Journal of Education and Development; Vol. 6, No. 5; November, 2022
ISSN 2529-7996 E-ISSN 2591-7250
Published by July Press

Undergraduate Student Perceptions on Virtual Online Versus On-campus Teaching – Learning Modes of Delivery and Assessment in Public Universities

Rosemary Khitieyi Imonje[1]

[1] Department of Educational Management, Policy and Curriculum Studies, University of Nairobi, Nairobi, Kenya

Correspondence: Dr. Rosemary Khitieyi Imonje, Department of Educational Management, Policy and Curriculum Studies, University of Nairobi, Nairobi, Kenya. E-mail: imonje@uonbi.ac.ke

Received: November 1, 2022 Accepted: November 27, 2022 Online Published: November 30, 2022

doi:10.20849/jed.v6i5.1308 URL: https://doi.org/10.20849/jed.v6i5.1308

Abstract

On the onset of COVID 19 Pandemic, educational institutions took up either virtual online or blended modes of delivery and learning; as an intervention of solving programmed learning retention, transition and completion concerns among students in institutions of higher learning. In spite of the fact that online learning faces access learning challenges; there seems to be myriad issues with online assessment procedures. Despite this, there is still much debate on whether online assessments, particularly examinations, offer the same academic integrity as the traditional on- campus face to face paper assessment (Paulli and Ferrelli 2020). The purpose of this study was to assess the perceptions of undergraduate students on virtual online versus on-campus teaching- learning mode of delivery and assessment. The study anchored on descriptive survey design. A sample of 200 students across different years of study at the Faculty of Education, Kikuyu Campus, University of Nairobi, were targeted. The study used online google form to collect data. Descriptive statistics were applied in data analysis. Data was presented through tables, percentages and graphs. 140 students participated in the study. 86.1% of the respondents were in learning session and 13.9% were not in session. The most preferred mode of delivery is face to face on campus with 69.7 % responses, Virtual online – 21.8% and both, was 8.5%. The major reason for preference was that there are subjects such as mathematics, Kiswahili and English which require physical classroom student – lecturer real interactions and immediate instructional feedback for quality acquisition of skills, knowledge and values; which is completely lacking in online virtual learning; and that online virtual pedagogy flow is usually interrupted with network issues causing in-consistency in coverage of course content. Blended learning was recommended for courses that require intense practical sessions, while the other courses can take up online mode of pedagogy. Conclusively, there is need for further review of online pedagogical approaches, and curriculum policies in order to have aligned online assessments that consider equity in access to online pedagogy, in line with student socio-economic backgrounds and conducive learning environments. More research is needed for effective online pedagogical alignments.

Keywords: virtual/blended mode of delivery, undergraduate students, online assessment, pedagogical online alignment

1. Introduction

1.1 Contextualization of the Problem

Quality learning and skill acquisition in higher education anchors on effective integration and synthesis of teaching –learning modes of delivery and assessment procedures. In order for modes of delivery for teaching –learning to impact quality in learning there is need to align student level of access to learning spaces and curriculum content. Higher education has and is still struggling in its response mechanisms on the path to quality learning as a result of COVID 19 pandemic crisis disruptions through which in-person instruction was suspended and replaced with virtual teaching technologies. Even with the introduction of these virtual technologies, there are great inequalities in access to quality educational opportunities, especially in public universities which have large student populations from marginalized, rural and slum regions where internet connectivity has never reached. It is important to consider the fact that educating is not merely imparting knowledge but anchors on

how students acquire this knowledge through the pedagogical demonstrations advanced by the availed modes of delivery and instruction. Pedagogical appliances and modes of delivery impact on effective achievement of inclusive and equitable quality education and promoting life-long learning opportunities for all (Sustainable Development Goal No. 4). Inclusion of online virtual modes of learning and platforms need to be selected with great consideration to socially, economically and geographically marginalized students; and those students in different categories of special needs.

Most public universities are still torn between offering online virtual pedagogies, face to face delivery, open and distance learning or blended in delivery of content in most courses due to the diversities in student population; and diverse academic course appliances. The scheduled online/virtual learning programmes and spaces seem not to have been appropriately positioned across most tertiary levels. Online and virtual faculty capacity building initiatives seem to lack harmonization and consistent coordination in most institutions of higher learning (Imonje, 2021). The shift from face-to-face to distance; and online teaching did not come without challenges, the main one being access to technical infrastructure, competences and pedagogies for distance learning and the requirements of specific fields of study.

With the rush towards continuity in higher learning, most institutions took to "*panic planning and implementation"* of the curriculum through online virtual modes of delivery. We cannot do panic planning in education because this creates imbalances in curriculum implementation, compromises quality learning and produces "half-baked" graduates who are not critical thinkers and innovators in economic, technological and industrial sectors. We should integrate components of pedagogical resilience in higher education curriculum through consistent curriculum and program reviews and inclusion of student - centeredness in learning with a major shift from conventional content approaches. A resilient curriculum or pedagogical approach is one that can stand the test of time and integrate a blend bias towards crises and emergency contexts with an aim of adjusting to whatever changes that are impacting on the society.

