INTEGRATING INTERACTIVE VIDEO TECHNOLOGY FOR MITIGATING EFFECT OF COVID 19 ON UNIVERSITY EDUCATION IN NIGERIA

[1]Dr. Goodfriday Kunuosowa Ntuno; [2]Rita Otibho Igbinovia & [3]Patricia Obigeli Iloh

[1]Department of Educational Foundations and Curriculum,
Ahmadu Bello University, Zaria
E-mail: gftunok4eva@yahoo.com

[2]Department of Educational Management, University of Benin
E-mail: ritaigbinovia@gmail.com

[3]E-mail: greatestpatriciailoh7@gmail.com

Abstract

Interactive Video Platform is one of the emerging educational technologies that encourages self-assessment and facilitates teaching and learning process in Nigeria Universities. The need for more training of educators in the emerging technology to adapt to fast changing education system on the use of e-learning and virtual education in the post-pandemic era, has become very imperative and an integral part of the University system. This paper therefore examined the impact of Covid-19 pandemic on the educational system and the need to embrace emerging educational technology for effective teaching and learning in Nigeria Universities. Also, the paper explained emerging technology, interactive video platform and identified the relevance of emerging technologies; impact, importance and challenges of interactive video platforms in the era of Covid-19 pandemic for effective teaching and learning. Conclusively, the application of emerging educational technologies was found to be very essential to university educational system where lecturers are expected to prove their expertise by addressing the learning challenges of the students. The paper suggested that lecturers should be trained to manage the educational changes as a result of emerging technology. Government should provide the needed emerging educational technology tools to facilitate teaching and learning in Nigeria Universities.

Keywords: Covid-19 Pandemic, integrate, emerging technology, interactive video platform, University system.

Introduction

The necessity of education to the growth and development of any nation cannot be over emphasized. Education brings about innovations and creativity which are achieved through educational technology. Ngozi and Abolo (2017) opined that educational technologies are the effective use of technological gadgets such as media and networking hardware including audio, images, animation, adaptive learning, streaming and interactive video platforms to facilitate learning in educational system. One of the emerging educational technologies that encourages self-assessment and facilitates teaching and learning process in Nigeria Universities is Interactive Video Platform. According to Aboyeji (2014) interactive video platform is an educational process that guarantees that practical skills are taught using video to enhance effective teaching and learning. This means that interactive video platform facilitate instruction process, encouraged students to developed proficiency and have control over the process of learning.

Moreover, Olagundoye and Omoluwa, (2020) stated that emerging educational technologies enables educators to develop the knowledge, skills and expertise needed to

address the learning challenges of the students. This implies that emerging educational technologies provides new creative ways to lecturers to motivate and engage students to attain their educational potentials. Also, emerging educational technologies enhances access to variety of learning resources which encourages collaborative learning and facilitates e-learning and interactive video platforms in Nigeria universities system especially in the era of Covid-19 pandemic.

Covid-19 pandemic has caused a huge interruption in the educational system in Nigeria and the world at large. According to World Health Organization (WHO), Coronavirus disease (Covid-19) is an infectious disease caused by a newly discovered Coronavirus. It is referred to as illness caused by a novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV). The virus was first identified amid an outbreak of respiratory illness cases in Wuham City, Hubei Province, China. It was at first reported to the WHO on December 31, 2019 and on January 30, 2020; the WHO declared the Covid-19 outbreak a global health emergency. Subsequently, on March 11, 2020, the WHO declared Covid-19 a global pandemic.

As the global pandemic caused by Covid-19 continues to spread, university system was disrupted. However, the Federal Ministry of Education, (in collaboration with its departments and agencies [MDAs], development partners, the Education in Emergencies Working Group in Nigeria (EiEWGN), and the Nigeria Education Group [NEG]), have developed a Nigeria Education Sector Covid-19 Response Strategy. The strategy sets out the framework for comprehensive and coordinated actions to alleviate the Covid-19 pandemic's immediate, medium, and long-term impact on the nation's education especially university system.

