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Students' Virtual Classroom Experiences in the Post-COVID-19 Era

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ABSTRACT

This study examined students' desirability for virtual classroom attendance, identified students' perceived challenges in virtual classrooms, and established students' preferred mode of instructional delivery in the post-COVID-19 era. These were to explore the experiences of Nigerian university students in receiving university education in the post-COVID-19 Era. Using the survey approach of quantitative design, the study covered 35,000 undergraduates and postgraduate students of the Obafemi Awolowo University, Ile-Ife, Nigeria. It drew 25 respondents randomly from the 13 faculties and two colleges in the university, making a total of 375 samples for the study. A 25-item electronic Google survey titled 'Post COVID-19 University Education' (PCUE) was designed and circulated via various students' platforms on social media (WhatsApp and Telegram) to elicit responses. The data collated were analysed and presented descriptively. The study found that university students: do not attend virtual classrooms regularly, encounter challenges that restrain them from participating in virtual classes, and prefer the hybrid mode of instructional delivery. It was, therefore, suggested that the hybrid mode of instructional delivery should be further encouraged among university teachers.

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1. INTRODUCTION

To date, COVID-19 seems to be unique among all the pandemics that have ravaged the world in the past. This might not be unconnected with the fact that it affected all areas of human life, including education, across the world. To curtail the spread, there were pronouncements of total or partial lockdowns of the global economy. Due to this, instructional delivery in Nigerian universities switched unexpectedly from a predominantly face-to-face mode to a fully virtual or hybrid mode. This necessitated a fundamental change to the core university activities of teaching and learning. However, universities in the West were not as badly hit as those in developing countries such as Nigeria. This is because they were able to, within a short time, migrate from physical to virtual mode of instructional delivery as E-learning was already an integral part of their university education before the pandemic.

The COVID-19 outbreak has revealed how universities in Nigeria were unprepared for a drastic shift from face-to-face to virtual learning mode, due to insufficient and obsolete requisite infrastructure to deal with the altered university activities of teaching and learning. According to Abdulazeez (2020), public universities in Nigeria were unable to cope with the challenges of virtual learning as a result of their low level of technological development. Lecturers and students in the universities found the changes imposed by the pandemic challenging. This was not because they had to transition to a new mode of teaching and learning, but because they had to contend with many other factors that influenced their experiences. Lecturers, in many cases, had to rework their teaching material to provide content for virtual delivery, without the necessary training or support to do so. Also, some students found it difficult, and at times impossible, to study at home, possibly a reflection of their socioeconomic status. Other factors such as low bandwidth (Oladipo *et al*., 2020), lecturers' poor knowledge of using technology-aided materials to support teaching (Akinyemi *et al*., 2020), financial inability of parents to meet their children's demand for required devices for virtual learning (Bolarinwa & Atunwa, 2021), and poor level of disposition of university administrators (Adeola & Mabayoje, 2021) were also noted as impediments to the success of virtual instructional delivery in Nigerian universities.

The pandemic has brought dangerous dimensions for university education in Nigeria, with challenges of coping with students who are unprepared for alternative learning modes and have been away from school for some time. Some of these students rely on physical settings in their universities to provide educational materials, guidance, and, sometimes opportunity to trade and network for assistance. Therefore, students, parents, and the communities have come to realise the roles of physical interactions in the effective teaching and learning processes.

Meanwhile, university education can be both rewarding and challenging (Ogunode & Abubakar, 2021). This is because it takes place at institutions that teach courses leading to the award of degrees and conduct research to provide solutions to identified societal problems. Thus, one of the challenges confronting university education is teaching and learning related. Deborah (2020) reported that high disparities in Information Communication Technology (ICT) and internet broadband connectivity exist across socio-economic status and rural-urban cities. This is most evident among students from low economic backgrounds in the rural communities and those living in poverty line areas, many of whom ordinarily require financial support, even in a normal situation.

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Classroom attendance is a common practice towards ensuring two-way communication. It is the act of being present at a meeting, class, or an event. Class attendance, according to Gottfried (2010), is the regular participation of students in class activities. Through this, students access regular education assistance to improve their academic performance. The act of being physically or virtually present in a class for a lesson at a given period. Boyanle and Harrinson (2020) posited that it is the act of physical participation in the class activities during a lesson or participating through a video or audio platform. Roby (2004), Fleming (2008), and Oghuvbu (2010) concluded that class attendance is a must for students to be highly engaged in learning activities. In a school setting, class attendance can be observed physically or virtually. It is physical when students are physically present and virtual when students are not physically present but attend through online platforms. Class attendance must be maintained against the school's set standards. In Nigerian universities, such a standard is that students must have at least 75% attendance to qualify to write of end-of-semester examination. However, students' absence from class could only be entertained, without penalty, on account of a certified ill-health condition.