Consequently, the forced move to distance teaching and learning has triggered opportunities to propose more flexible learning possibilities, explore blended or hybrid learning and to mix synchronous learning with asynchronous learning. In his study on *Technology Supported Learning and Pedagogy in times of Crisis*, Ahmed and Opuku (2021) found out that technology supported learning tools are capable of enhancing students' experiential learning and associated competencies, however there were a number of pedagogical, technological and psychological challenges that faced students and instructors as a result of the sudden migration online, which are likely to play a role in the impediment of the students' learning cycle. In this study, 60% of higher institutions of Learning reported that COVID-19 had increased virtual mobility and/or collaborative online learning as alternatives to physical student mobility. The study found that instructors with effective communication skills and teaching style, competent use of technology, flexible, friendly and supportive attitude towards teaching, played a positive role in mitigating for the lack of preparedness in response to sudden migration online. The comments from Ahmed's study concurs with perceptions on modes of teaching in this study which strengthens the quality of learning. Mastery of content by the instructor may not contribute much in cases where students have technical problems in accessing learning due to connectivity issues especially in online learning, except that the instructor devices outreach pedagogical approaches to ensure the student gets the appropriate space to get access to the related content.

On the aftermath of COVID pandemic critical stage, most institutions of higher learning have embraced the blended and asynchronous pedagogies as coping mechanisms for modes of delivery even in the field of engineering and medicine which anchor on hard skill specializations. The asynchronous mode of delivery allows a convenient environment to the learner, which includes (but not limited to) online material such as; audio and video clips, communication through discussion board and email. With asynchronous mode the learners can work on their own pace and time of the day. These modes of delivery notwithstanding, there is great need to consider student diversities for effective application of the modes of content delivery. Massive numbers of student population studying at the universities originate from different marginalized, remote social, economic and regional (geographical) backgrounds; which can barely be reached, in matters concerning quality learning. Such diversities pause a challenge to access, delivery, retention, completion and governance of quality university education in the most needed societal skill areas.

Like other universities, the University of Nairobi Kenya, developed an interactive intellectual linkage and networking between university governance, faculty and students through which orientations and trainings on application and use of digital teaching and learning platforms was/is consistently being done. Consistent and vigorous training on assessment procedures, the lecturer module approach, and student access to online examination is on-going. Through this initiative; training on online skills that targeted, academic staff,

administrative and support staff; and students have been undertaken. The university has trained over 98% of faculty, 95% of key support and administrative staff on the use of online teaching and learning tools and pedagogies. Over 90% of students have been oriented on how to use these online tools for academic progression. The University Senate resolved to use the following online platforms; Zoom, Google Classroom, Big Blue Button, Blackboard, Webex, University e-learning platform (e-class); in transitioning all teaching and learning to online platforms in the era of Covid-19 pandemic and future crises.

Further coping mechanism that has consistently helped both the faculty and students is the linkage of University of Nairobi management and all support service delivery to Mobile Service Providers; Telkom and Safaricom; to provide bundles continuously for online subscriptions. These has helped the university community to organize and manage online capacity building workshops, online teaching – learning processes; and online examination procedures. The university is in the process of implementing a transformation programme coupled with changes necessitated by the need to address the impact of the COVID 19- pandemic; by drawing upon and continuing to strengthen the resilience of the systems supporting the core academic function through data-driven decision making processes at the university. The University of Nairobi has become a base setter in higher education in Kenya and across Africa; and did not go into total closure during COVID 19 pandemic log down. The university invested in webinars to develop the virtual skills of staff and students.

2. Literature Review

2.1 Modes of Delivery Versus Types of Assessments in Higher Education

All modes of delivery integrate assessment as an important component that impacts effective content delivery and acquisition (Angus & Watson 2009). With the introduction of online, asynchronous and synchronous teaching and learning pedagogies, universities shifted from face to face on-campus assessment to online assessment modes. Hence, teaching and learning methods must be assessment-centred to offer learners opportunities to prove their emerging abilities and receive backing to enrich their learning. This study anchored on Undergraduate Student Perceptions on Virtual Online Versus On-Campus Teaching – Learning Modes of Delivery and assessment in public universities. It is significant to know that what students understand as imperative is often influenced by assessment (Lemanski 2011; Russell & Barefoot 2011); which means that assessment, and not the curriculum defines how and what students learn. The choice of assessment is critical, and properly aligning the assessment to the learning outcomes to produce a constructive learning practice (Biggs & Tang 2011), although students learn for the sake of assessment. We need to understand that assessment practices affect students by leading their consideration to certain aspects of module material and by stipulating how to process information. Most students focus their determinations towards any material or cognitive abilities they believe will be assessed (Bull & McKenna 2004). Various forms of assessment inspire different categories of learning. They might include formative and summative assessment.

Formative assessment is defined "as the iterative processes of establishing what, how much and how well students are learning in relation to the learning goals and expected outcomes in order to inform tailored formative feedback and support further learning, a pedagogical strategy that is more productive when role is shared among the teacher, peers and the individual learner" (Gikandi *et al.*, 2011); similarly, formative e-assessment for online assessment provides feedback on student acquisition of content and is meant to monitor change in behaviour in student learning attainment. Summative assessment is geared towards measuring the extent to which objectives in each course are being attained.

