

Vol.5 Special Issue No.1 (2022)

Journal of Applied Learning & Teaching

ISSN 2591-801X

Content Available at : http://journals.sfu.ca/jalt/index.php/jalt/index

Knowledge and uptake of e-learning among Nigerian students during the COVID-19 lockdown

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Keywords

COVID-19; e-learning; Nigeria; Pandemic; Schools; virtual training.

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Article Info

Received 10 December 2021 Received in revised form 1 February 2022 Accepted 11 February 2022 Available online 16 February 2022

DOI: https://doi.org/10.37074/jalt.2022.5.s1.6

Abstract

This study evaluates the uptake of e-learning among students of Ado-Odo Ota local government area, Nigeria, during COVID-19 lockdown. The study was a descriptive cross-sectional survey of primary and secondary school students from January to February 2021. Data were analysed with IBM-SPSS version 25.0. 28.4% knew about e-learning; 14.7% have ever participated in e-learning, and 8.4% participated during the lockdown. Only 26.6% had access to the internet, computers (1.1%), and phones/tablets (5.5%). The primary reason for not participating in e-learning was lack of awareness (78.2%), no money to buy data (8.9%), and no computers/android/tablets (12.9%). Overall, 57.1% attended tutorials outside their homes, but almost 43.4% said three people shared a bench. Education does not have to be shut down due to pandemics, and students should not be limited to only classroom teaching methods but be introduced to e-learning.

Introduction

The COVID-19 lockdown has wreaked havoc on every facet of human life, including education. The virus's rapid spread took a toll on the educational system, forcing many schools to close (Handebo et al., 2021; Rahmon, 2020; United Nations Development Programme, 2020). According to a United Nations Educational, Scientific and Cultural Organization (UNESCO) assessment, the temporary shutdown of educational facilities has negatively impacted 1.6 billion students in 191 countries (UNESCO, 2020). In Nigeria, the Federal Ministry of Education ordered the instant shutting down of secondary and primary schools across the nation on the 19th of March due to the outbreak of the disease in the country (The Guardian, 2020). All public and private schools were required to close their doors under government instruction. Although the school closures were to contain viral spread within the premises, limit transmission to other vulnerable individuals, and maintain public health, they have had significant consequences on students' learning (Baldwin & Mauro, 2020; Lindzon, 2020). Additionally, the far-reaching effects of social distancing and the associated lockdown measures, as well as school closures, have harmed the educational sector and may affect the educational system in the long run (Nicola et al., 2020; Yinka & Adebayo, 2020a).

Literature review

Electronic learning (e-learning) is an organised course or learning experience given electronically; it may also include performance support content (Eze et al., 2018). Additionally, an e-learning program can consist of live or pre-recorded lecture content, video, quizzes, simulations, games, activities, and other interactive elements. While education can take place in or out of the classroom, the primary component of E-learning is the use of computers and the Internet. E-learning is sometimes referred to as networkenabled skill and knowledge transfer, in which education is delivered to a large number of recipients simultaneously or at different times (Abdulhamid et al., 2017). Initially, it was not universally accepted because it was considered that this system lacked the human factor necessary for learning. However, e-learning has offered several advantages like remote access to various classes, independent learning, reduced cost and access to videos and audio materials that can be rewound anytime (Sunil, 2017). Also, as technology advances and learning systems improve, it is becoming more welcomed by even developing countries. With the COVID-19 pandemic, e-learning expanded into low- and middleincome nations, albeit several obstacles have constrained it. Like in Nigeria, resistance to e-learning system adoption before the pandemic was attributed to a lack of awareness, poor management support, insufficient funding, inadequate infrastructures, abysmal management commitment to an interactive knowledge environment, inadequate training and workforce, and inadequate internet facilities (Aboderin, 2015; Okundaye et al., 2019). However, these issues have not been totally addressed, but the pandemic has increased the chances of implementing an effective e-learning system in Nigeria.