Boyanle and Harrison found that students' attendance in the physical class is responsible for improved academic performance than that of virtual class. In another study, Sekiwu *et al*. (2020) found that more students attended face-to-face classes when compared to virtual classes. Similarly, Roby (2021) found low student attendance in virtual classes because students complained of getting tired of having to constantly connect to learn. Hence, attendance dropped in many virtual classes occasioned by the COVID-19 pandemic. Students' attendance in virtual classes is not encouraging, as they easily skip classes due to issues associated with online learning.

With the global reduction in COVID-19 cases, the federal government of Nigeria had relaxed various restrictions that were in place. Therefore, physical interactions gradually resumed, and face-to-face teaching-learning activities returned to Nigerian universities. University education does not underestimate physical interaction and stakeholders' free expression of ideas. It is an illusion to think that the virtual mode of instructional delivery in the university is the way forward to replace physical interaction. To sustain and protect university education under unpredicted situation created by any form of pandemic, to facilitate learning and continuity of human existence, and support the universal right of people to education, alternative mode can be opted for as a temporary arrangement in times of pandemic (Fasanmi & Adebakin, 2023; Zhou & Zhang, 2021). This will ensure that decades of progress and development made are not a mirage, given the importance of university education as a means for exploring the global common good. To achieve this, university education must be seen well beyond expanding and democratising the ways it is provided, but consideration must also be given to the ways of providing and disseminating it at all times, irrespective of the situation.

Over two decades, issues confronting universities have been at the top of higher education discourse (Dumford & Miller, 2018; Davis *et al*., 2019). As a result of technological advancements, university education has changed dramatically. This might not be unconnected to the position, who concluded that the increasing use of ICT and the ability to network space and time for teaching modes and objectives of university education have also been acknowledged by stakeholders. Hence, university education today has been confronted with a new generation of students whom Prensky (2016) referred to as the digital natives. University students are heavily influenced by various digital media without professional skills to use digital technology, but have acquired a range of new learning styles and methods of using them. The digital proficiency of this category of students is at variance with that of the

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less digitally proficient lecturers teaching them. It is a must, if a university is to stand the test of time, to attend to the observed differences and ways of using digital knowledge to enable a more interactive and quality university education in Nigeria.

New learning styles acquired by new university students to include active learning based on experience, collectively seeking, analysing and synthesising experiences, co-design the learning experiences personalized to meet individual needs and preferences and expression through non-linear, associational webs of representations rather than linear stories, and fluency in multiple media. Literature on university education has grown increasingly in the study of key issues about the mode of delivery. Dumford and Miller (2018) argue that students in the university are less engaged in group learning, student-faculty discussion with their peers. In addition, major issues confronting university students include interpersonal and communication skills (Adebakin *et al*., 2015) as well as productive use of learning aid technology (Adebakin *et al*., 2021; Ajadi & Adebakin, 2022). Issues have also been raised by researchers during performance assessment in universities. The upsurge of varieties of teaching pedagogies led to e-learning in universities. However, a less addressed challenge is not whether technology will replace physical interaction but whether technology will drive the redesigned university education.

Making clear distinctions between virtual and physical teaching modes in universities has been a subject of discourse. There is a need to comprehend the best way to support innovation and group learning, making use of relevant instructional aids irrespective of the mode of delivery in the university. It is also important to identify the form of technology that will support the existing pedagogy or change it. Capitalising on new teaching technology in emergencies is not enough in the university, as the situation demands that these technologies must be used to engage students on a higher level. This, to Watson (2011), propels other researchers to give attention to technology over pedagogy, which is a barrier to effective integration of technology for quality university education.

Virtual can be complementary to the physical mode of instructional delivery in the university. This accords with the fact that today's hybrid mode is the most popular pedagogy in universities in the West (Ajadi & Adebakin, 2022). According to Khlaif *et al*. (2021), a hybrid model is featured by the mix of rigorously chosen virtual and physical methods and design in agreement with the course content. To bring about a more effective hybrid model, several approaches are required.

