

THE IMPACT OF INNOVATIVE PEDAGOGICAL APPROACHES AMONG NIGERIA UNIVERSITIES DURING COVID-19

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ABSTRACT

Education was among the sectors with the devastating impact of the COVID-19 pandemic. Before the pandemic, the Nigerian education system adopted a purely, face-to-face approach to teaching and learning in most of its universities. However, with the emergence of the lockdown condition and school closure, following the COVID-19 pandemic, both students and lecturers were helpless about how to continue learning in the face of the pandemic. In a bid to avoid brain-drain and prevent the total collapse of the education sector in the country, Nigeria joined other leagues of developed countries to incorporate e-learning in the education system. This paper investigates the challenges posed by, and the impacts of COVID-19 on university education in Nigeria while examining the impact of the Innovative Pedagogical Approaches that were utilized in ensuring a successful learning transition during the said period. It also examines the perception of students of Nigerian institutions of higher learning using the new digital culture induced by the COVID-19 pandemic. This paper showed that e-learning spurred education development in tertiary institutions in Nigeria, as it impacted positively on the educational process, unlike the physical chalkboard in the classrooms. Studies also revealed that some students of higher education in Nigeria had a low acceptance of virtual learning embarked upon by many higher institutions throughout the country during the COVID-19 lockdown preferring instead the traditional classroom setting due to poor internet infrastructure and lack of electricity and thus putting them in the "Laggards adopter categorization" of the

diffusion innovation theory, i.e., the group that is highly conservative and extremely slow to accept new technological innovations. Recommendations such as investment in digital infrastructure, training university staff on new teaching methods, and developing strategies for improving e-learning in university education were highlighted. Finally, the study concludes that the increasing access to new information and communication technology (ICT) via internet connectivity made access to education easier barring the previously insurmountable barrier of distance and location of higher education seekers during the period.

Keywords: COVID-19 pandemic, Education, Pedagogy, E-learning.

Introduction

The process of educating is metamorphosing and one of the greatest impetuses is the impact of information and communication technology (ICT) right from the 19th century when the first set of technologies were introduced. According to Kennah (2016), the usefulness of ICT in influencing instructional strategy in schools is traceable to the early 19th century when Skinner, an American psychologist, and a behaviorist, viewed that the development of educational media resources has profoundly influenced learning. Right from the 19th century, the usage of chalkboards, pencils, and pens has proven as the reliable and most popular mode of teaching and learning (Cuban, 2001). However, the automation procedures that cut across all spheres of human endeavors have changed the way educational routines, including teaching, and learning processes are carried out.

In 2020, the world was faced with a pandemic that held the economy at ransom not exempting the educational sector. The coronavirus tagged COVID-19 according to Ozili and Arun (2020) is a novel strain of severe acute respiratory syndrome (SARS) species. The COVID-19 pandemic was first detected in Wuhan, the capital of Hubei, China in December 2019. It was pronounced as a pandemic by World Health Organisation (WHO) on March 11, 2020. (McKibbin & Fernando, 2020) opined that COVID-19 is caused by the SARS-COV-2 virus and this starts with symptoms of high fever, dry coughing, sore throat or diarrhea, and shortness of breath. The pandemic became a global phenomenon and spread from country to country as an invisible enemy, it worked against the economy, social and psychological behavior of citizens in a nation. It affected all aspects of human life, including religious, social, cultural, sporting, career, and educational activities.

On February 27, 2020, the first case of the pandemic was reported in Lagos, Nigeria, through an Italian citizen who was confirmed as carrier of the virus (NCDC, 2020). This Italian citizen travelled to the country from Milan, Italy on 24th February 2020 via Muritala Muhammed International Airport, Lagos. He then proceeded to Ogun state on 25th February 2020 for an assignment, while in the state, he was discovered with high index suspicious on 26th February 2020. On 27th February 2020 he was confirmed at Infectious Diseases Hospital (IDH) Yaba, Lagos as COVID-19 carrier and as the first to be identified as importer of the virus into the country.

The Covid 19 virus brought about changes and disruptions in the educational sector which is a spring ball for the development of any nation. The impact of this virus disrupted the global educational system as most countries around the world resulted in temporary closure of all educational institutions in attempt to contain the spread of the pandemic.