E-learning became imperative in developing and sustaining educational advancement, considering the adverse effects of the COVID-19 lockdown on the traditional education system. However, the closing of schools has once again exposed the chasm between advanced economies' educational institutions and those in developing countries such as Nigeria (Dawadi et al., 2020). Again, the pandemic has exposed significant discrepancies among Nigerian schools. While some private schools in urban areas have embraced online education to engage their pupils, many less privileged children have been left out (Eze, 2021; Mseleku, 2020). Unlike advanced countries, most schools in developing countries lack the necessary infrastructure to participate in online education (Ayebi-Arthur, 2017; Dawadi et al., 2020; UNDESA, 2014). Since e-learning relies on technology infrastructures, such as the internet, computers, tablets, and smartphones, disparities in their availability exacerbate educational access and quality differences.

Before the outbreak, most nations, including Australia, Italy, Germany, and Hong Kong, implemented timely online learning responses (Crawford et al., 2020). Nonetheless, experts have demonstrated that the pandemic has placed enormous strain on education in these countries (Crawford et al., 2020). As a result, it is projected that the pandemic would have a more significant negative impact on schools that did not have online learning platforms before the outbreak (Kachra & Brown, 2020; Zhong, 2020). The pandemic's indirect effects include disrupted schooling and a lack of access to education, particularly in low- and middle-income nations (Zar et al., 2020). COVID-19's impact on education is particularly severe in low- and middle-income countries, where education systems have historically operated on inferior platforms (Dan-Nwafor et al., 2020; Yinka & Adebayo 2020b). Additionally, it is difficult to provide a safe learning environment for pupils in these regions' overcrowded, resource-constrained institutions (Zar et al., 2020). The epidemic has a distinctive dispersing effect on education in Africa and other nations, resulting in a fall in educational attainment, a widening of existing disparities in access to and outcomes from teaching, and an increase in school dropouts (Blundell et al., 2020).

In Nigeria, the danger to education is exacerbated by a unique set of vulnerabilities, including inadequate health systems, poverty and inequality, hunger, internally displaced populations, high population densities, a gap between urban and rural areas, and an out-of-school population (Obiakor & Andeniaran, 2020). Before COVID-19, Nigeria accounted for one out of five out-of-school children worldwide. In Nigeria, over 10.5 million children aged 5-14 years were out of school, and only roughly 61% of children aged 6 to 11 years received regular primary school education (UNICEF, 2013). COVID-19 consequences compound the underlying educational difficulties that have put Nigeria and some other developing countries behind in preparing young people for the dynamic workplace (Dan-Nwafor et al., 2020). For example, while the COVID-19 pandemic is transforming digital and online education globally, primary and secondary school students in rural and underserved regions continue to fall behind due to a lack of skills and resources necessary to adapt to or transfer to new learning channels.

Additionally, the shortage of reliable internet infrastructure and electrical supplies has deterred students who may possess the skills required to engage in internet-based learning (Crawford et al., 2020; Zhong, 2020). Thus, remote learning (including radio, television schooling, and online learning apps for primary and secondary learners and virtual libraries and online classes at universities) becomes imperative for all students during the lockdown. Institutions with insufficient resources and socially disadvantaged students who lack access to technology and the internet, as well as students' unwillingness to participate in an online environment, undercut the government's response (Zhong, 2020). The pandemic has had a significant impact on education in three ways: most pupils have missed out on valuable educational opportunities, lost access to critical school-provided services, and created room for more students to lag behind (Obiakor & Andeniaran, 2020). As a result, these effects are expected to exacerbate gaps in educational quality and socioeconomic equality due to school closures. Only a smaller proportion of learners in urban areas, who are more likely to come from higher-income families, have a greater chance of accessing education during school closures via technology (Obiakor & Andeniaran, 2020).