Students' perceptions about university education are how university education is regarded, understood, or interpreted by students. It can also be referred to as the students' awareness, comprehension, or understanding of university education. The students' perceptions about university education during the COVID-19 pandemic are influenced by technology. Competition between virtual and face-to-face modes is most likely, according to the motivations to mix digital technologies and face-to-face to ensure quality education comes to the fore. Despite the general held critique that digital technologies are transforming university education or in some instances, disrupting the students' learning around the world, Adebakin *et al*. (2021), and Henderson, *et al*. (2017) perceived digital technologies as an integral part of university education all over the world.

A recent study argued that students perceived hybrid teaching mode as the possibility of enabling qualitative engagement with the course materials, teaching, and non-teaching staff, with increasing university education demand irrespective of situation and environment (Peimani & Kamalipour, 2021). Hence, attention should be paid to the capacity development of digital technology to support and enhance students' university education. This is why Wright *et al*. (2014) referred to university students as digital residents. They are used to

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perceiving digital technologies as seamless and interactive social spaces. In this case, digital space, such as the internet, acts as a way of life instead of merely a form of functional tool. Henderson *et al*. (2017) investigated 1,658 undergraduate students' actual perceptions of digital technology. The study found 11 particular digital benefits varying from flexibility of place and location, organising and managing the logistics of studying, to the ability to review, replay, and revise digital materials.

The disruption caused by the COVID-19 pandemic changed the university landscape. Studies, Adebakin *et al*. (2021), Ajadi and Adebakin (2022), Fasanmi and Adebakin (2023), Gamage (2020), Peimani and Kamalipour (2021), as well as Watermeyer *et al*. (2021), perceived the dynamics of virtual education in the university across different content and context during the pandemic as a complementary mode that cannot replace the traditional face-to-face means in the university as a result of the type of students in the universities all over the world. In a related study on the perception of students on the use of computers and smartphones to access study materials, Tick (2019) established that computers, rather than smartphones and internet access, were essential to access study materials. This was identified as a problem for students to access university education during COVID-19, hence, the reversal to the face-to-face mode of learning. However, university students in South Africa mostly access the internet from their smartphones but prefer face-to-face because it is prohibitively expensive to buy data for accessing lectures. Furthermore, students prefer a conventional interaction mode in the university because those who usually have to hold down jobs to support their studies in universities found themselves unemployed and without funding when the virtual mode was deployed.

Gamage *et al*. (2020) provided information on how COVID-19 and increased use of learning technologies to support virtual teaching have posed challenges to academic integrity management and assessment security. In a related study on the experience of online teaching during the COVID-19 lockdown in the UK, as well as the opportunities and challenges associated with the online mode of course delivery, students are not satisfied with upholding virtual mode in place of face-to-face. Kamalipour and Peimani, therefore, recommended that focusing on pedagogy should be prioritised over focusing on technology in course delivery. This finding further highlights the importance of challenging and exceeding stereotypical pedagogies to enhance the productive capacities of resilient and adaptive approaches to virtual teaching and remote learning. In another UK-based survey by Watermeyer *et al*. (2021), a large number of academic respondents from various disciplines and positions debated critically about the dark side of the rapid digital transformation, whereas only a small group of optimistic academics articulated the capacities and viewed the pandemic as an opportunity to deliberate its impacts on university education.

COVID-19 and its attendant consequences have been exhaustively debated in various contexts across disciplines. Studies in education, particularly university education, have largely noted that the pandemic has disrupted teaching-learning activities with its numerous challenges (Adebakin *et al*., 2021; Ajadi & Adebakin, 2022; Bolarinwa & Atunwa, 2021). However, there is a dearth of research evidence on the post-COVID-19 experience of students about their learning challenges during the post-pandemic era. Consequently, this study filled the apparent gaps in research and literature on students' views of the state of university education in the post-COVID-19 era. Thus, this study:

(i) examined students' desirability for virtual classroom attendance in the post-COVID-19 era;
(ii) identified students' perceived challenges in virtual classrooms in the post-COVID-19 era; and

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(iii) established students' preferred mode of instructional delivery in the post-COVID-19 era.