However, there is a myriad of issues on quality of student achievement through formative and summative e-assessments in public universities. Increased use of Information Technology, flexible assessment methods and quality assurance all affect assessment and the need to diversify and adapt traditional assessment practices to suit new modes of virtual learning is the current challenge facing public universities in the world. *Emerging issues in virtual assessment modes that need to be scrutinized by quality assurance in universities include; assessing to promote particular kinds of learning outcomes, using meaningful assessment techniques to assess large groups, tackling web plagiarism and authentication of student work.*

In online virtual assessments, there is inability of students to explain their answers especially in practical courses due to rigid technological settings which leads to increased stress for both teachers and students; and furthermore, reduced personalized engagement with faculty is a concern associated with online assessments (Betlej 2013). In a study conducted in a university in South Eastern United States, data was collected through tracking technology usage and grades of 174 students; some students being taught and assessed primarily through online learning platforms while others assessed through traditional pen and paper tests. No significant difference was seen in terms of performance or effort in students taking online examinations. The study indicates that advantages

offered through online assessments are of convenience rather than academic superiority; and use of online assessments do not adversely influence student's grades. This study would have had more strengthened findings by also getting student perceptions, as in this current study on undergraduate perceptions which cements conclusions and generalizations.

Formative assessment embraces assessment as learning and assessment for learning while summative assessment involves assessment of learning. ***Assessment for Learning*** is the process where the assessor uses the assessment results to modify and improve the teaching learning process with a purpose of determining the steps to take in improving learning; student progress and lecturer teaching strategies in relation to the curriculum outcomes. ***Assessment as learning*** involves continuous self and peer assessment by the student for purposes of monitoring and reflecting on their own learning. It guides and provides opportunities for each student to monitor and reflect on own learning; self and peer reflection of their learning experiences and approaches to use in improving. ***Assessment of Learning*** is undertaken at the end of a learning period or session to determine what a student knows and can do with respect to achieving the learning outcomes; and informs the assessor, parents and other stakeholders on students' progress while assessing the students' acquisition of competencies at the end of a learning period.

Thus, it is a dire need for universities to re-design blended modes of assessment from these types of assessment procedures to ensure quality competencies and skills are attained through the e-assessment procedures for all students to access quality assessment procedures, regardless of their marginalised state and inequalities. Universities need to build core values of innovativeness and creativity in the programs and assessment procedures to build and strengthen their survival in times of crisis. A resilient university is one that has the capacity to build back better faster and respond to emerging issues through its existing resources; recognising and using the little opportunities availed to adapt to the challenging and changing environment.

With online and blended modes of learning lecturers and all faculty in tertiary institutions have to re-theorise certain basic concerns of teaching, learning and assessment in non-traditional environments. These concerns include perceptions such as trustworthiness of assessment in online environments in relation to serving the intended purposes, as well as understanding how quality in formative and summative assessment operates within online learning environment. Consequently, it is important to think of how formative and assessment benefits both the student learning and teaching within pedagogical strategies in an online context.

2.2 Theoretical Framework

This study anchors on two theories of learning; Cognitive Development theory of Jerome Bruner (1966) and social constructivism learning theory by Lev Vygotsky in 1968. Learning theories describe how students process, absorb and retain knowledge in the teaching/learning process. The three broad learning theories that have traversed the ages are: behavioural, cognitive and constructivism. In behavioural learning theory, the learner is largely passive and dependent upon the teacher because the learner is seen as an empty vessel waiting to be filled. This theory thrives in rote learning, repetition and recall. Each student is unique in the way they learn or perceive content or information that they interact with. Each educator's concern is whether learning has taken place; and whether there is change of behaviour in knowledge acquisition level in the student after the student has interacted with the set content. The change of behaviour is measured through formative and summative assessments.

Cognitive theory of learning is rooted in responsive teaching and pedagogical processes. Teaching is the art and science of helping others to learn; and management and strategies used for lesson delivery in the classroom (Dorgu, 2015). It is a process in which the faculty initiates a set of activities based on predetermined instructional objectives in which the learners take part so that the result is the acquisition of knowledge, skills and attitudes that would become permanent in the learner by means of regular practice. For effective teaching to take place, choice of applicable modes of content delivery and assessment that allows access to learning for all students must be well thought. Modes of delivery must include responsive teaching, learning and student interactivity. Responsive teaching anchors on mentorship principles which involves observing students' interactivity carefully and then figuring out where they are going and then helping them to get there (Goodman, 2006). It includes building a sense of shared ownership and intellectual control as an effective way of achieving high levels of student interest and engagement in skill and knowledge acquisition. Thus, teaching has principles and methods meant to maximize students' learning. These principles and methods are founded on theories of learning such as cognitive constructivism and social constructivism. Modes of assessment and student perceptions towards learning are critical components of cognitive and social constructionist theories.

2.2.1 Theory of Cognitive Constructivism

Theory of cognitive constructivism has its foundation in Bruner's Cognitive Development Theory of 1966. Bruner's cognitive development theory states that the level of intellectual development is determined by the extent to which the students has been given appropriate instruction together with practice or experience to learn. The theory focuses on the processes of thinking, concept formation, reasoning and problem solving involving the individual student's mental processes. The next level of learning, which is the social constructivism theory, holds that learning is significant when learners through active participation construct or create basic knowledge by themselves through enquiry and discovery. Effective learning must focuses on student interactivity, collaboration and participation in discovery of knowledge.

Cognitive constructivism theory states that people construct their own understanding and knowledge of the world, through experiencing things and by reflecting on those experiences. This theory explains that when we encounter something new, we have to reconcile it with our previous ideas and experience, perhaps by changing what we believe, or by discarding the new information as irrelevant. To do this, we must ask questions, explore, and assess what we know; which indicates that learning is an active process where students use practical approaches to create more knowledge, reflect on and talk about what they are doing. The theory deemphasizes memorizing the conceptions and definitions of others but insists that learners create their own definition, meaning and understanding based on discovery. Sometimes they achieve this when they work together with their colleagues. This leads us to the social aspect of constructivism.