In contrast, most learners from poor homes and underserved rural and suburban areas are left behind (Zhong, 2020). Apart from that, students in schools lacking the means or capacity to adapt to e-learning are now missing out on education (Leung and Sharma 2020). Learning at home may also be difficult, leaving a more significant proportion of the learner population behind. These issues are a source of concern for all stakeholders in education (Crawford et al., 2020). Thus, even though most states in the country are currently responding via radio and television, a sizable proportion of learners continues to face difficulties in their education. Our study assessed the knowledge and uptake of e-learning among some Nigerian students to give the necessary recommendations to all stakeholders in the education sector.

Methodology

Study area

This study was carried out in Ado Odo Ota, one of the 19 local government areas of Ogun State. It was established on the 19th of May, 1989, after the merger of Ota, part of the defunct Ifo / Ota Local Government (LG), with Ado-Odo/ Igbesa Areas of the Yewa South Local Government Areas (LGAs). It shares a border with metropolitan Lagos State. Ado-Odo Ota LGA has a population of 526,565 at the 2006 census and a population projection of 733,400 in 2016 as estimated by City-Population (2019). The target population is composed of students from primary three to senior secondary school three (SSS3), aged eight (8) to twenty (20) years, who reside within Ado-Odo Ota Local Government Area.

Research design

The study was a descriptive cross-sectional survey conducted using a questionnaire as the study instrument to obtain responses from secondary school and below students. The study was carried out between the 25th of January and the 13th of February, 2021, to determine the knowledge and the use of e-learning among students of Ado-Odo Ota LGA during the six-month lockdowns (March to September 2020). The students were identified using a stratified random sampling technique. This approach involved grouping public and private schools into wards. There are sixteen political wards in the LGA. Schools were randomly selected through a random walk and quotas (Hoffmeyer-Zlotnik et al., 2003). This technique involves investigators beginning the interview process at a random school in a geographic location within the sixteen wards of the LGA and then following a determined route to target the schools to be surveyed, selecting the nth schools, determining along the tracked route.

Inclusion and exclusion criteria

All students (males and females) from primary three to senior secondary school three (SSS3) of at least eight (8) years and not older than twenty (20) years, were included. The study participants were students in Ado-Odo Ota LGA. All students below primary three and those unwilling to participate in the study were excluded. Students in primary three and above were between eight (8) and twenty (20) years old, and were assumed to be more informed and capable of answering questions about the COVID-19 pandemic and e-learning, hence younger students in lower classes were excluded from the study.

Sample size calculation

The sample size was calculated using the formula below based on a margin of error of 5% and a confidence level of 95%; the sample size was estimated at 380 primary and secondary school students.

The sample size was calculated using the formula below:

$$n = \frac{Z^2 \alpha / 2 p(1-q)}{d^2}$$

Where n=sample size

Z = standard normal deviation with 95% confidential interval = 1.96; d = absolute precision = 0.05.

The final minimum sample size n was 383.

38 schools comprising 19 public and 19 private schools were randomly selected from the 16 wards, with a maximum of ten students interviewed from each school.

Data analysis

Data processing was effectuated using the IBM-Statistical Package for Social Sciences (IBM-SPSS) version 25.0 for Windows IBM Corp., Armonk, N.Y., USA. The descriptive data include the socio-demographic characteristics of the respondents, knowledge and perception of COVID-19, knowledge, and uptake of e-learning. Data were described as percentages/proportion, mean/average, and standard deviation and were presented as charts or tables. Chi-Square analysis was conducted to determine the association between variables setting a significant level at p<0.05.

Ethical considerations

The ethical research clearance was sought and obtained from Nigeria's National Health Research Ethics Committee with NHREC Approval Number NHREC/01/01/2007-20/01/2021. Approval was also obtained from the LGA authority. Only participants that consented to participate were interviewed, and the information obtained from the respondents was made confidential and was only used for research purposes.

Results

Socio-demographic characteristics of student respondents There were 380 students, out of which 227 (59.7%) were males, and 153 (40.3%) females. More than half (57.6%) of the students were aged 11-15. About three-fifths (61.6%) were Christians, and 38.4% were Muslims. Half of the students (50%) were from public and 50% from private schools. Primary school students constituted 28.9%, junior secondary (38.4%), and 32.6% senior secondary school students.