Moreover, as part of measures to curtail the impact of Covid-19 in Nigeria, the Federal Ministry of Education, through the permanent Secretary in the Ministry, on March 19th,2020 ordered the immediate closure of tertiary institutions, Secondary and Primary Schools across Nigeria. However, after several considerations by the Federal Government, on October 12th 2020, the Nigeria Ministry of Education ordered all Schools to reopen; mandating that stakeholders of schools must adhere to guideline and safety protocols provided by the Nigeria Centre for Disease Control (NCDC) which includes; maintenance of social distance, regulation on personal hygiene, use of nose mask, regular washing of hands with running water, use of an alcohol-based sanitizer, avoidance of touching of eyes, nose or mouth, covering of nose and mouth with one's bent elbow or tissue when coughing or sneezing, use of thermometer infrareds to check the temperature of University authorities, staff and students daily.

Notwithstanding the ways of providing solutions to this pandemic, University authorities have a responsibility to develop upon existing safety protocols to protect lecturers and students while remaining in compliance with the said guidelines by the Federal, State and Local Governments in Nigeria. These protocols have to drive training to ensure that everyone in University system is on the same page, actively taking ownership of personal and collective Covid-19 practices.

In other words, to effectively achieve the goals of continuous impartation of knowledge to students without person to person contact as obtainable in the conventional classroom situation in Covid-19 era, the need to embrace Interactive Video Platform for effective teaching and learning in University system in Nigeria becomes very imperative. It is

based on the above; the paper examined the impact of Covid-19 Pandemic and the need to embrace emerging technology for effective teaching and learning in Nigeria Universities.

Impact of Covid-19 on University Education in Nigeria

Covid-19 Pandemic had a devastating impact on University Education and has exposed the shortcomings of current education system. The need for more training of lecturers in emerging technology to adapt to fast changing education system has become very imperative. In the post-pandemic situation, the use of e-learning and virtual education may become an essential part of the University system. According to Khan (2020) to ensure the success of the virtual teaching method, lecturers are to acquire the requisite skills, knowledge and competence for online or interactive video teaching and learning. The shift from face-to-face teaching method to the virtual method explains the necessity for training of lecturers to develop competence on virtual education.

Also, the mandatory imposition of guideline and safety protocols provided by the Nigeria Centre for Disease Control (NCDC) which is alien and has become a new normal have contributed to the educational impediment of the Nigeria Universities. The guideline and safety protocols includes; maintenance of social distance, regulation on personal hygiene, use of nose mask, regular washing of hands with running water, use of an alcohol-based sanitizer, avoidance of touching of eyes, nose or mouth, covering of nose and mouth with one's bent elbow or tissue when coughing or sneezing, use of thermometer infrareds to check the temperature of University authorities, staff and students daily. According to Bania and Banerjee(2020) Covid-19 pandemic brought about preventing measures like maintaining physical distance and ban on public gathering which have led to the suspension of large classes and cancellation of academic activities like seminars, conferences etc. thereby causing educational tension in the Universities.

Another issue is centred on the possibilities of non-availability of electricity to run the online or interactive video programme during online teaching and learning process. This is in agreement with Miller (2016) who argued that technology might simply fail due to non-availability of electricity to run online teaching and learning programs. This explains that running videos, audios and programs on online mode and integration with the learning management system of the university might result in problems on the virtual platform.

Moreover, the sudden shift from classroom teaching and learning process to digital learning due to Covid-19 pandemic has caused a very serious impact on the access to technical infrastructure, competencies and methods used in interactive video teaching and learning process. According to Bania and Banerjee(2020) online or interactive video classes require long hours of internet service, peaceful space and one device/ phone dedicated to each student in a family, which might not be affordable for everyone. This by implication has created the digital divide between rich and poor and has raised new barriers for many students with disabilities, low-income and poor backgrounds, threatening their access to education.

More so, in a face-to-face environment, students get an opportunity to interact with their lecturers and colleagues in a classroom. Meetings with lecturers, classroom debates and discussions promote social connectedness among lecturers and students. On like the online or interactive video platforms where there is no connectedness. Thus, online

interactive video learning needs to accommodate the aspects of social connectedness in the university program design. According to Miller (2016), encouraging of cooperation and student connections is two of the principles that need to be taken into consideration in virtual education. Access to online libraries, books, journals should be created to promote remote teaching and learning since regular classes has been shifted to virtual mode of education.