2.2.2 Social Constructivism

Social constructivism is a learning theory propounded by Lev Vygotsky in 1968. The theory states that language and culture are the frameworks through which humans experience, communicate, and understand reality. According to Vygotsky, language and culture play essential roles both in human intellectual development and in how humans perceive the world. This is to say that learning concepts are transmitted by means of language, interpreted and understood by experience and interactions within a cultural setting. Since it takes a group of people to have language and culture to construct cognitive structures, knowledge therefore is not only socially constructed but co-constructed. The link here is that while the constructivist sees knowledge as what students construct by themselves based on the experiences they gather from their environment, the social constructivist sees knowledge as what students do in collaboration with other students, teachers and peers. Social constructivism emphasizes the collaborative nature of learning under the guidance of a facilitator or in collaboration with other students. Social constructivism recognizes the social aspect of learning and the use of conversation, interaction with others, and the application of knowledge as an essential aspect of learning and a means to achieving learning objectives - which is either lacking or not well articulated in online or virtual technologies or platforms of teaching or learning applied in higher education. Hein (1991) puts it in his own way that the level of potential development (academic achievement) is the level of development that the learner is capable of reaching under the guidance of teachers or in collaboration with peers. Learning is therefore a social activity facilitated or associated with other human beings or interactions including historical occurrences.

Vygotsky believed that life long process of development is dependent on social interaction and that social learning actually leads to cognitive development. In other words, all learning tasks (irrespective of the level of difficulty), can be performed by learners under adult guidance or with peer collaboration. This theory helps to give a backup to the establishment of opportunities for students to collaborate with the teacher and peers in constructing knowledge and understanding. Social constructivism is also called collaborative learning because it is based on interaction, discussion and sharing among students. The underlying factor to the theory is that students work in groups sharing ideas, brainstorming trying to discover cause and effect, answers to problems or just creating something new to add to existing knowledge.

Higher education need to emulate and re-adopt the principles advocated by cognitive development, cognitive constructivism and social constructivism theories in faculty and student capacity building initiatives for virtual modes of delivery taking into consideration student diversities in accessing learning opportunities. Most institutions of higher education seem not to have enough of the student learning interactivity through asynchronous and synchronous online teaching – learning platforms as compared to face to face on-campus mode of learning due to internet connectivity and lack of conducive learning environment/infrastructure and conditions for both the student and the lecturers.

3. Statement of the Problem

In spite of the fact that online learning faces access learning challenges; there seem to be myriad issues with the quality of online assessment procedures. The inclusion of online assessment as a strategy of continuity has

alleviated the validity associated with the previous disjunction between teaching and assessment modes with e-based learning (Gipps, 2005). Despite this, there is still much debate on whether online assessments, particularly examinations, offer the same academic integrity as the traditional on- campus face to face paper assessment (Paulli and Ferrelli 2020). There seem to be increased cases of claims of malpractices and dishonesty by students in e-assessment formats hence, quality of student achievements being questioned. These examination malpractices and dishonesty seem to be anchored on lack of appropriate student preparation and content acquisition which seem to anchor on online modes of delivery and pedagogical appliances in teaching –learning processes.

3.1 The Objective of the Study

The aim of this study was to investigate the perceptions of undergraduate students on virtual online versus on-campus teaching- learning mode of delivery and assessment in public universities.

3.2 Research Question

What are the perceptions of undergraduate students on virtual online modes of delivery and assessment as compared to on- campus modes in public universities in Kenya?

3.3 Significance of the Study

Undergraduate studies at the university are foundational skill and career builders for students enrolling at this level of learning. They lay the basis for career interests, and post-graduation plans for undergraduate students. At this level of learning, higher education imparts in-depth course content, knowledge and understanding so as to advance the students to new frontiers of knowledge and career prospect establishment. Education at this level provides opportunities for lifelong learning, allowing students to upgrade their knowledge and skills from time to time based on societal needs. Appropriate foundational pedagogical and course evaluation rooting for students at this level is imperative for quality graduates from the universities.

Undergraduate students are the primary consumers of university course content and skills in various disciplines on offer; pedagogical and service delivery processes; and are end products of the education system. They are in a position to determine learning problems facing them, their needs, wants and demands. Student perceptions have a huge impact on understanding the determinants of quality assessment and have solutions to assessment problems and malpractices; which can greatly impact decision making processes in program design, development, implementation and evaluation in higher institutions of learning. Students in public universities place great importance on interpersonal relations and social interactions while learning; the move to online education has decreased human physical interactions, and hence perceived as a hindrance to the transition into advanced learning (Freimuth and Charles 2014). Hence, the importance of seeking student perceptions on this matter.

An understanding of students' views can help identify obstacles and promotors in embracing online teaching and assessments at the undergraduate level. It is imperative that students' views regarding changes in educational techniques be taken into serious consideration to ensure a smooth and successful transition. If students' perceptions remain elusive, technological measures taken to solve problems in education may end up as 'sub optimal' solutions (Laurillard 2008). Once students' concerns are identified, faculty and academic institutions can mold the teaching methodology accordingly and make informed decisions on incorporation of online technology for the purpose of assessments.