2. METHODS

This study employed the quantitative design using the survey approach to explore the views of selected Nigerian university students (undergraduate and postgraduate) on university education in the post-COVID-19 Era. The design, using quantitative data, provides a comprehensive analysis of the research problem and presents a complete understanding of the variables as they are perceived by Nigerian university students. As a result, the researchers were able to conduct an in-depth assessment and analysis of university students' views and perceptions to describe and interpret their instructional method preference. The study covers 35,000 undergraduates and postgraduate students of the Obafemi Awolowo University, Ile-Ife, Nigeria, who served as respondents for the study. The entire 13 faculties and two colleges in the university were chosen to ensure adequate distribution and representation of respondents. The sample of the study was determined using the research advisor. At a 0.05 level of accuracy of the population size, 25 respondents were selected randomly from each faculty and college, giving a total sample size of 375. This technique was to ensure an equal chance of being selected among the respondents.

A 25-item electronic Google survey titled 'Post COVID-19 University Education' (PCUE) was designed to elicit the views of university students on the subject. The survey link was circulated via various students' platforms on social media (WhatsApp and Telegram), and responses were automatically generated through the back-end of the Google survey. The choice of electronic survey was informed by its widespread use in recent research (Caputo, 2017), safety precautions against COVID-19 infection, and easy access to diverse respondents across disciplines. The survey was measured on a 4-point Likert-type rating scale with appropriate response structures coded 4, 3, 2, and 1 for ease of data administration, collation, and analysis. The data collated were analysed quantitatively using version 20.0 of the Statistical Package for Social Sciences (SPSS). The descriptive statistics of frequency counts and percentages were used to answer the research question raised.

In compliance with research ethical standards, all the activities involved were jointly conducted by the researchers. The researchers obtained a letter of authorisation from a relevant unit of the university to administer the survey before the circulation of the link. Consent from all respondents was also sought before engaging them in the completion and participation in the survey. Respondents were assured strict confidentiality of their opinions and anonymity of their personality.

3. RESULTS AND DISCUSSION

3.1. Research Question One: What is the desirability of students for virtual classroom attendance in the post-COVID-19 era?

To answer this question, a structured four Likert-type rating scale was used. This structure includes N- Never, O – Occasionally, AE - Almost every time, ET– Every time. The summary of the results is presented in **Table 1**.

Table 1 shows how many university students desired to attend virtual classes. Views expressed by students showed that virtual classes were not interesting to them, as they either never had interest (66.1%) or occasionally developed interest (33.9%) in attending virtual classes. Students also expressed their views on the time schedules for virtual classes. The majority (80%) occasionally find the timing convenient, a few others (16.8%) do not, while only 3.2% found the timing convenient almost every time. Furthermore, the results showed that students (60.8%) missed virtual classes as scheduled almost every time, while 26.6%

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missed classes occasionally. Others either missed classes every time (6.6%) or never missed any class (6.1%). As a follow-up statement, the results showed that regular attendance in virtual classes was only maintained almost every time (13.3%) or every time (6.6%) by 75 students, while the remaining 300 students either occasionally (53.3%) or never (26.7%) maintained regular attendance. Lastly, except for only 75(20%) students who occasionally desire to be taught virtually, others (80%) do not desire to have their courses taught using virtual mode.

Table 1. Students' desirability for virtual classroom attendance.

Item	N=375			
	N	O	AE	ET
Virtual classes are interesting to me	248 (66.1%)	127 (33.9%)	-	-
Virtual classes are fixed at convenient times.	63 (16.8%)	300 (80%)	12 (3.2%)	-
I missed virtual classes.	23 (6.1%)	100 (26.7%)	228 (60.8%)	24 (6.4%)
I maintain regular attendance in a virtual classroom.	100 (26.7%)	200 (53.3%)	50 (13.3%)	25 (6.7%)
I desire to have all courses taught virtually.	300 (80%)	75 (20%)	-	-

These results imply that university students do not enjoy virtual classrooms, possibly for reasons identified in **Table 2**. As such, the results indicated that students do not attend and/or desire to attend virtual classes. Supported by the findings of Boyanle and Harrinson (2020), students' attendance in physical classes is responsible for improved academic performance than that of virtual classes. In addition, Sekiwu *et al*. (2020) found that more students attended classes of courses they enrolled for in a face-to-face setting because they hold class attendance in high esteem. Roby (2021) also reported that students complained of getting tired of being constantly connected to learn. Hence, attendance dropped off in many virtual classes occasioned by the COVID-19 pandemic. Students' attendance in virtual classes was not encouraging; they easily skipped classes due to issues associated with online learning.