The majority of the students' fathers (43.2%) and mothers (40.3%) were graduates, 18.9% fathers and 13.9% mother attained post-graduates, while only a few (2.4%) fathers, and 5.8% mothers reached either primary school or were not educated (Table 1).

Table 3 shows that about three-fifths (60.5%) of the students in both private and public schools had home lessons during the lockdown (p > 0.05). More than half (56.5%) of the public students were taught by home teachers as compared to 37.4% of private school students. The proportion of private school students that attended tutorials outside their homes was 60.5% compared to 53.7% of public-school students (p>0.05).

A higher proportion of private school students (80.5%) said they read books every day at home during the lockdown, compared to public-school students (71.6%), p<0.05. However, 22.6% of public-school students did not learn any skills during the lockdown compared to 17.4% of privateschool students.

About the preventive measures taken against the spread of COVID-19 in the tutorials, most students from both the private (97.9%) and public (98.4%) schools said they had face masks (p>0.05). However, only 65.3% of private-school

Table 1: Student respondents' socio-demographic profiles

Variable	Response	Frequency	Percentage
Candar	Male	227	59.7
Gender	Female	153	40.3
	≤10	64	16.8
Age category	11 – 15	219	57.6
	16 – 20	97	25.5
Deligion	Christianity	234	61.6
Religion	Islam	146	38.4
Terre of each and	Private	190	50.0
Type of school	Public	190	50.0
	Primary	110	28.9
School Grade	Junior secondary	146	38.4
	Senior secondary	124	32.6
	Post-graduate	72	18.9
	Graduate	164	43.2
Father's education	Diploma/NCE	47	12.4
	Secondary	88	23.2
	Primary/no formal	9	2.4
	Post-graduate	53	13.9
	Graduate	153	40.3
Mother's education	Diploma/NCE	54	14.2
	Secondary	98	25.8
	Primary/no formal	22	5.8

students said they used face masks regularly compared to 77.4% of public-school students (p<0.05). Similarly, slightly more than half (51.3%) of private school students said they sat very close to other students compared to 59.8% of public-school students (p>0.05). More than half of private school students (50.8%) said three students were sitting on a bench during tutorials compared to 36.5% of public-school students. On the other hand, 54.0% of publicschool students said two people shared a seat compared to 30.5% of private-school students. Overall, only 13.9% of all the students said they sat on the bench alone during the tutorials (p<0.05).

Impact of COVID-19 lockdown on educational activities of public and private school students in Ado-Odo, Ota

Table 2: Knowledge of and access to online learning during COVID-19 lockdown among private and public-school students

Knowledge of virtual/online learning	All cases n (%)	Private (%)	Public n (%)	P-value
Have heard about virtual/online learning	108 (28.4)	65 (34.2)	43 (22.6)	0.012*
Ever participated in e-learning	56 (14.7)	37 (19.5)	19 (10.0)	0.009*
Participated in any e-learning during COVID-	22 (0 4)	10 (10 0)	12 (6 9)	0.260
19 lockdown	52 (6.4)	19 (10.0)	15 (0.8)	0.208
Have regular access to the Internet for online	101 (26 6)	(1 (22 1)	40 (21 1)	0.015*
learning	101 (20.0)	01 (52.1)	40 (21.1)	0.015*
Used personal/parents' computer for e-	4 (1 1)	2 (1 1)	2 (1 1)	0.401
learning	4 (1.1)	2(1.1)	2 (1.1)	0.461
Used personal/parents' phone or tablet for e-	21 (5 5)	12 (6 2)	0 (4 7)	0.501
learning	21 (5.5)	12 (0.5)	9 (4.7)	0.501
Training through television	7 (1.8)	4 (2.1)	3 (1.6)	0.703
Household has electricity generator	380 (78.4)	153 (80.5)	145 (76.3)	0.318
Reason for not using e-learning				
Not aware of it	272 (78.2)	125 (73.1)	147 (83.1)	
No money to buy data	31 (8.9)	19 (11.1)	12 (6.8)	0.080
No computer or android/tablet	45 (12.9)	27 (15.8)	18 (10.2)	

* Significant at p<0.05.