Most public universities are struggling with online/virtual pedagogical demonstrations, platforms and e-assessments. Findings from this study purpose to inform online pedagogical and assessment policy reviews in universities in consideration to students' needs for quality skill and academic achievements. The findings are also theoretical inferences and references for scholarly researchers.

4. Methodology

The study employed a mixed methods approach (quantitative/qualitative online survey) anchored on descriptive survey design. The survey targeted students admitted into Bachelor of Education (Arts) degree in the Faculty of Education, University of Nairobi. The faculty receives about 800 students across different courses of study annually. These students are training as student- teachers, who, on completion and graduation will seek vacancies as trained teachers to be recruited to teach in secondary schools. Stratified sampling was used based on courses undertaken by the students and years' of study.

This survey took place starting 22nd to 30th October 2021. A total sample of 200 students across different years of study at the Faculty of Education, Kikuyu Campus, University of Nairobi, was targeted. The study used online

google form to collect data. Information collected through this form included modes of delivery are being applied in learning; most preferred mode of delivery, lecture lesson attendance, virtual learning platform preferred by students for quality content delivery; preferred modes of administration of course evaluation, the challenges of online examinations and assessments; and the best method in authenticating and ensuring reliable administration of examinations and release of examination results.

Out of the targeted 200 undergraduate students, 145 responded to the survey. Descriptive statistics were applied in data analysis. Data was presented through tables, percentages and graphs.

5. Findings of the Study

This survey aimed at understanding the perceptions of students on the modes of delivery and assessment for purposes of future decision making, planning, designing and selecting appropriate pedagogies for quality learning in public universities.

5.1 Response Rate

Out of the targeted 200 undergraduate students, 145 responded to the survey; 49.7% were male and 50.3% were female. Majority (67.6%) of the respondents were second year students and 30.0% were fourth years. Others who participated were 1.8 % 3rd years and 0.6% were first years. 86.4 % of respondents reported that they were in either online or on- campus teaching learning session at the time of the survey whereas 13.6% were not in session. The course clusters or combinations represented in the survey include: English and Literature (54 students); Mathematics and Business studies (33); Mathematics/Geography (12); Geography/Business Studies (8); History/CRE (7); History/Kiswahili (5); History/Geography and Math/PE (2) each; Geography/ Kiswahili, Kiswahili /CRE, Geography/CRE and Businesses studies/History had 1 student each.

5.2 Mode of Delivery

When asked on modes of delivery being offered, the respondents indicated virtual online teaching- learning (78.9%), face to face on campus (1.4%) and Both (19.7%). These indicate that most respondents were learning through the online/ virtual mode of delivery during the time of the survey.

The students were asked on which mode of delivery is most preferred. Majority (69.7%) preferred face to face on campus –responses; Virtual online (21.8%) and both (blended) (8.5%). The students were also asked on which mode of delivery that they do you not prefer at all. The findings indicated that the mode of delivery not preferred at all is Virtual online (73.7%) and face to face on campus (26.3%)

When asked for the reasons for the most preferred mode of delivery, there were multiple reasons which can be categorized into three; *content pedagogical approach, conducive learning environment and the cost attached to access to quality learning*.

The following were the reasons given by the respondents for the most preferred and not preferred at all mode of delivery;

Face to Face Mode of Delivery (Most Preferred)	Virtual- Online Mode of Delivery (Not preferred)
• Face to face learning improves teacher student contact, easy and efficient mastery of content and delivery • Physical classes breaks monotony and encourages live participation. • Face to face interaction enables students to get the concept easier as compared to the rest. • *Face to face interaction with your lecturers and even class mates help one get a better understanding, it enables easier consultations to your teachers and students if you did not understand a concept in conducive environment* • Enhances Physical interaction, flexible inquiry and sharing of ideas and also enhances utilization of library resources • *My subject combination requires more interaction especially Mathematics. It's hard to be taught mathematics online. Mathematics being taught online it's not good I have heard people using apps during exam to find answers more so we are generating online degrees*	• Telkom lines issued by the university are very poor in terms of internet connection and do not connect in some remote areas, which makes virtual to be inefficient, expensive and unreliable. • *Online learning has a lot to do especially now that I am at home, it isn't convenient, you get distracted from any source, with emergency issues, house chores while attending classes, and noise outside class; then am buying Safaricom bundles which are expensive* • The virtual online teaching and learning requires network of which in some areas no network connection, no money to buy bundles • Virtual online teaching has a lot of challenges; learning is not efficient and assessments platforms are not favourable

• Face to face on campus is reliable, regardless of the student status, each gets an equal opportunity to learn unlike virtual which doesn't favour or give an equal opportunity of learning to the students • It's cheap, affordable, cost effective, no bundles required, more convenient and accessible by many students who can't afford electronic gadgets • Everyone can attend the lesson hence full class attendance and participation	• Sometimes it is hard accessing the lesson and also it is hard to ensure 100%class attendance due to distractions. Also some platforms like google classroom cannot hold more than 100 persons at one go

5.3 Class/Lesson Attendance

Student lesson attendance is one of the key issues that lead to drop-out cases, failure and poor academic performance in public universities. Despite the fact that colleges and universities have compulsory attendance policies while others have refrain from making it as such; higher education, attendance is believed to have a positive effect in academic performance. Non-attendance in class lecture is seen as one of the reasons for academic failure.