3.2. Research Question Two: What are the students' perceived challenges in virtual classrooms in the post-COVID-19 era?

To answer this question, a structured four Likert-type rating scale was used. This structure includes SD - Strongly Disagree, D – Disagree, A – Agree, and SA – Strongly Agree. The summary of the results is presented in **Table 2**.

Table 2. Perceived challenges of virtual classrooms.

Item	N=375			
	SD	D	A	SA
Access to the technology facility hinders my participation in virtual classes	75 (20%)	25 (6.7%)	175 (46.6%)	100 (26.7%)
My parents cannot cope with the required funds to acquire IT gadgets.	-	25 (6.7%)	125 (33.3%)	225 (60%)
My IT knowledge needs improvement to be able to use the gadget for virtual class participation.	100 (26.7%)	25 (6.7%)	50 (13.3%)	200 (53.3%)
My house is located where there is internet access.	-	175 (46.7%)	175 (46.7%)	25 (6.6%)

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Virtual classes consume more internet data than I can afford regularly for virtual learning.	75 (20%)	75 (20%)	175 (46.7%)	50 (13.3%)

Table 2 shows the views of students on their perceived challenges in virtual classrooms in the post-COVID era. The results showed that the majority (73.3%) of the respondents were hindered in virtual class participation because they do not have access to a technology facility, such as a computer or laptop. The remaining (26.7%) respondents disagreed with the statement, which implies that they have access to such a facility. Also, respondents whose parents can afford to buy the required gadgets for virtual classes were only 25(6.7%), while the parents of the remaining 350(93.3%) respondents could not afford the required funds to acquire such gadgets. In addition, it was shown that most (66.6%) of the respondents require training to be able to use IT gadgets for virtual class participation, while the remaining (33.4%) seem to have some degree of competence and may not require additional training to be able to use the gadgets for virtual class participation. As shown earlier, many do not have access to an IT gadget; however, 200(53.3%) respondents agreed that their houses are located where there is internet access, while 175(46.7%) respondents disagreed. This shows that the majority live in urban areas. Lastly, 225(60%) respondents cannot afford to buy internet as frequently required to participate in virtual classes, while 150(40%) respondents disagreed that virtual classes consume more internet data than they can afford regularly for virtual learning.

These results implied that many challenges restrained students' participation in virtual classes. The challenges include, but are not limited to, access to the required IT facilities and affordability of the internet. These results are in congruence with Abdulazeez (2020) whose finding showed that public universities in Nigeria are unable to cope with the challenges of virtual learning, possibly, for socio-economic reasons (Deborah, 2020), low bandwidth (Oladipo *et al*., 2020), lecturers' knowledge of using technology-aided materials (Adebakin *et al*., 2021; Akinyemi *et al*., 2020), parental financial strength to acquire technology devices required for virtual learning (Bolarinwa & Atunwa, 2021). Results of this study are broadly supported by the report of Nambiar (2020), which indicated that many students reside in remote areas without devices and internet availability, lecturers lack requisite knowledge of virtual teaching, and parents face challenges with resources to support their children's internet needs. These serve as major constraints impeding the success of virtual teaching and learning in Nigeria.

3.3. Research Question Three: What is the students' preferred mode of instructional delivery in the post-COVID-19 era?

To answer this question, a structured two rating scale (Yes and No) was used. The summary of the results is presented in **Table 3**.

Table 3. Students' preferred mode of instructional delivery.

Item	N=375	
	Yes	No
I prefer the virtual mode of teaching	75 (20%)	300 (80%)
I prefer the face-to-face mode of teaching	125 (33.3%)	250 (66.7%)
I prefer a combination of both virtual and face-to-face teaching.	175 (46.7%)	200 (53.3%)

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Table 3 shows the preference of university students for any of the three modes of instructional delivery, which are virtual, face-to-face, and hybrid (a combination of both virtual and face-to-face). Clearly, from the three modes, results showed that most respondents, 175(46.7%), prefer the hybrid mode of instructional delivery. While 75(20%) respondents showed a preference for a virtual mode of instructional delivery, 125(33.3%) preferred to be taught in a face-to-face environment.