Table 3: Offline learning activities among private and public schools during the COVID-19 lockdown

Activities during the lockdown	All cases n (%)	Private n (%)	Public n (%)	P-value
Did home lesson during lockdown	230 (60.5)	117 (61.6)	113 (59.4)	0.805
Teacher at home during lockdown				
Parents	53 (23.0)	333 (28.7)	20 (17.4)	
Siblings	60 (26.1)	35 (30.4)	25 (21.7)	0.024*
Home teacher	108 (47.0)	43 (37.4)	65 (56.5)	0.0241
Others	9 (3.9)	4 (3.5)	5 (4.3)	
Did tutorial outside home during lockdown	217 (57.1)	115 (60.5)	102 (53.7)	0.178
Time spent learning daily during lock	kdown			
1-2 hours	190 (68.3)	96 (50.5)	94 (49.5)	
3 – 5 hours	82 (29.5)	44 (31.0)	38 (27.9)	0.857
>5 hours	6 (2.2)	3 (2.1)	3 (2.2)	
Read books every day at home	289 (76.1)	153 (80.5)	136 (71.6)	0.041*
Learnt any skills during lockdown	76 (20.0)	33 (17.4)	43 (22.6)	0.200
Preventive measures taken in tutoria	ls			
Have face mask	373 (98.2)	186 (97.9)	187 (98.4)	0.703
Wear face mask regularly in the				
tutorial				
Yes	271 (71.3)	124 (65.3)	147 (77.4)	0 000*
No	109 (28.7)	66 (34.7)	43 (22.6)	0.005
Sat close to another student(s) in tutorials	120 (51.3)	59 (51.3)	61 (59.8)	0.209

The average number sitting	per	bench	
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One	17 (13.9)	11 (18.6)	6 (9.5)	
Two	52 (42.6)	18 (30.5)	34 (54.0)	0.027*
Three	53 (43.4)	30 (50.8)	23 (36.5)	

* Significant at p<0.05

Impact of COVID-19 lockdown on educational activities of primary and secondary school students in Ado-Odo, Ota

Table 4 displays the knowledge of e-learning was generally poor among the students (28.4%) but significantly increased with the level of education with 17.3% among primary pupils, 28.1%, and 38.7% among junior and senior secondary school students have heard about it (p<0.001). Only 14.7% have ever participated in any e-learning activity, with just 9.1% of primary, 11.6% junior, and 23.4% of senior secondary school students (p<0.05). During the COVID-19 lockdown, only 8.4% of the students have participated in any form of e-learning.

Only about one-fourth (26.6%) of all the students had access to the internet, with the highest proportion (35.5%) among senior secondary. Also, just 1.1% had access to parents' or personal computers for learning, 2.4% senior secondary, 0.1% junior secondary, and none among primary school pupils (p>0.05). Similarly, just 21 (5.5%) had access to personal/parents' phones or tablets for e-learning; 7.3% among senior secondary, 5.5% junior secondary, and 3.6% primary pupils (p>0.05). Through the television, those who participated in e-learning constituted just 1.8% of all the students with 7.3%, 5.5%, and 3.5% senior secondary, junior secondary, and primary school pupils, respectively (p>0.05). The majority of the students (70%) only had access to electricity once in a while. However, the majority of the students' households had electricity generators (78.4%) (p>0.05). For those who did not participate in any e-learning process, the primary reason was the lack of awareness (78.2%), 8.9% said there was no money to buy data, and 12.9% said that they did not have access to computers or android phones/tablets (Table 4).

