Information Communication Technology Skills and Students' Engagement in Online Learning Spaces during Covid-19 Pandemic

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Abstract

The circumstances surrounding the COVID-19 pandemic presented a drastic decline in the use of traditional face to face methods for teaching and learning in higher education institutions. As the new normal advances the use of Information and Communication Technology (ICT) devices and skills for online and distance learning, this study investigated the extent to which the access and use of ICT devices and skills have supported students' engagement during the school closures that characterised the Covid-19 pandemic era. The study adopted a mixed method research design involving the use of questionnaires and online focus group discussions to draw responses from participants from public and private higher education institutions in Lagos and Ogun States, Nigeria. Two research questions and one hypothesis were formulated to guide the study. A researcher designed questionnaire and key informant interview guide was administered to elicit responses from participants. Data were analysed using the descriptive and inferential statistics. Results showed a significant positive relationship between ICT skills of students and the level of engagement during online classes. It was recommended that lecturers and facilitators of knowledge in the online learning spaces should make concerted efforts to up-skill such that facilitation of learning will be engaging for the students.

Keywords: ICT Access, ICT devices, ICT skills, Students engagement, online learning spaces.

Introduction

The twenty first century has ushered in new ways of learning, living and working across the globe. One of the innovations that characterised the century is the advent of Information Communication Technology (ICT) devices as support for businesses, health and education related services. Beyond the use of devices, the advent of ICT has ushered in the need for new knowledge and skills that will enhance productivity of various sectors. Finger et al. (2007) defines ICT as the range of technologies that support the utilisation of information and these include computers and computer-related products, email, MMS, and other forms of communication. Despite the fact that the use of ICT as support for learning and business is becoming the norm, the ability to think critically to create new knowledge and solutions that enhance productivity through these devices become more important than being able to access and operate ICT devices.

The adoption of online and distance learning options have presented a demand for unlimited availability of and accessibility to ICT devices coupled with skilled educators that can adopt engaging teaching strategies for effective learning. This seems to be a pathway for reducing the gap created by limitation of face-to-face teaching presented by Covid-19 pandemic. Henderson, Selwyn and Aston (2017) averred that digital technology plays a significant role in student engagement thereby making it a central feature within the student educational experience. Beyond access to ICT devices and skills, adopting engaging pathways that embed the use of the ICT skills in the content and delivery of lectures is becoming a necessity. Online teaching and learning requires competencies and understanding of strategies that will endear teachers to adapt technology to align with the achievement of learning goals. Through this, students can experience enriching learning activities that will culminate into achievement of learning objectives. Bond and Bedenlier

(2019) defined student engagement as the energy and effort that students apply in the le arning community with behavioural, cognitive or affective engagement being the observable indicators over time. Although the level of engagement comes to play through the observable actions by students, these actions are shaped by internal influences, the learning environment, learning activities and relationships between student-student; student-content; and student-lecturer. An engaged student is most likely to be inquisitive, interested and connected to the learning content and activities presented by the lecturer. It has been established that a higher level of engagement improves learning outcomes and better academic achievement (Zehner,2011;Cheong & Ong, 2016) Through meaningful and relevant learning activities, students become engaged and show it through interest and commitment to participating in learning even beyond the classroom.

Like many other sectors, stakeholders in the education sector have embraced the use of ICT tools in teaching, learning, assessment and as support for other instructional and management practices that enhance the creation and exchange of knowledge between instructors and learners. The major objective is to enhance the quality of teaching and learning vis-a-vis improving learning outcomes. Asides improving the quality of instruction, the use of ICT tools and devices often provide necessary support for students to be well prepared for the world of work which has become so unpredictable with digital literacy as an imperative to survival. ICT also minimises the challenge of access to educational resources as many students who find it difficult to come to access physical classrooms due to employment, household responsibilities, well-being issues, and time constraints are able to switch to online education using digital technologies. Adopting the use of ICT resources for education has led to what Saheb (2005) termed new education system characterised by learning strategies such as e-learning, distance learning, internet-based learning or web-based learning, presenting opportunity for educators to digitalize texts, images, sounds, videos, and making it easy to access any kind of information anywhere in the world with a few clicks.