From the global perspective, the COVID-19 pandemic has made the largest devastative

impact on the educational sector and affected learners and teachers from pre-primary to the tertiary education level (Andreas, 2020). Universities closed their premises and countries shut down their borders in response to lockdown measures. Findings from 200 countries in the mid-April 2020 showed that 94 percent of learners were affected by the pandemic around the world, which represents 1.58 billion learners (United Nations, 2020). Additionally, UNESCO (2020) reported that the closure of higher institutions has affected over 91 percent of the students' population in the world and those 23.8 million students may drop out or not be able to secure admission to schools in the 2021 academic calendar.

Nigeria like every other country was hit with the pandemic. Going by the rapid rising cases of COVID-19 in the country, the Federal Government of Nigeria locked down two states (Lagos and Ogun) where the index visited, and FCT Abuja while other affected states joined as the coronavirus spreads. This effect of this closure was evident in the Nigeria educational sector as the academic session was halted by the Federal Ministry of Education to curtail the virus in educational institutions. Report of Education in Emergency Working Group showed that about 46 million Nigerian students were affected by the schools' closure (EiEWG, 2020); this is very significant as it represents 25 percent of Nigerian total population.

In order to ensure that learning was not halted, the transition to online learning was the only option during the situation's gravity because of the COVID-19 outbreak. Despite the fact that the process was not devoid of challenges, students were able to adapt to the new learning methods. This paper, therefore, aims at understanding the impact of this timely modification in the university system while considering the challenges that were faced.

The E-learning Transition

The astronomical increase in the deployment of technology in the learning and teaching processes has led to an increase in investments in education technology companies (Future Today Institute, 2020).

For instance, in 2019, investments in education technology companies increased by 18.66 USD billion. To underscore the shift to and importance of technology deployment in learning and teaching processes, the sum of investments to the education technology companies in 2018 and 2019 far outstrip such investment for the period between 1998 and 2017 (MarketInsider, 2019).

E-learning, online learning, virtual learning is one of the most significant educational innovations driven by expanding array of technology enabled platforms that offer potential learners an alternative and innovative learning environment compared with traditional learning and, thus, represents IT-based innovation in education (Bates, 2007; Wang, 2009). Virtual form of learning has advanced as a major means of education in the developed world even before the pandemic (Kyari et al., 2018). This form of learning is adjudged to be better than the usual face-to-face interaction because it has the advantage of reaching many learners at the same time and does not require them to come together in a place or under a common roof (Ajadi et al., 2008).

According to Eze et al. (2018) and Rennes (2015), e-learning education is the all-inclusive blending of ICT gadgets and modern telecommunication equipment such as video, audio, or computer technologies, use of technology such as CD-ROM, and even by written correspondence or via storage device such as USB-enabled saving tools into the education system in a synchronous or asynchronous context to exchange instruction (1998). E-learning is individualized in that it can be fitted to one's individual pace. At the same time, it can also be group-based and tailored toward a specific target group.

It is online when the studies require internet connectivity, it is offline when the resources for the learning do not necessitate a constant online connection, and it is synchronous when all learners work together at the same time versus asynchronous when learners can work at different times (Naidu, 2006). It is a learning process that involves the connection of digitally conveyed content,

system-based administrations, and mentoring bolster (Zhang et al., 2010; Markus and Robey). E-learning enables a high level of interactivity among the instructor and students creating flexibility between the two whether it be undergraduate or graduate-level instruction.

E-learning has offered tremendous opportunities for teaching by electronic means (Kacerauskas and Kusaityte, 2020; The World Bank, 2020a). Further, studies by (Keramati et al., 2011; Bhuasiri et al., 2012; Chen and Tseng, 2012; Ahmed, 2010; Hu and Hui, 2012) show that e-learning adoption by vast number of HEIs, professional organizations and learners is motivated by geographical and savvy remote reach, separate learning environment, juicy paybacks/returns, continuous upgrades of skills within a short time, learners' control in terms of adaptability, flexibility and convenience, and cost effectiveness in course/programme delivery and management. According to (O'Neill and SinghO'Donoghue, 2004; Renes, 2015), many higher institutions around the world are embracing online learning (i.e., e-learning) to offer educational opportunities to prospective students such as those for whom availability in the location of the university is impossible, students with full-time employment who cannot leave their jobs, and physically challenged persons as well as parents with children and military personnel amongst others. Andreas (2020), Eze et al. (2018) maintained that E-learning is a hallmark of distance learning.