This finding implies that most students will not miss their classes as the face-to-face will serve as an alternative for them. This finding is in support of various studies that regarded other modes of instructional delivery as complementary to the face-to-face (Adebakin *et al*., 2021; Gamage, 2020; Peimani & Kamalipour, 2021; Watermeyer *et al*., 2021), considering the type of students in the universities, especially in developing nations. Similarly, South African students in the study of Venter and Daniels showed a preference for the face-to-face mode of instructional delivery because of the prohibitive expenses incurred in buying data for accessing virtual lectures. In addition, students prefer conventional interaction modes in the university because those who usually have to hold down jobs to support their studies now find themselves unemployed and without funding when the virtual mode is deployed. In giving credence to the hybrid mode of instructional delivery, as popularly supported by respondents in this study, hybrid is the most popular mode of instructional delivery in Western universities. This is because Peimani and Kamalipour (2021) noted that students' perceived hybrid teaching mode as the possibility of enabling qualitative engagement with the course materials, teaching, and non-teaching staff, with increasing university education demand, irrespective of situation and environment. This shows that hybrid complements pure virtual or physical modes of instructional delivery in a university. Therefore, Khlaif *et al*. (2021) concluded that the hybrid mode is featured by the mix of rigorously chosen virtual and physical methods and is designed in agreement with the course content.

4. CONCLUSION

COVID-19 has potentially shown long-term consequences, revealed vulnerabilities, and surfaced extraordinary human resourcefulness and potential for the futures of public education and university education in particular. Therefore, to bring about formidable actions that will advance the course of education generally and university education in particular in the post-COVID era, students' attendance in virtual classrooms needs to be encouraged. Additionally, it is vital to strengthen ICT facilities that will aid instructional delivery and virtual learning mode; expand the definition of the right to education to address the importance of connectivity and access to knowledge and information; value the teaching profession and teacher collaborations. Furthermore, it is necessary to promote student and youth participatory rights; protect the social spaces provided by schools; make free and open source technologies available to teachers and students; ensure scientific literacy within the curriculum; protect domestic and international financing of public education; and advance global solidarity to end current levels of inequality exposed by COVID-19.

Based on the massive shift away from learning and teaching in traditional settings with physical interactions, this study suggests that Nigerian university students should be encouraged to embrace virtual learning mode as the occasion demands in the post-COVID era. This encouragement should involve the provision of IT gadgets that promote virtual teaching and learning. Considering the socioeconomic inequality among university students, basic access to internet facilities should be provided on campus as well as in students' halls of residence. Furthermore, government intervention in terms of subsidies should be made available to students who live off-campus to buy data that will enable them to attend virtual

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classes and access online learning materials. Since the hybrid mode of instructional delivery was the most preferred by students, it is strongly recommended that the mode be further encouraged among university teachers.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

6. REFERENCES

Abdulazeez, A. (2020). More preparedness on coronavirus disease 2019 (COVID-19) in Nigeria. *Pan African Life Science, 4,* 200–203.

Adebakin, A. B., Ajadi, O. T., and Subair, S. O. (2015): Required and possessed university graduate employability skills: Perceptions of the Nigerian employers. *World Journal of Education, 5*(2), 115-121.

Adebakin, A. B., Aliyu, O. M. and Ayanlowo, A. E. (2021). COVID-19 pandemic and higher education in Nigeria: The reality and a call for sustainable digitalization. *International Journal of Research in Education and Psychology, 7*(4), 19-33.

Adeola, K. A. and Mabayoje, L. O. (2021). COVID-19 and university governance. *International Journal of Antimicrobiology Agents, 21*(2), 727 - 732.

Ajadi, O. T. and Adebakin, A. B. (2022). Lecturers' readiness for virtual teaching in southwestern Nigerian universities. *UNESWA Journal of Education, 5*(1), 68-82.

Akinyemi, K. O., Fakorede, C. O., Anjorin, A. Abegunrin, O. A., Ajoseh, S. O. and Akinkumi, F. M. (2020). Intrigues and challenges associated with COVID-19 pandemic in Nigeria. *Journal of Mental Health*, *12*(8), 76–82.

Bolarinwa, O. A. and Atunwa, E. B. (2021). A review of coronavirus disease 2019 cases in Africa. *Asian Pacific Journal*, *13*, 199 – 206.

Caputo, A. (2017). Social desirability bias in self-reported wellbeing measures: evidence from an online survey. *Universitas Psychologica, 16*(2), 1-13.