Table 4: Knowledge of and access to e-learning among primary and secondary school students during COVID-19 lockdown

Knowledge of online learning	All cases n (%)	Primary n (%)	Junior secondary n (%)	Senior secondary n (%)	P-value
Have heard about virtual/online learning	108 (28.4)	19 (17.3)	41 (28.1)	48 (38.7)	0.001*
Ever participated in e-learning	56 (14.7)	10 (9.1)	17 (11.6)	29 (23.4)	0.004*
Participated in any e-learning during COVID-19 lockdown	32 (8.4)	4 (3.6)	8 (5.5)	20 (16.1)	0.001*
Have regular access to the Internet for online learning	101 (26.6)	21 (19.1)	36 (24.7)	44 (35.5)	0.014*
Used personal/parents' computer for e-learning	4 (1.1)	0 (0.0)	1 (0.1)	3 (2.4)	0.533
Used personal/parents' phone or tablet for e-learning	21 (5.5)	4 (3.6)	8 (5.5)	9 (7.3)	0.547

Training through television	7 (1.8)	0 (0.0)	2 (1.4)	5 (4.0)	0.362
Access to electricity					
Everyday	86 (22.6)	22 (20.0)	41 (28.1)	23 (18.5)	
Three days interval	28 (7.4)	7 (6.4)	10 (6.8)	11 (8.9)	0.333
Once a while	266 (70.0)	81 (73.6)	95 (65.1)	90 (72.6)	
Household has electricity generator	380 (78.4)	84 (76.4)	116 (79.5)	98 (79.0)	0.821
Reason for not using e-learning					
Not aware of it	272 (78.2)	91 (85.8)	105 (76.1)	76 (73.1)	
No money to buy data	31 (8.9)	9 (8.5)	12 (8.7)	10 (9.6)	0.102
No computer or android/tablet	45 (12.9)	6 (5.7)	21 (15.2)	18 (17.3	

* Significant at p<0.05.

Table 5 shows that overall, 60.5% of the students did home lessons during the lockdown, with a percentage of 70% of primary, 63.7% junior secondary, and 48.4% of senior secondary school students (p<0.05). Almost half (47.0%) were trained at home-by-home teachers. 24 (31.2%) primary school pupils were taught at home by their parents, 17.2% junior and 21.7% senior secondary school students. Students thought at home-by-home teachers accounted for 40.3% of primary school, 57.0% junior secondary, and 40.0% of senior secondary school students (p<0.05).

More than half (57.1%) of the students attended tutorials outside their homes during the lockdown, with 49.1% of primary, 63.0% of junior, and 57.3% of senior secondary school students (p>0.05).

The majority (69.3%) of the students spent one to two hours a day learning during the lockdown. Also, 76.1% said they read their books at home during the lockdown, 85.5% among primary, 79.5% junior secondary, and 63.7% of senior secondary school students (p<0.001). However, very few of the students, 76 (20.0%), had the opportunity to learn any skills during the lockdown (p<0.05).

All junior secondary school students (100.0%) and 99.1% of primary school students said they had a face mask compared to 95.2% of senior secondary school students (p<0.05). However, 75.0% of senior secondary, 74.0% of junior secondary and 63.6% of primary school students said they used face masks regularly (p>0.05). More than three of five primary school pupils (61.1%), 59.8% of junior secondary, and less than half (45.1%) of senior secondary school students said they shared a bench with other students during the tutorials (p>0.05). Almost half of the primary (45.5%) and junior secondary (49.2%) students said three people shared a bench during the tutorials compared to 33.3% of senior secondary students. Similarly, 42.4% of primary and 46.4% of junior secondary school students said two people shared a bench compared to 36.4% of senior secondary school students. Only 4 (12.1%) of primary and 3 (5.4%) junior secondary school students said they did not share a bench with any other student in the tutorials during the lockdown compared to 30.3% of senior secondary school students (p<0.05), Table 6.