The virtual learning process entails the use of three broad categories of technological tools: Real-time social media channels-WhatsApp, Telegram, YouTube, Facebook; Asynchronous learning processes which involve the use of a Discussion board and Digital library; and Video conferencing tools such as Microsoft Teams, Zoom, Google Hangout, WebEx, Skype, Google Meet, etc. (MarketInsider, 2019).

In summary E-learning offers entirely new answers to the question of what people

learn, how they learn, and where and when they learn.

The Switch from Classroom to E-learning among Nigeria Universities

Education is a means of self-development through learning, knowledge, skills, and habits conveyed across generations. The importance of education for the economic, social and moral development of nations cannot be under-estimated. It is of significant concern that education at all levels has been threatened since the emergence of the novel coronavirus disease 2019 (COVID-19). The COVID -19 pandemic shaped a new normal for the higher educational sector across the globe as remote learning became the lifeline for education during the pandemic.

Li and Lalani (2020) stated that COVID-19 has impacted education globally and pushed over 1.2 billion students out of the classroom, thus causing the need to explore other means of educating school children. They argued that language applications, virtual tutoring, video conferencing tools, and online learning software have significantly surged since the outbreak of COVID-19 with financial investments in education likely to increase from USD 18.66 billion in 2019 to USD 350 billion by 2025—prompting many platforms to offer free classroom services.

During the onset of the COVID-19 pandemic, Nigeria joined other leagues of developed countries to incorporate e-learning in the education system. Higher education institutions (HEIs) in Nigeria embarked on rigorous programmes that promote the use e-learning for effective contact, teaching and learning. It was a practical avenue to avoid drawback in the Nigerian education system and also ensure the school system did not collapse.

In a survey by Egielewa et al. (2021), it showed that free learning tools were very popular for online learning during the COVID-19 pandemic with Google Classroom, WhatsApp, and Zoom (i.e., 70.4%) while only 16% of institutions paid for online learning via the LMS. Their findings also indicated that many online

lectures were majorly text-based rather than audiovisual such that camera-based interaction between students and teachers was 1 in every 10 online lecture interactions. This may be linked to text consuming less data than audio and video services. Similarly, the study revealed that 1 in every 10 students did not participate in online lectures during the pandemic. Moreover, two-thirds of all institutions of higher learning in Nigeria that engaged in semester-based online activities were universities. Similarly, a study carried out by Okeji and Alex-Nmecha (2021) on 1,290 students and five lecturers from five universities in Nigeria shows that Zoom and WhatsApp were the most used by the lecturers to deliver lectures to their students.

Impact of the Innovative Pedagogical Approaches

According to Okeji and Alex-Nmecha (2021), availability of lecturers, opportunity to store lectures and files for re-use at convenience, collaborative learning (i.e., participants can interact at ease), room for sharing learning materials, freedom in asking lecturer questions and conducive learning at home were mentioned as some of the benefits of E-learning during the period. Also, Hurixdigital (2020) and Nnajofofor and Achukwu, (2011) listed flexibility (i.e. Participation from any location), cross-platform accessibility (i.e. use in several digital tools), low delivery costs (i.e. ability to reach many participants with the same cost), and scalability (i.e. content can be accessed by any size audience) a benefits of this innovative pedagogical approach.

Studies have shown that students that undertake electronic studies generally performed better than those in face-to-face courses. This was confirmed by Andreas (2020) who opined that the academic performance of learners that used the electronic approach supersedes those who studied the traditional approach. Gutierrez (2020) noted that the retention rate of things learnt was 25–60% in e-learning compared to 8–10% in classroom learning, and students learn five times more materials in e-learning

than they would do in the classroom even though the students spend 40–60% less time in e-learning than in classroom learning.

