were having large classes like the common courses rated the level of interactivity as either low or moderate. Two similar studies that focused on 'Harmonizing Technology with Interaction in Blended Problem-Based Learning' conducted in Learning and Teaching Centre, Dublin Institute of Technology, Ireland by Donnelly (2010) and 'A Paradigm Switch in Higher Education Learning Trend: Blended Learning' as conducted in Moroccan university by Achahbar & Khoumssi (2023) reported similar findings. The studies also recommended use of learner centered discussion to increase on interactivity while using blended learning to impact of quality of education.

The same question about the level of interactivity but on the traditional class was asked to the lecturers. The findings are presented in Table 2 below.

Table 2. Level of Students Engagement in a Traditional Lecture

Traditional lecture engagement	Frequency	Percent	Cumulative Percent
High	233	65.8	65.8
Moderate	79	22.3	88.1
Low	42	11.9	100.0
Total	**354**	**100.0**	

The largest group of lecturers represented by 65.8% indicated that the level of interactivity was high in a traditional lecture. Another group of 22.3% said that the level of engagement in a traditional face to face lecture was moderate. Cumulatively this was 88.1% of the lecturers who indicated that the level of interactivity was considerable when handling a face to face class. The lecturers handling few students indicated that traditional lectures were more engaging than the online classes. The remaining 11.9% of the lecturers rated the interactivity as low which was attributed to large classes. Those large common courses classes where the lecturers have to use microphones for instruction had low levels of interactivity because when students answer questions, the lecturers could not hear. The nose in the large classes also hampered the effective interaction and efficient engagement in the large traditional classes in the various universities. These challenges of large classes were different from those found in a study on 'Harmonizing Technology with Interaction in Blended Problem-Based Learning' by Donnelly (2010) and in another study on 'A Paradigm Switch in Higher Education Learning Trend: Blended Learning' by Achahbar & Khoumssi (2023). The studies recommended that blended learning is to implemented with manageable small classes to increase the interactivity when in an online class. Online classes if well managed and supported can help solve the problem of low interactivity by use chat and break out rooms to have manageable numbers.

5.0 Conclusion

The study concluded that the students were trained on how to use LMS either through webinars or self-directed modules. Those that were not trained because they were absent or had reported late in the university during admission had to learn from their fellow students on how to maneuver on the system. This affected the implementation of blended learning negatively because the students' level of interactivity and usage of the LMS was lowered.

Students who report in public universities in Kenya had done a computer course either before joining the university or immediately after joining. The students in Jaramogi Oginga Odinga University of Science and Technology were not subjected to online classes in first year because the first year was meant for basic ICT training before they were allowed to use the LMS. There is no policy in the universities on entry behavior that requires students to have done a computer course.

Data bundles for students while on campus or off campus was not there. The universities expected them to use university Wi-Fi and did not plan for them once they are not on the designated internet hotspots. Students level of interactivity was average in online platforms and relatively high in traditional classes. This was attributed to large classes that used online mode of instruction with low induction on how to use the LMS. This aspect impacted on the quality of education that was offered.

Generally, the study concluded that learners were not appropriately supported leading to negative impact on the quality of education that is offered in Kenyan public universities. The set guidelines on the *universities standards and regulation 2014* on learner support when using ICT were not properly implemented. The policy guidelines were also missing on how to effectively offer learner support when using blended learning.

5.1 Recommendations

The study recommended that the is need for proper policy guideline on how education will be offered using blended learning especially on how to support the students. Institutionalization of the provision of stable and reliable internet to a student irrespective of their location should be key to every university. Refresher course on

training of LMS should be done frequently to ensure that those who miss on one training session can join another one that is done later. The study recommended that once the students are admitted in the university, they should first be trained on basic computer applications before induction on LMS is done.

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