However, one of the challenges that hinder the full adoption of ICT tools in the university system is the cost of acquiring and accessing infrastructure that makes the use of ICT resources seamless. As highlighted by Saheb (2005), it is becoming practically impossible for many people to spend a day without interacting with sophisticated information and communication technologies (ICTs) ranging from television and radio to the mobile telephone and the Internet. However, for millions of people in the world's poorest countries, there remains a "digital divide" excluding them from the benefits of ICTs. The Nigerian Communications Commission reports that as at December, 2018, telecommunication subscriptions in Nigeria stood at nearly 173 million, a 19 per cent increase from the previous year with broadband penetration of 31.48 per cent. The Digital 2020 Global Overview Report also itemised that there were 169.2 million mobile connections accounting for 83 percent of the total population in Nigeria as at January 2020. However, about 50 percent of these mobile phone connections are by people resident in urban areas, implying that the proportion would be skewed towards high socio-economic households and urban households; out of which are an overwhelming majority of private school students who already have a learning advantage over their public-school peers (Obiakor and Adeniran, 2020),

Although these trends do not clearly indicate the extent of digital divide in the country, it is suggestive of an infrastructural challenge that makes broadband connectivity more accessible to some Nigerians over others and this has lots of implication for the remote learning which has become one of the few options left for students after the onset of the Covid 19 pandemic. The occurrence of the digital divide has been a major factor responsible for the teeming educational inequalities that have become the order of the day and is being deepened by the pandemic. Apparently, the few options left for learning to continue were embedded in the adoption of remote or distant teaching and learning strategies which entailed the delivery of

lectures through radio, television, mobile phones and some other digital tools and applications.

As stated by World Economic Forum, the pandemic has unmasked substantial inequities in the education sector and students who currently cannot keep up with their peers because of inaccessibility to digital tools may find it difficult catching up with peers thereby extending the effect of the loss of learning long after the pandemic is over. While inequities might exist in access and availability of ICT tools to learners, inability of lecturers to deliver engaging course contents and learner centred activities during remote learning can also lead to more inequality in quality of teaching and learning. University lecturers are major drivers and facilitators of learning in universities. By adopting engaging teaching strategies that are relevant for preparing students for the world after university education, lecturers co-create skilled students who will live a productive life after higher education. However, there is a huge gap between the demands of teaching in face-to-face learning environment compared to the demands of distant learning environment.

Asides being able to surmount the difficulties associated with accessing and maintaining ICT devices used in remote learning environments, lecturers are saddled with the task of preparing and delivering engaging lessons that will engage learners such that learning goals will be achieved. Having to engage students on Zoom, Google classroom, Microsoft teams and other related platforms require provision of opportunities for learners to be involved in discussions, writings and activities that connect curriculum content to real life scenarios. As universities pivot into distance learning modes, parents, students and educators face diverse challenges based on the role they play in ensuring that learning continues. As parents endeavour to ensure that power and broadband connectivity is made available, lecturers are also saddled with the task of providing engaging classroom experience that will reduce the trauma and isolation that has resulted from the school closures. Adopting engaging teaching strategies

that will provide opportunities for students to own their own learning so that learning goals are achieved tends to be the responsibility of the lecturer and this can only be achieved by adopting strategies that foster behavioral, academic and cognitive engagement. Having such engaging lessons tend to be a path to reducing the loss of learning that is imminent as educational sector waits for a vaccine to combat Covid-19. As stated by Ainley and Enger (2007), being able to make use of information technology for learning requires competence in performing computer tasks, hence a key consideration when examining the relationship between engagement and ICT must be a consideration of students' self-rated competence in relation to those tasks. It is based on the foregoing that this study (using the perspective of students) investigates the extent to which lecturers have leveraged on Students' ICT skills to support engagement in on-learning spaces during the covid-19 school closures.

Statement of the Problem

The advent of covid-19 pandemic with the attendant disorder and lock-downs, created a gap in every sector of the economy, with a serious dent on education. In a bid to overcome learning gaps, educational stakeholders became overwhelmed with the burden of ensuring that learning continues while learners remain safe at home. With the shutting down of schools at every level, the regular face-to-face teaching and learning became threatened, resulting in an unpredictable situation for the school system. This unpredictability, however, paved a way for diverse forms of innovative teaching and learning strategies meant to support the social distancing protocols in the new normal. This learning option involves both simple and sophisticated technological tools and devices based on relevance and availability of resources. Using technology for distance and online learning however presents the challenge of ensuring that students are involved and committed to learning and also able to connect classroom activities to real world scenarios despite the distance between teacher and learner. In addition, the online mode of learning requires that both lecturers and students have the

necessary ICT skills needed to function optimally using the technological devices. Having students log into classes only to mute and then get involved in other non-academic activities is a sign of disengagement and that might not eventually result in the achievement of learning goals. As stakeholders in the educational sector battle with opportunities to increase access to technological devices and connectivity, the need to also ensure that learning outcomes are achieved has become very important. This study, therefore, examined the extent to which ICT skills has enhanced students' engagement in the online learning spaces..