The major skills the students learned during the lockdown include tailoring/sewing (39.5%), hairdressing (9.2%), computer skills (7.9%), carpentry (7.9%), musical instruments (6.6%), and costume making (6.6%). Others include welding (3.9%), shoemaking/repairing (3.9%), generator engineering (3.9%), baking (3.0%), and barbing (2,6%), as shown in Figure 1.

Table 5: Offline learning activities of primary and secondary school students during the COVID-19 lockdown

Knowledge of COVID-19	All cases n (%)	Primary n (%)	Junior secondary n (%)	Senior secondary n (%)	P-value
Did home lesson during lockdown	230 (60.5)	77 (70.0)	93 (63.7)	60 (48.4)	0.002*
Teacher at home during lockdown					
Parents	53 (23.0)	24 (31.2)	16 (17.2)	13 (21.7)	
Siblings	60 (26.1)	22 (28.6)	20 (21.5)	18 (30.0)	0.036*
Home teacher	108 (47.0)	31 (40.3)	53 (57.0)	24 (40.0)	0.020*
Others	9 (3.9)	0 (0.0)	4 (4.3)	5 (8.3)	
Did tutorial outside home during lockdown	217 (57.1)	54 (49.1)	92 (63.0)	71 (57.3)	0.083
Time spent learning during lockdo	wn				
1 – 2 hours	190 (68.3)	54 (68.4)	69 (69.7)	67 (67.0)	0.603
3 – 5 hours	82 (29.5)	25 (31.6)	27 (27.3)	30 (30.0)	
>5 hours	6 (2.2)	0 (0.0)	3 (3.0)	3 (3.0)	
Read books every day at home	289 (76.1)	94 (85.5)	116 (79.5)	79 (63.7)	<0.001*
Learnt any skills during lockdown	76 (20.0)	12 (10.9)	28 (19.2)	36 (29.0)	0.002*
Preventive measures that were tak	en in tutorials clas	ses			
Have face mask	373 (98.2)	109 (99.1)	146 (100.0)	118 (95.2)	0.009*
Wear face masks regularly in the t	utorial				
Yes	271 (71.3)	70 (63.6)	108 (74.0)	93 (75.0)	0.106
No	109 (28.7)	40 (36.4)	38 (26.0)	31 (25.0)	0.100
Sat close to another student(s) in tutorials	120 (55.3)	33 (61.1)	55 (59.8)	32 (45.1)	0.106
The average number sitting per be	nch				
One	17 (13.9)	4 (12.1)	3 (5.4)	10 (30.3)	
Two	52 (42.6)	14 (42.4)	28 (46.4)	12 (36.4)	0.027*
Three	53 (43.4)	15 (45.5)	27 (49.2)	11 (33.3)	

* Significant at p<0.05.



Figure 1: Skills learned during COVID-19 lockdown

Discussion

Due to restrictions, educational institutions as essential parts of society were affected by COVID-19 lockdowns as school premises were paralysed. Thus, other alternative learning methods had to be explored. Although students from developed countries have been learning online, this system is still new in many African countries, including Nigeria. Only a few private and public higher institutions currently engage in online learning, particularly during the outbreak of the COVID-19 pandemic and the lockdowns that followed. In comparison, education activities were ongoing nonstop among elementary students in developed countries during the lockdown due to e-learning, that was available to students from their respective homes. Most Nigerian schools are yet to implement this learning method. As a result, it is small surprise that there was little awareness of online learning and insufficient access to it.

The study examined the knowledge and access to online learning between public and private schools, and both recorded insignificant percentages. However, the study reported challenges affecting the e-learning of all students.