According to University of Nairobi curriculum policy, a student is expected to 70% of the lessons in the registered courses. Links between attendance and performance have been studied in the context of different subjects – for example, Gunn (1993) and Thatcher et al. (2007) for psychology, Self (2012) for macroeconomics, Millis et al. (2009) for medicine, Sharma et al. (2012) for physics students, Hutcheson and Tse (2006) for finance students and Horton et al. (2012) for physiology students. All the studies – whether using ANOVA, Chi-square tests, correlation tests or t-tests – have found that there was a statistically significant relationship between attendance and performance in examinations or tests or essays or any other assessment.

Respondents were asked to state how many of their classmates are not attending lessons at all during the session. Majority (42.3%) of the respondents reported that 5 students do not attend a lesson, 7.7% reported at least 4 students do not attend a lesson, 8.5% indicated at least 3; 12.7% indicated 2 students; and 28.9% indicated at least 1 students miss lessons. *As an educationist, you can imagine the multiplier effect this responses have if each student in every course and in every campus in every institution of higher learning, globally, would be asked the same question. This reveals a high level of absenteeism in lesson attendance which raises concern of students who miss out on quality learning which raises more concern on quality of graduates produced from institutions of higher learning globally.*

The main reason for missing lessons was reported by 99.9% of respondents as internet connectivity from diverse regions and environments, cost of bundles, lack of the suitable gadgets such as smart phones to access the lesson content and information; and lack of conducive learning environment to access online virtual learning.

5.4 Course Evaluation and Assessment

Respondents were asked on what mode of delivery they prefer for administration of course evaluation and assessment. Majority (49.3%) of the students preferred Face to Face on campus examinations, 46.4% of the respondents preferred online examination and assessments; and 4.3% of the respondents preferred *others* such as Blended, Open book assessment.

5.5 Challenges of Online Examinations and Assessments

Students were also asked to state the major challenges of online examinations and assessments. The findings are indicated in the table below;

Student Responses	**Frequency (Responses)**	**Percent**
Connectivity issue , hanging examination platforms, running out of power	119	43.3
Examination cheating and malpractices	48	17.5
Lack of conducive examination environment and inadequate time to complete examination	40	14.5
Lack of skills in handling online examinations	68	24.7

It is important to take note of cases of majority responses on issues of concern which universities should take the initiative either to strengthen measures already in place or take up alternative mechanisms or initiate strategies to curb the vices *"in case of no strategy in place".* For instance, connectivity, hanging examination platforms as stated by (43.3%) of the respondents; and lack of skills in handling online examinations as reported by 24.7% of the respondents; are maintenance and capacity building in nature; and requires collaborative initiatives of strengthening existing mechanisms. Examination cheating and malpractices as reported by 17.5% of the respondents requires a critical change of tact as it touches on quality of skills and products released to the job market by institutions of higher learning.

The students were further asked to state the best method in authenticating and ensuring reliable administration of examinations and release of examination results. The findings are indicated in the table below;

Student Responses	**Frequency (Responses)**	**Percent**
Introduce open book examinations	55	31.4%
Take classes online and do face to face on campus examinations,	58	33.1%
Student identity card and photo be displayed before start of every examination	49	28%
Resume on face to face learning and do our examinations face to face.	7	4.0%
Take online classes and do online exams	4	2.3%
Learn through blended mode and do online examinations. - But face to face should be done 75%. Online 25%,in exam	2	1.2%

Let us pick on one that seem to be a new initiative for most public universities in Africa– introduce open book examinations as reported by 31.4% of the respondents.

5.6 Open Book Examinations Versus Closed Book Examinations

The key question in quality assessment procedures since onset of COVID 19 pandemic in higher education was/is the means or channels and suitable resources through which examinations could be administered to **ALL** students – the vulnerable and poor; marginalized and in remote regions with no means of connectivity; those students with differentiated needs and are of special need categories. Most universities in Africa and the World are still in limbo on how all these students regardless of their needs can access quality assessment procedures for quality educational achievement. Ahmed Atia, head of department of advisory and research at the faculty of medical technology of the University of Tripoli in Libya, told *University World News* that, from his point of view, developing countries, including Libya, were a long way off being able to conduct quality online examinations owing to lack of experience, expertise and equipment on the part of students and staff.

At United States International University-Africa, situated in Nairobi, Kenya; it was reported that due to the impact of COVITY 19 pandemic university closures, the university senate approved the use of *open book examinations*, projects, online proctored timed examinations, term papers, case studies and recorded videos for tasks that require observation for the end of spring semester examinations (Rono,2020).

The question that some of us may ask is - *what are open-book examinations?* Open-book examinations allow students to take notes, texts or resource materials into an examination situation. They test student ability to find and apply information and knowledge. Open book examination is an assessment method designed in such a way that allows students to refer to textbooks, class notes, or any other approved material while answering questions. It can also mean that students are provided with the question paper before writing the examination. It tends to ask students to analyse, synthesize, compare or evaluate information. They test whether students understand the main content and skills of the course and how it works. It requires students to understand the material properly and be able to apply or analyse information and content rather than just remember it. These examinations provide students with a second learning opportunity to absorb and understand the course material. While reading through the textbook for answers, students will get more knowledge in the subject and can prepare for future examinations and professional development in a better way. To prepare for the open book examination, students need to read and understand the test guidelines, know the test format, test themselves, study the class materials, plan their time, and carve out a quiet test-taking spot with minimal distractions. While doing an open book

examinations student need to use their skills to analyse what is the perfect answer for the given question. Overall it can be said that these examinations are good to improve student skills. The rationale of such an examination is "reasoning" rather than recalling the facts (Tussing, 1951).