Research Questions

1. In what ways have students accessed ICT support for online learning?
2. How often do lecturers leverage on ICT skills of students to support engagement in online learning?

Hypothesis

1. There is no significant relationship between students' ICT skills and engagement in online learning.

Literature Review

ICT Support and Skills

Having the ability to utilise ICT devices and the internet has become a valuable competency and support for achieving learning objectives. Beyond face-to-face learning spaces, Covid 19 has presented the need to leverage on ICT devices and the internet connectivity as a means of reducing loss of learning that is likely to result from the lockdown that has kept schools under lock and key. However, making use of ICT devices in online learning spaces seem to demand a new level of skill for engaging students effectively. As stated by Goldhammer, Gniewosz and Zylka (2016), one of the major conditioning personal characteristic that affects the

development and adaptation of ICT skills in learning environments is ICT engagement. Although Ainley and Armatas (2006) argue that the connection between the learner and the learning environment is central to understanding how virtual learning environments have motivated or engaged students in online spaces, it has also become expedient to know that having the competencies required for behavioral engagement is critical for learning outcomes to be achieved. Behavioural engagement entails participation in terms of sharing and use of technological devices and tools for content sharing and hands on activities that promote active learning. Therefore, Strategies for adapting teaching to better meet the needs of students require increasing the speed at which information is presented; providing opportunities for multi-tasking and interactive learning; and presenting information through a variety of media (Jukes, 2005).

ICT and Connectivity support for Online Learning

The Covid 19 pandemic situation has provided the opportunity for universities globally to re-evaluate their teaching-learning strategies and plans for their future education because it could take a while before the world returns to normalcy. Migrating to the online learning environment is not without challenges for both students and lecturers, especially within the Nigeria context. Koeman (2018) mentioned that student might be unmotivated for several reasons such as poor curriculum, dislike for the subject. Other reasons may include unreliable internet connections; financial constraints as the cost of internet subscription could pose a significant issue. Also, students who were active in the face to face learning environment may lose focus and become disinterested in online learning. Availability of ICT facilities and supply of electricity could also impact on online teaching-learning in higher institutions as without these facilities, the teaching- learning process will be dragged down. The study argues that in the post COVID 19 World, some of the teaching strategies universities are

developing now may stick around and open doors for blended approach to teaching-learning process.

Teaching Strategies in Face-to-Face Learning Environments

Within the face-to-face teaching-learning environment that was the norm before the Covid-19 pandemic, teaching and learning entailed real-time interaction between students and lecturers. It is considered the traditional lecturing styles in many universities and has many advantages for both students and lecturers. Face-to-face learning environment stimulates and promotes collaborative learning; lectures can adapt and modify different teaching styles; it encourages critical thinking amongst students as they engage with classroom discussion. Lewandowski et al. (2011) mentioned that it helps students build their confidence while Paechter & Maier, (2010) argued that face-to-face engagement with students allows lecturers to better interaction and guide student through their classroom activities. However, face-to-face learning environment has also been criticised and termed a teacher-centred approach to teaching because it encourages passive learning, ignores individual differences and the needs of the learners (Appana 2008). Other authors like Turbill (2015); Stone and Perumean-Chaney (2011) noted some other disadvantages of learning in a face-to-face environment, but the advantages seem to outweigh the disadvantages. Most popular teaching strategies adopted in universities globally are lecture methods, discussion strategy, questioning method, project method, seminar methods which includes grouping the students. It is assumed that many lecturers adopt more than one strategy when delivering lessons and these strategies have been effective in delivering engaging lessons.

Student Engagement

Student engagement is the intention of students to participate in learning activities. These engagements are vital to the teaching-learning process, and it is assumed that an interactive

relationship exists between teaching strategies, student engagement and academic achievement. This assumption is based on the conclusions of an array of studies that student engagement leads to high-quality education (Ashwin & Mc Vitty, 2015), increases students retention (Khademi Ashkzari, Piryaei, and Kamelifar 2018), and enhances institutions reputation (Kuh et al. 2006).