A significant challenge this study highlighted as a problem limiting e-learning is electricity. The power supply is one of the most significant setbacks to e-learning in Nigeria. Devices that are needed for this process require electricity, which has always been a problem for countries like Nigeria. Emeka et al. (2021) reported inadequate power supply as a challenge to e-learning, experienced in several regions of Nigeria. The study showed how students who live in urban areas do not have access to constant electricity, which is worse in rural areas because some cannot access electricity (Emeka et al., 2021). However, some may result in generator use, but this will also come at an extra cost, which may be hard on sponsors because the cumulative cost during the e-learning process may be too expensive to bear. Studies in Guinea, South Africa, and Uganda have also documented how poor electricity has affected the educational process before COVID-19; students are subjected to harsh conditions, using candles and kerosene lamps while studying (Furukawa, 2012; Goodwin, 2013; Mills, 2012). This predicament is not the case in developed countries, as most students have been introduced to e-learning. With the advancement in technology and the constant electricity supply, this learning method will be made available to student is Nigeria as well.

The significant level of e-learning unawareness among respondents in this study, may also be due to the location that this study was conducted, which is a semi-urban area with several sub-standard schools. Also, before the emergence of the COVID-19, many schools had not been introduced to e-learning; some schools and students had not even been technologically capable, which may explain the lack of this learning method awareness among respondents. Human Rights Watch (2020) reported unawareness on e-learning among students in several African countries, showing how most African countries are utterly oblivious of this learning method. Human Rights Watch reported that students receiving no lectures, being asked to continue re-reading their notes, and parents in Congo idly wait for schools to reopen to continue their education and learning process (Human Rights Watch, 2020). The above show that the schooling system in most developing countries, like Nigeria, is already rigid in the face-to-face tradition of teaching and is unaware of other learning methods.

Another problem this study recorded was that respondents had no money for data and no computer or phone/tablets for e-learning. This result may be due to cost, particularly for low-income earners and families whose jobs were affected by the lockdown. Some schools demanded full payment for online lectures, coupled with the cost of data and devices; this might be difficult for students' parents and guardians, which may discourage e-learning among this group of people (Human Rights Watch, 2020). Findings point us as a nation towards adequate preparation against similar occurrences like COVID-19 in the nearest future. Even another lockdown is imminent if sufficient measures are not put in place to curb the spread of the ravaging delta variant of COVID-19 in Nigeria.

Since a significant number of respondents were not aware and did not participate in e-learning programs, this study reported offline learning among respondents; even though this was a violation of the lockdown protocol, this learning method was higher than e-learning. This result may be due to parents' being concerned about students lagging academically and being idle, so they took offline tutorial classes as the best option for learning or keeping their children busy. A report in Congo showed how parents were tired of seeing their children idle at home, waiting for school to resume, as students are likely to fall off academically, which may explain the significant rate of offline learning among respondents (Human Rights Watch, 2020). However, this study reported a substantial rate of offline learning in private and public-school students, with a considerable number employing the services of a home teacher. This finding shows that most students and parents are already so familiar with the old tradition of teaching that they find it hard to adapt to e-learning. A study in Nepal also supported this claim, stating the limitations of e-learning and how students are finding it difficult to adjust, slowing the learning process of some students, because factors like environment, social contact, and interaction plays a significant role in learning (Dawadi et al., 2020). This report may explain the high use of home teachers among respondents to experience the same face-to-face tradition of teaching. Siblings also taught younger students; this may be due to parents' unavailability or illiteracy, as the level of family educational attainment may also determine these learning modes. A higher percentage of respondents were reported to spend one to two hours in offline learning during the lockdown, with the use of face masks both in private and public schools. Also, a significant number of respondents in private and public schools read books every day and some learnt a skill during the lockdown with significant number learning tailoring.

Conclusions and recommendations

This study found that the students did not observe COVID-19 preventive guidelines during the tutorials. Many students had face masks, but the rate of regular use was relatively low, implying a negative attitude towards the preventive measures. Students sat close to each other, further violating the social distancing protocol, with an average number of two to three students sharing a bench. However, this may be due to the challenges students encounter with online learning or lack of supervision or strict enforcement of lockdown rules in the LGA. Mseleku (2020) reported how most students find it hard to adapt to online learning. Also, the additional expenses and the limitations increase the rate of offline learning among students regardless of the lockdown protocol.

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