Open Book Examinations (OBE) enhances the learning environment and helps students to understand and respond to questions in better way (Brightwell et.al. 2004). While preparing for OBEs students consult various sources, such as textbooks, classroom notes, and online blogs. This helps them interrelate the concepts and encourages them to acquire knowledge in a more creative approach and avoid "rote learning" (Theophilides & Dionysiou, 1996). The studies conducted in the past have shown that while comparing students' scores for OBE and Closed Book Examinations (CBE), there is no statistical difference, even though students who took CBE had a slightly higher score Open-book examinations need the maximization of student creativity (Brightwell et.al. 2004). Makala (2011) argues that open-book examinations evaluate the creative and critical facilities of students. When students are given an open-book examination to write, the assessors want to establish how they applied knowledge and not to merely regurgitate the text. Chaudhary and Dey (2013) also contend that the traditional assessment practices have changed to meet the needs of the contemporary society. "Content-based testing has shifted to performance-based assessment. Assessment is no longer used for grading and certification, rather it has linked with learning and skill development of students" (Chaudhary & Dey 2013). Liska and Simonson (2005) assert that open-book examinations ensure that instructors set questions that require interpretation, analysis and critical thinking. The students also tend to be more relaxed than when they write closed-book examinations. OBEs can reduce the students' fear, anxiety, and stress levels (Tussing, 1951). OBE encourages learning and prepares students for real-world decision making (Green *et al.*, 2016). In an OBE student also seeks answers from various internet sources apart from course textbooks, and classroom notes which boosts student performance and face validity. The findings in this study concur with the perceptions of undergraduate students in these studies who thought open book examinations will give them opportunities of critical thinking and acquisition of more knowledge as compared to rote learning and memorization practised in the conventional way of setting examinations.

The debate on OBEs and CBEs may not end as expected because of the uniqueness of each one's critical thinking accompanied with facts and authentic research studies and insights. However, in this point in time when professors complain about cheating and dishonest of students in examinations, hanging online examination platforms, connectivity issues, conducive examination environments versus the three-four hour set per every examination after every teaching –learning session; it might be best to re-consider critically allowing a blend of online, virtual open-book examinations than closed-book examinations for institutions of higher learning to meet diversity in student population in matters access to quality assessments and quality achievement. These can be contextualized to the needs of each institution of higher education.

6. Recommendations

In this digital transformation era, digital literacy and digital learning technology is what all higher education institutions should embrace. In the ancient past, before COVID 19 pandemic trigger, online education has been embraced with most universities awarding accredited degrees on the premise of an online learning curriculum. In this technological advancement era, we cannot invalidate the magnanimity of digital technology's impact in daily living. Transitioning to online pedagogical and assessment transformative framework has been perceived by most global institutions, as hundreds of new online courses are added to the web each year and even degree programs are now taught and graduation conducted online as has been the case with the University of Nairobi. Students and staff are already acquainting themselves with capacitated ICT skills and demonstrate the same in teaching /learning processes.

The major challenge in online teaching and learning for both students and teaching staff is internet connectivity and conducive learning environment due to large and massive numbers of student population, whom, majority originate from remote marginalized environments. Universities should have partnerships with global internet service providers, to collaborate and benchmark to source for funds to expand and strengthen virtual technical infrastructure (both hardware and software) to reach massive students in remote and marginalized regions, ensuring that nobody is excluded from online lessons and no student is left behind; and support students and faculty to use online tools and technologies in an effective manner.

There is need to review and re-design pedagogical practices to include the blended, inquiry based, experiential, project based and collaborative learning styles which are mainly student oriented; and universities should move away from the traditional conventional teacher based classroom pedagogies propagated through lecture methods, which encourages passivity and dependency on lecturer face to face modes of instruction.

Universities in Kenya, Africa and other developing countries should review their modes of assessment and course evaluation procedures with an aim of diversifying them; and make unprecedented decisions to move away from Closed Book Examinations (CBEs) and embrace Open Book Examinations (OBEs) which assess higher order of Blooms' *et al.* taxonomy to analyse, synthesize, compare or evaluate information rather than memorizing, rote learning and recalling facts that force students into examination dishonesty and malpractices. This is recommended by 55 (31.4%) respondents in this study, who stated "introduce open book examinations" to deal with examination cheating and malpractices which is a challenge as reported by 48 (17.5%) of the respondents. University of Nairobi and other universities in Africa need to bench mark with universities such as University of Oxford, University of Delhi and Cambridge University which has established open book examinations.

7. Conclusions

Online modes of teaching and assessment with an added advantage of diverse learning experiences is still faced with numerous challenges. Majority of students have raised the challenge of internet connectivity and conducive learning environment they face in the struggle to access lessons and examinations some of which are non-avoidable obstacles in the provision of quality education. In this era of Information Technology (IT), students still preferred face to face classroom teaching over e-learning and despite worldwide acceptability and credibility of online education due to these challenges. There is need to re-design resilient pedagogical transformative practices and online open book examinations that can stand any form of crisis for continuity of quality higher education.