Chapman (2003) identified three main criteria of student's engagement that lecturers should consider when planning their teaching strategy. They include cognitive criteria, behavioural criteria, and affective criteria. The cognitive criteria is the extent to which students pay attention and expend mental effort during the learning task, the behavioural criteria addresses the active response of the students when learning is in session, while the affective criteria focuses on the students emotional reactions to the learning task. There are many teaching strategies that can address the above student engagement criteria's but Mkpa (2009) mentioned that selecting strategies should be based on the subject matter and content been taught. The study also argues that teaching strategies and methods of student engagement could vary depending on the learning environment.

Students' engagement in online learning environment

The online learning environment is not a new concept. It has existed since the invention of technology and has become an accepted learning environment in higher education globally. Popovich and Neel (2005) stated that the introduction of online teaching in universities has led to increased enrolment of students, elimination of overcrowded classrooms, and improved student retention rate. However, not many authors agree with Popovich and Neel's (2005) point that the online learning environment has improved retention rate. Bawa (2016) raised concerns about the low retention rate of many online/distance education programmes and Heyman (2010) also share similar concerns stating that the online and distance courses have a

10% to 20% failed retention rate. Smith (2010) also opined that it also online learning 80% dropout rate. The contrary is however the fact that online learning environment has provided opportunity for continuity of teaching/ learning activities during the COVID 19 pandemic lockdown.

Although online teaching strategies are similar to the face-to-face teaching strategies, some authors have identified principles to the online teaching strategies. For instance, Ragan (2015) identified ten (10) principles and teaching strategies suitable for the online teaching environment, while Uderman (2020) identified seven (7) online teaching strategies. Similar amongst these strategies identified is the need for lecturers to be aware of their roles, create a safe course environment, and create opportunities to engage students in the teaching-learning activities.

Now that many lecturers and students have to migrate from the face-to-face teaching environment to online environment because of the uncertainties of the COVID 19 pandemic, lecturers should be aware that there is a significant difference between lecturer and student engagement in the face-to-face learning environment and online learning environment. The teaching and engagement strategies that work well in the face-t o-face environment could fall flat in the online classroom, and excellent lecturers could find themselves struggling to connect with students online (Boon,2015). Corroborating Boon, Orlando and Attard (2015) also stated that teaching with technology is not a one size fit all approach. Therefore, there is a need for them to be aware of the diverse teaching styles and activities that will enhance student participation, foster feedback, and collaborative learning.

Innovative Online Teaching Strategies

Existing studies have offered effective teaching strategies for lecturers to assist in the transition from face to face learning to the online learning environment. Sharoff (2019) who

explored creative and innovative online teaching strategies suggested that lecturers should focus on redesigning their course content and syllabus in ways that provide students with more details on instruction, course structure and required assignments. It is imperative to note that providing these details are not mere direct information rather, they are meant to give guidance to students, encourage students' contributions, draw participation, and set the climate for learning. From Aaragon (2003)'s perspective, lecturers should put all effort to avoid isolation of learners during online teaching. This is because learners may not be familiar with the online learning environment and could feel frustrated with the disparities of face to face learning environment and the new realities of online learning. In another vein, Doyle (2008) suggested that lectures could create a learner's centred environment that will promote student engagement. Lumpkin et al. (2015) assessed students' perception of engagement in learning activities and found that student-centred learning environment could sustain students' engagement. Through qualitative and quantitative data, it was shown that active learning activities facilitated students' willingness to learn. Teachers need to incorporate a variety of learning strategies when teaching to meet students' academic need and foster engagement(Lumpkin et al., 2015).

Methodology

The study adopted a mixed method utilising a questionnaire and a focus group discussion to draw responses from participants who are students from public and private tertiary institutions located in Lagos and Ogun States, Nigeria. A descriptive survey research design was employed. A researcher designed Students' ICT Support and Engagement in Online Learning Spaces questionnaire (SISEOLSQ) and a Focus Group Discussion Guide was used to collect data. The population for the study comprised all undergraduate and post graduate students of tertiary institutions in Lagos and Ogun States, Nigeria while sample comprised of university, polytechnic and college of education students purposefully selected from the