Davis, N. L., Gough, M. and Taylor, L. L. (2019). Online teaching: Advantages, obstacles and tools for getting it right. *Journal of Teaching in Travel and Tourism, 19*(3), 256–263.

Deborah, J. (2020). Perception of undergraduate students on the impact of COVID-19 pandemic on higher institutions development in Federal Capital Territory, Abuja, Nigeria. *Electronic Research Journal of Social Sciences*, 2(3), 65–79.

Dumford, A. D. and Miller, A. L. ((2018). Online learning in higher education: Exploring advantages and disadvantages for engagement. *Journal of Computing in Higher Education, 30*(3), 452–465.

Fasanmi, S. A. and Adebakin, A. B. (2023). The reality of COVID-19 in Nigerian higher institutions: New normal in classroom management. *Ife Journal of Educational Management and Policy Analysis, 3*(1), 116-131.

Fleming, T. (2008). A secure bas for adult learning. Attachment theory and adult education. The adult learner. *The Journal of Adult and Community Education in Ireland*, *25*, 33-53.

DOI: http://dx.doi.org/10. 17509/xxxx.xxxx
p- ISSN 2776-6101 e- ISSN 2776-6152

Gamage, K. A. A., de Silva, E. K. and Gunawardhana, N. (2020). Online delivery and assessment during COVID-19: Safeguarding Academic Integrity. *Education Science, 10*, 301.

Gottfried, P. (2010). Evaluating the relationship between students' attendance and achievement in urban elementary and middle schools. An instrumental variables approach. *American Journal of Educational Research, 47*(2), 434–465.

Henderson, M., Selwyn, N. and Aston, R. (2017). What works and why? Student perceptions of 'useful' digital technology in university teaching and learning. *Journal of Study Higher Education*, *42*(8), 1567–1579.

Khlaif, Z. N., Salha, S. and Kouraichi, B. (2021). Emergency remote learning during COVID-19 crisis: Students' engagement. *Education. Information Technology*, *2*(2), 1–23.

Nambiar, D. (2020). The impact of online learning during COVID-19: Students' and teachers' perspectives. *International Journal of Indian Psychology*, *8*(2), 783–793.

Oghuvbu, E. P. (2010). Attendance and academic performance of students in secondary schools. A correlational approach. *Studies on Home and Community Science, 4*(1), 21 – 25.

Ogunode, N. J. and Abubakar, M. (2021). University education in Nigeria. Challenges and way forward. *Electronic Research Journal of Social Sciences*, *3*(2), 94 – 106.

Oladipo, A. T., Fashola, O. T., Agboola, E. I., Adisa, O. O., Oyekanmi, O. A., and Akinsete, A. M. (2020). Challenges of medical education in Nigeria in the COVID-19 era. *Pan African Medical Journal*, *37*, 223 -231.

Peimani, N. and Kamalipour, H. (2021). Online education and the COVID-19 outbreak: A case study of online teaching during lockdown. *Education Science, 11*, 72 – 81

Prensky, M. (2017). Digital natives, digital immigrants part 1. *Journal of New Horizon, 9*, 1–6.

Roby, D. E (2021). Research on school attendance and students achievement. A study of Ohio schools. *Education Research Quarterly, 28*(1), 3 -16.

Sekiwu, D., Ssempala, F., and Frances, N. (2020). Investigating the relationship between school attendance and academic performance in universal primary education. The case of Uganda. *African Educational Research Journal, 8*(2), 152 – 160.

Tick, A. (2019). An extended TAM model for evaluating e-Learning acceptance, digital learning and smart tool usage. *Acta Polytechnica Hungariae*, *16*, 213–233.

Watermeyer, R., Crick, T., Knight, C. and Goodall, J. (2021). COVID-19 and digital disruption in UK universities: Afflictions and affordances of emergency online migration. *Higher Education*, *81*, 623–641.

Watson, D. M. (2011). Pedagogy before technology: Re-thinking the relationship between ICT and teaching. *Journal of Education Information Technology*, 6*,* 251–266.

Wright, F., White, D., Hirst, T. and Cann, A. (2014). Visitors and residents: Mapping student attitudes to academic use of social networks. *Learning Media Technology, 39*, 126–141.

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p-ISSN 2776-6101 e-ISSN 2776-6152

Zhou, J. and Zhang, Q. (2021). A survey study on U.S. college students' learning experience in COVID-19. *Education Science*, *11*, 248 – 257.

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