The Commission for University Education in Kenya and university managements should work collaboratively to pay special attention to this matter and student-amicable e-learning system should be developed. It will not only provide quality education to students during this pandemic but will pave the way for permanent implementation of e-learning for students in distant and rural areas who cannot afford to attend universities in metropolitan cities, even during future crises. The University Managements should review and actualize continuously proper surveillance system for both students and teaching staff so that provision of high quality and student-friendly education cannot not be deterred.

It will be in order if further studies should be conducted on teaching staff/faculty perceptions on pedagogical transformative practices and assessment procedures to align with the findings of this study for appropriate review of e-learning processes for quality learning, quality assessment, quality achievements leading to production and release of quality, skilled and productive graduates into the ever-changing job market and the world.

References

Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). *How Learning Works Seven Research-Based Principles for Smart Teaching.* San Fransisco, CA: Jossey Bass.

Awofeso, N., & Bamidele, M. (2014). Efficient instructor feedback: Perceptions of online UAE undergraduate and postgraduate public health learners. *Application and Theory of Computer Technology, 2*(3), 35-47.

Betlej, P. (2013). E-examinations from student's perspective – The future of knowledge evaluation. *Studia Ekonomiczne, 152*, 9-22.

Biggs, J., & Tang, C. (2011). *Teaching for Quality Learning at University.* Maidenhead: Open University Press.

Brown, G. A., Bice, M. R., Shaw, B. S., & Shaw, I. (2015). Online quizzes promote inconsistent improvements on in-class test performance in introductory anatomy and physiology. *Advances in Physiology Education, 39*(2), 63-66. https://doi.org/10.1152/advan.00064.2014

Chaudhary, S. V. S., & Dey, N. (2013). Assessment in open and distance learning system (ODL): A challenge. *Open Praxis, 5*(3), 207-216.

Dorgu, T. E. (2015). Different teaching methods: a panacea for effective curriculum implementation in the classroom. *International Journal of Secondary Education, 3*(6), 77-87.

Freimuth, H., & Charles, L. (2014). The KUPP journal who are our students? A closer look at the educational and socio-cultural influences that have shaped Emirati students. *KUPP Journal Editors*.

Gikandi, J. W., Morrow, D., & Davis N. E. (2011). Online formative assessment in higher education: A review of literature. *Computers & Education, 57,* 2333-2351.

Gunn K (1993). A correlation between attendance and grades in a first-year psychology class. *Canadian Psychology/Psychologie Canadienne, 34*(2), 201-202.

Hein, G. E. (1991). The museum and the needs of people. *A paper presented at the International conference for committee of museum educators in Jeruaslem Israel*, October 15-22 1991 at Lesley College. Massachusetts USA. Retrieved from https://www.exploratorium.edu/education/ifi/constructivist-learning

Imonje, R. K. (2021) Re-Envisioning Pedagogy in the Lens of Asynchronous and Synchronous Learning in Higher Education amid COVID 19 Pandemic in Kenya; Journal of Studies in Education; ISSN 2162-6952; 2021, VOL.11, No.4. Macrothink Institute

Jalal, M. F., Fedhil, S. S. A., & Hasini, H. (2014). Students, assessment through open-book concept for final exam. *International Journal of Asian Social Science, 4*(2), 217-225.

Laurillard, D. (2008). The teacher as action researcher: Using technology to capture pedagogic form. *Studies in Higher Education, 33*(2), 139-154. https://doi.org/10.1080/03075070801915908

Lemanski, C. (2011). Access and Assessment? Incentives for Independent Study. *Assessment & Evaluation in Higher Education, 36*, 565-581.

Li, B. (2013). Open-note vs. Closed-book exams. *Educational Theory and Practice*.

Liska, T., & Simonson, J. (2005). *Open text and open-note exams. The best of the teaching professor.* Madison: Magna Publications.

Makala, S. (2011). Open-book examination, a paradigm shift. *Journal of Literature, Culture and Media Studies, 3*(5/6), 263.

Millis, R. M., Dyson S., & Cannon, D. (2009) Association of classroom participation and examination performance in a first-year medical school course. *Advances in Physiology Education, 33*, 139-143.

Self, S. (2012) Studying absenteeism in principles of macroeconomics: Do attendance policies make a difference?. *The Journal of Economic Education, 43*(3), 223-234.

Sharma, M., Mendez, A., & O'Byrne. J. (2012). The relationship between attendance in student-centred physics tutorials and performance in university examinations. *International Journal of Science Education, 27*(11), 1375-1389.

Spivey, M. F., & Mcmillan, J. J. (2014). Classroom versus online assessment. *Journal of Education for Business, 89*, 450-456. https://doi.org/10.1080/08832323.2014.937676

Struyven, K., Dochy, F., & Janssens, S. (2005). Students' perceptions about evaluation and assessment in higher education: A review. *Assessment and Evaluation in Higher Education, 30*(4), 325-341. https://doi.org/10.1080/02602930500099102

Thatcher, A., Fridjhon, P., & Cockcroft, K. (2007). The relationship between lecture attendance and academic performance in an undergraduate psychology class. *South African Journal of Psychology, 37*(3), 656-660.

Vera, I. A., Udodirim, A. I., Ikechukwu, B. I. M., & Charity, O. O. (2020, September). Social constructivism: implications on teaching and learning. *British Journal of Education, 8*(8), 49-56.

Vuyisile, M. (2014, July). Assessment in a Transforming Higher Learning Institution: A Case for Open-Book Examinations. *Mediterranean Journal of Social Sciences, 5*(14).