population.Quantitative data was analysed using descriptive and inferential statistics Response patterns were rated on a 4-point Likert type scale which were coded 4, 3, 2 and 1 respectively.The criterion mean was set at 2.5 for the quantitative data. The focus group discussion was transcribed and analysed through content analysis using emerging themes and patterns. To measure the internal consistency of the instrument, the Cronbach's alpha coefficient test of reliability was applied, using the Statistical Package for the Social Sciences (SPSS) software, to ensure reliability at an alpha level of 0.05. The analysis gave an alpha co-efficient of 0.957 which was considered high enough to justify its use for the study. To ensure the face and content validity of the instrument, the questionnaire was vetted by a professor of educational management and an expert in online instructional design and delivery at the University of Lagos. Their suggestions and other corrections made formed the basis for the modification of the final version of the instrument.

Results

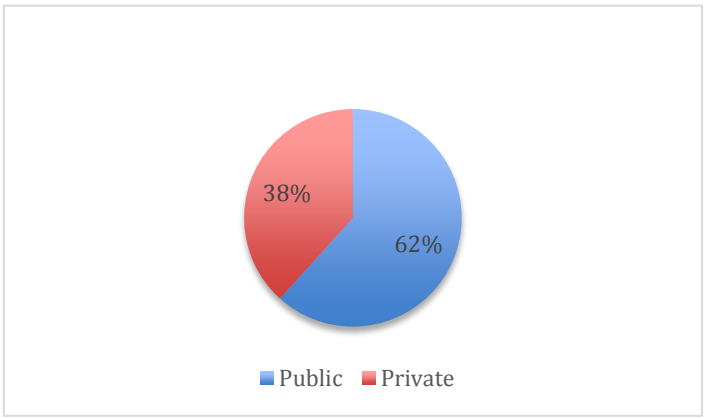
Demographic characteristics of the participants

This section shows the demographic characteristic and data of participants

Category of Institution

Figure 1

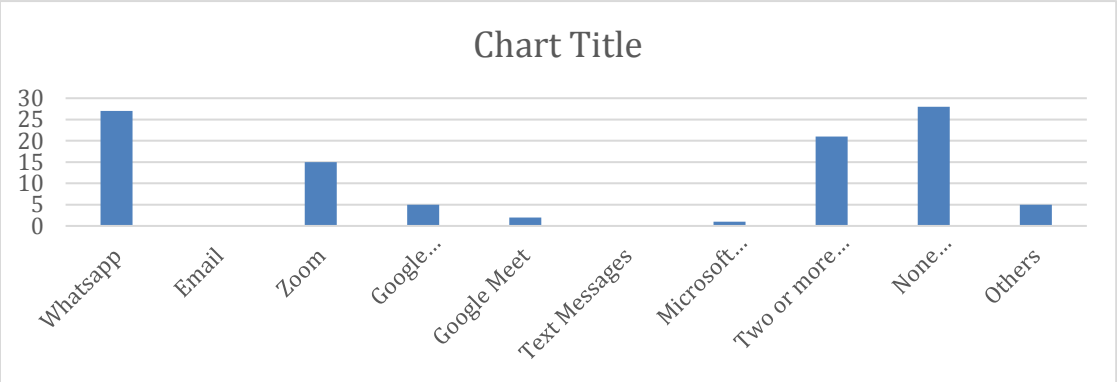
Category of Institution of participants



Note: Figure1 shows that 66 (62%) of the participants were students of public institutions while 41(38%) were students of private institutions. Apparently, there were more respondents from public institutions than the private institution.

Figure 2

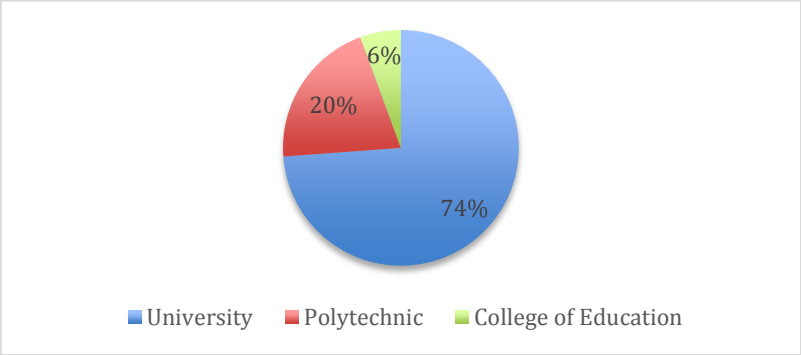
Online Teaching-Learning Platform



Note: Figure 2 shows that most of the student participated in online learning through the whatsapp platform while none of the students utilised the text message and email as a platform for learning.