In a study by Oyediran et al., (2020), Nigerian private universities are at the forefront of e-learning implementation due to their innovative and flexible operations. Private universities have also embraced the e-learning platform to continue and sustain the academic calendar, and increase revenue generation to the school pulse. Also, lecturers from private-owned universities in Nigeria responded instantly to the demand for a sudden shift to virtual teaching than those from the public-owned universities. This is due majorly to the unresolved industrial dispute that started before the outbreak of the COVID-19 pandemic. The implication of this is that the pandemic had greater consequences like poor performance on the students from public-owned universities than those from private ownership. Studies also showed that Nigerian private universities would soon completely shift to digital education and able to offer courses beyond the shore of the country as it is being practiced in advanced countries. This will go a long way to improve the nation's education quality and standard and ranking among the countries of the world.

Findings by Egielewa et al. (2020) revealed that students at several Nigerian universities were positively disposed to e-learning. This was confirmed in their studies that show that approximately two out of every four students of higher institutions that were satisfied with the online learning activities during the pandemic were university students. These findings correspond with studies by Adewole-Odeshi (2014), Bali and Liu (2018), and Opeyemi et al. (2019) which found that students at several Nigerian universities were positively disposed to e-learning.

In support of the findings of Olatokun and Opesade (2008), Nwagwu (2021) surveyed the opinion of lecturers in the premier university concerning their perceptions regarding e-preparedness of the university and them as stakeholders of e-

learning. Two hundred and forty (240) academics participated in the survey through a structured questionnaire; results showed that the lecturers were confident that the University possessed the IT capacity in terms of infrastructure and staff regarding e-learning implementation. They were however indifferent concerning the ability of the students to be able to key in into the e-learning scheme based on the students' perceived low knowledge of e-learning, lack of sufficient IT and web skills to drive e-learning.

According to Gambari et al., (2018), the effectiveness of e-learning platforms is not debatable as the flexibility of the e-learning platforms has made more students to be able to grasp the information received through e-learning. This is in contrast to Joseph et al., (2021), whose findings from a survey of 435 students of a university show that 414 (95%) of the respondents believe that classroom setting is more effective compared to 21 (5%) that believe that online teaching is more effective. However, Joseph et al., (2021) results of 370(85%) students of the surveyed universities corresponds with Bernard et al. (2004) who found that in terms of format, the performance of online learners was far worse than that of the traditional learners, but comparatively, in terms of attitude, retention outcomes and achievement, there exists no significant difference.

Since electronic learning platforms are free and can be used at liberty, they require self-discipline and more responsibility from students and lecturers. Initially this was a challenge, however as the students came to the realization of the fact they had no other options, most especially as examinations set in, they became more discipline and responsible to the course schedules. It also requires lecturers to generate new skills, be cognitively sensitive and well-sequenced.

Challenges of E-learning

Despite the swift intervention of e-learning during the Covid 19 Era, it was not

devoid of challenges. Some of the challenges are therefore considered below.

According to Adeoye et al. (2020), poor budgetary allocation, corruption and unpreparedness were contributing factor to the inability of many public tertiary institutions to embrace e-learning during the global Covid-19 pandemic in Nigeria. This was the case as predicted by Ndujibe (2018) who stated that the ten year (2010-2019) budgetary allocation to the Nigeria educational sector has been very poor and below the 15 to 20 percent recommended by UNESCO for developing countries like Nigeria. Budgetary allocation such as these ones does not allow growth of e-learning and therefore created challenges for these institutions who tried to embrace e-learning during the COVID-19 pandemic. In fact, Onuoha and Peter (2010) added that beyond the paltry budgetary allocation is the issue of budget implementation, which has hitherto remained unsatisfactory and has not helped in any way in improving the quality of life of the people.

E-learning requires basic infrastructure that makes it possible for the process to be effective. Some scholars (Bansal, 2020; Goldstein et al., 2020; Lau et al., 2020; Srivastava, 2020) argue that e-learning does not achieve as much as classroom learning because of poor access to digital tools such as computers, internet connectivity, and the digital divide. Srivastava (2020) found out that as of 2018, only 21.3% had access to computers in their schools while Lau et al. (2020) posit that a real university environment is irreplaceable and the key to deep understanding. In much of the developing world, acquiring digital tools such as laptops and smartphones is expensive. Digital tools to power e-learning are imported to Nigeria since the country has not been able to develop its local manufacturing industries. The Business Day Forex Monitor (2020) quoted that “The cost of importation during the peak of the covid 19 virus in 2020 soared high to about ₦480 to \$1USD going by the significant pressure on the demand for foreign exchange amidst low