Relevance of Emerging Technologies on University Education in Covid-19 era

Emerging educational technologies are crucial tools needed for learning and acquisition of skills for total development of the students. According to Olagundoye and Omoluwa (2020) emerging educational technologies enables educators to develop the knowledge, skills and expertise needed to address the learning challenges of the students. This entails that emerging educational technologies helped to empower academic staff to developed capability in effective teaching. Emerging Educational Technologies provides new creative ways of motivating and engaging students to attain their educational capacity very easily and also enhances access to variety of learning resources which encourages collaborative learning and facilitates distance education.

Interactive video platform is one of the emerging educational technologies that help in instructional delivery in Nigerian Universities especially in Covid-19 era. Interactive video platform provides easy methodology for students' comprehension, knowledge internalization and flexible instructional delivery. In the words of Etejere (2016) flexible instructional delivery service comprise any kind of learning that take place through the internet access, e-learning and interactive video platforms which was designed to complement the traditional learning process that use traditional approach like, lecturer centred approach, indoctrination methods for the teaching and learning process. One basic process that enhance effective teaching and learning as well as offers students the opportunity to access information at ease unlike the traditional face-to-face classroom methods which counteract Covid-19 safety protocols is interactive video platform instructional package.

According to Clothier, (2013) the benefits of interactive-video instructional package are the ability for the learner to play, replay, pause and rewind to any precise segment of the tape. In addition, it assists the students to deliver technical training about the procedure of carrying out a particular experiment and testing their skills. This emphasized that lecturers can effectively use interactive-video instructional package as a high-quality medium to arrest and stimulate the interest of the students.

It is therefore very clear that the emerging educational technologies are very relevance to university education system especially where university lecturers are expected to prove their expertise by addressing the learning challenges of the students in Covid-19 era.

Concept of interactive Video platform

Interactive Video is a non-linear digital video technology that encouraged students to have video educational materials re-examine each segment of the video as many times as they wish. According to Aboyeji (2014) interactive video platform is an educational process that guarantees that practical skills are taught using video to enhance effective teaching and learning. This means that interactive video platform facilitate instruction

process, encouraged students to developed proficiency and have control over the process of learning.

The Impact of Interactive Videos in the Classroom

Lynch (2020) summarizes impacts of interactive videos in the classroom as follows:

i.   **Personalized learning experiences:** Interactive videos offer students a sense of user-control in a way that allows them to design and organize their virtual learning environment and experience. They can watch and learn from these videos at their own pace without pressure from lecturers or classmates. Also, they at all times have a choice to either jump to advance contents of the topic or stick to the given basics. Interactive videos focus more on self-directory and self-decision making.

ii.   **Accessible and flexible:** interactive videos offer convenience to students and lecturers. It serves as simulations, learning sets, and support aids for teaching and learning.

iii.   **Immersive and engaging:** Interactive videos are immersive and are designed to be engaging given that students can be inconsistent at times, especially the younger generation—their attention span can be very short. They are made with certain captivating and interesting styles for students who can catch their attention and motivate them to watch and listen. Although these videos only provide second-hand learning experiences, it's a fact that students can learn so much for them. Some concepts are too hard to explain and demonstrate, and thankfully, many interactive videos are there to assist lecturers in helping students understand.

iv.   **Stronger connections**: It may sound quite ironic with the lack of face-to-face interaction, but interactive videos create strong lecturers-students connections, including emotional and social. Given the ongoing crisis, there's much less connection between lecturers and students, and technology fills that void. Students are now able to have emotional and social support from lecturers through online learning. Many interactive videos are not just for teaching but also for inspiring.

The importance of Interactive Video Platform on University System in Covid-19 era

Interactive video platform facilitates teaching and learning in university system. It involves interacting with multimedia learning materials, hardware and video disk or video tape as software to deliver the instruction. Adamu (2020) recognized the importance of interactive video platform education because of the associated benefits such that, it has flexibility in accessing the class work at their own pace, easy as self-study, submission of assignment and easy teleconference, virtual classroom and students-lecturers interaction. This explains that Interactive video platform provides easy methodology for students' understanding and flexible instructional delivery.

According to Papadopoulou and Palaigeorgiou (2016) opined that interactive video is a non-linear, digital video technology that allows students to have their full attention to educational materials and to review each section of video as many times as they wish. This means that interactive-video instructional package illustrates any form of video technology that offers opportunity to students to have several levels of interaction between the package and learners. The benefits of interactive-video instructional package are the ability for the learner to play, replay, pause and rewind to any precise segment of the tape. Interactive videos offer participants a sense of user-control

in a way that allows them to design and organize their virtual learning environment and experience.