foreign exchange supply. This obviously led to inflation and escalating prices of ICT hardware. Computer accessories became too expensive to buy and thereby an impediment to e-learning. Adeoye et al. (2020) reported that the price of computer hardware and software was several times more expensive in Nigeria than in advanced countries. Also, in Nigeria, data are also not cheap, and given the poverty level is at approximately 40% of 200 million people, this translates to a population of 74 million low-income earners (City Population, 2020; Punch, 2020). As a result, acquiring the necessary equipment for effective e-learning was challenging for the low-income proportion of the population.

The power supply in Nigeria is erratic, barbaric, and worrisome. It has become a national problem, very embarrassing as it affects all sectors in Nigeria (Oyediran and Dick, 2018; Adeoye et al., 2020). Part of the effort put in place by the government was the diversification of power source from hydroelectric to the use of gas to generate higher megawatt yet there is no significant improvement, it is even getting worst. The power generation in the country is abysmally low, about 1400 Megawatt (This Day, 2016).

In summary, four clusters of challenges inhibiting the successful implementation of online learning in Nigeria, challenges which border on infrastructural deficiency in the country (i.e., cluster one), namely, network problems and lack of power, Poor internet connectivity was also found in the studies of Olaniyi (2006), Afolabi and Uhomoibhi (2017), and Li and Lalani (2020) as the major hurdle to online learning. Other clusters of challenges include cluster two which are personal factors (i.e. lack of motivation, boredom, and sheer laziness ,cluster three which is financial (i.e. inability to buy enough data), and cluster four which are environmental factors (i.e. distraction by family members and too much of noise, In other words, infrastructural problems are the most serious challenges to effective student online learning in Nigerian higher institutions followed by personal, financial, and environmental factors.

Recommendations

As more “tech-savvy” generations enroll in higher education, the university needs to ensure that blended learning in the curriculum is sustained to enhance the effectiveness of lifelong learning.

According to the WHO, the risk of a resurgence of the pandemic remains. If this is the case, the necessary social isolation measures may disrupt university education for several months in most countries around the world, as well as in Nigeria. This would require continuity of teaching activity using virtual modality. Therefore, since e-learning has proved to be an attractive, cheap, and easy way to deliver courses, it should be supported by investment in digital infrastructure to enhance the quality of learning during such a period. There is also a need to design the best features of classrooms and e-learning to improve the overall learning environment. Further research to identify other effective online and offline teaching modalities is also needed. Also, the university stakeholders should formulate a meticulous model through the integration of an optimal proportion of online learning in university education. Finally, government budgetary allocation Nigeria educational sector should be reviewed to at least meet the 15 to 20 percent recommended by UNESCO for developing countries like Nigeria so as to allow growth of e-learning among Nigerian universities

Conclusion

The pandemic utterly disrupted the education system that many assert was already losing its relevance, particularly in Nigeria. However, e-Learning based on its proven positivity, became the catalyst that created a new, more effective method of education where there was cross-border information, knowledge and skill sharing globally. It became the indispensable intervention that cushions the impact of the COVID-19 pandemic.

Although the advantages of e-learning during the Covid 19 era, which included wide coverage, cost-effectiveness, uniformity, fast teaching and learning process, and rapid

economic development through e-commerce, it can also be concluded that the failure of online learning during the COVID-19 pandemic was hinged on two critical sectors of the national infrastructure, namely, poor power supply (i.e., electricity) and internet connectivity issues (and accessibility).

Report from previous studies has shown that students of Nigerian higher institutions did not accept the technological innovation of online learning in their studies, and preferred the “old” method of physical classroom learning. This was an indication that they probably belong to the “Laggard’s adopter categorization” of the diffusion innovation; that is, the group that is highly conservative and extremely slow to accept new technological innovations. This may, thus, explain student reluctance to embrace the innovative idea of online learning.

It can be concluded that despite the impact of e-learning during the pandemic era there existed variation in e-learning compliance across different universities with the private universities having the highest level of compliance with e-learning during the COVID-19 pandemic; this is a pointer to the fact that e-learning has not been effectively incorporated into universities in Nigeria.

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