Murray (2017) outlined four primary importance of interactive video that make teaching and learning process very easy in school as follows:

i.   Interactive video works well on any device. Teaching and learning on interactive video can easily take place through the use of PC, phone or tablet instead of using real-time streaming media servers.

ii.   Interactive video permits user-driven decision-making and a sense of user control. This can enable a more personalized learning experience and greater choice for the Students. Videos can be structured to permit lectures and students to select roles. Lecturers and students can choose how deep they want to go with the content to be used in teaching and learning.

iii.   Interactive video can engage the students in the content, encourage participation and bailout students who are feeling slow and uninteresting or are passive in teaching and learning process.

iv.   Interactive video is fast, flexible and very versatile. Video can stand on its own online as a micro learning asset. It can serve as mini-simulations, or performance support aids. It also, provides cloud-based authoring tools that are user-friendly and require short ramp-up times.

According to Papadopoulou and Palaigeorgiou (2016), interactive-video guarantee productive learning experiences and encourage self-assessment, assist learners' interactions with learning materials in which learners are allowed to move at their own pace. This means that interactive-video offers opportunity to students to have several levels of interaction between the package and learners.

Moreover, Clothier (2013) stated that interactive-video instructional package allows lecturers to provide students with recurrence of crucial stages in the production of traditional pottery by playing and replaying the interactive-video. This allows for effective teaching because of its ability to cater for the individual differences of learners.

However, Schoeffmann, Hudelist, Huber (2015) classifies video interaction methods in the following categories: capabilities to explain, tag or label segments or objects in video, capabilities to interact together with other users in a coordinated way, to interact with individual objects in the video, to support navigation inside a video, to filter video content and to generate summarized view of the content.

Challenges to Interactive Video Platform

The challenges of Interactive Video Platform can be summarized according to Weli and Ohaegbu (2017) as technological challenges, legislative challenges, epileptic challenges, behavioural challenges, disjointed instructional use, integrated instructional use, transparent integration and faculty challenges.

Some universities see interactive video platform to be a challenge due to access to network or poor signal from service providers and quality of service expected by the lecturers and students. The way students and lecturers use the technology and the genuinely to the implementation might hinder success. Also, legislatures might fail to

grasp the benefits of bringing interactive video technology to education, thus neglecting essential investments.

In a situation where the power supply is regular or constant, the possibility of using self-generated power become a very high cost to the school system. Sometime, the video may go off due to low voltage or abrupt power off and may damage the equipment. Moreover, behaviours, attitudes, expertise, and preconceived ideas can be a challenge when adopting any new technologies or teaching methods. This happens when the instructor is able to work with the technology, but is still unable to integrate it with the instructional goals of the university.

Also, integrated instructional use is a situation when the lecturer is able to integrate the technology into the instructional plans of the university, with the technology driving the instructional plans. In transparent integration, the focus moves from technology to content and instructional strategies. At this stage, the technology becomes one of many tools used by the lecturer to accomplish the educational goals of the university. Some lecturers are reluctant to teach on a camera and feel at disadvantage together with their students regarding video technology as a replay of weaknesses. However, where lecturers do not appreciate the technologies, particularly if they believe on their intellectual property it becomes Faculty challenges.

Conclusion

Emerging educational technologies are very essential to university educational system where lecturers are expected to prove their expertise by addressing the learning challenges of the students. The application of interactive video platforms by lecturers helps to make teaching more practical rather than theoretical, provide easy methodology for students' comprehension and knowledge internalization.

More so, the challenges that go with interactive video platforms such as legislature and behavioural pattern of lecturers, students and the society at large should be positively tailored towards the achievement of the university objectives. This therefore, call for urgent need for a paradigm shift from traditional methods of teaching and learning to the contemporary use of interactive video teaching and learning methods in the university education system especially in Covid-19 era.

Recommendations

The paper made the following recommendations:

1. Lecturers should be trained to manage the educational changes as a result of emerging technology.
2. Government should provide the needed emerging educational technology tools to facilitate teaching and learning in Nigeria Universities.
3. There should be regular power supply that will enhance interactive video in the universities.
4. Stakeholders should give education the financial support to enable them equip instructional resources.
5. Instructional technologies should be maintained to a sure completion of their lifespan.

6. Interactive video should be made available to the students to ensure effective teaching and learning process in the university.

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