Figure 3

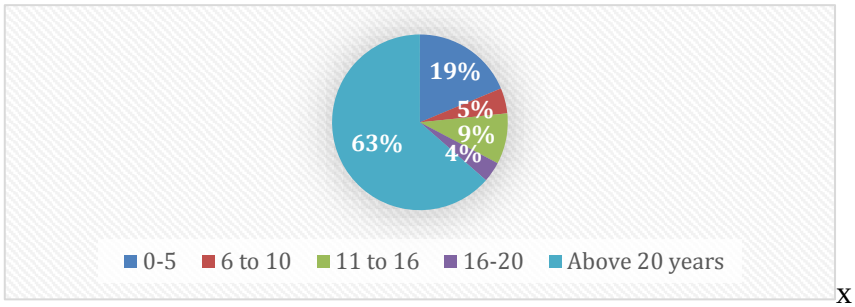
Type of institution



Note: Figure 3 indicates that respondents included university 79(74%), polytechnic 22(21%) and college of education 6(6%) students with university students being the majority and college of education students being the least.

Figure 4

Age of Institution

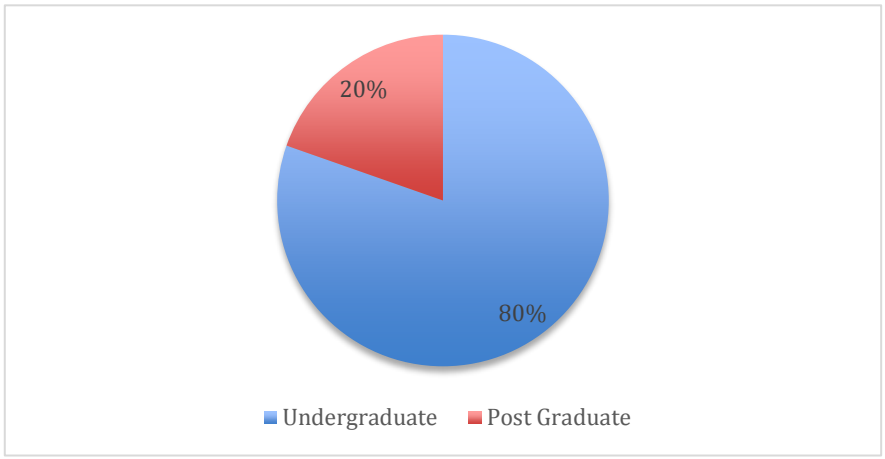


x

Note: Figure 4 is showing that 20 (19%) of respondents were from institutions that had been in -existence from 0 to 5 years; 5(5%) were from institutions between 6 to 10 years, 10(9%) from institutions between 11 to 15 years, 4(4%) from institutions between 16-20 and then 68(64%) from institutions founded over twenty years ago.

Figure 5

Student Academic Level



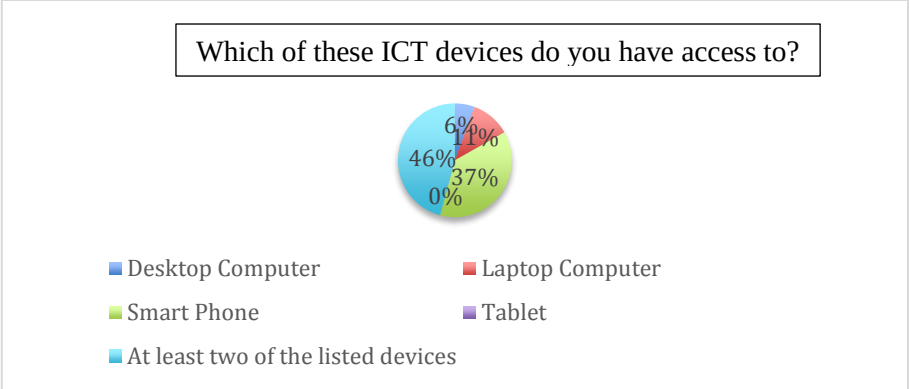
Note: Figure 5 shows that 86(80%) of respondents were undergraduates while 21(20%) were postgraduates.

Answer to research Questions

1. In what ways have students accessed ICT support for online learning?

Figure 6

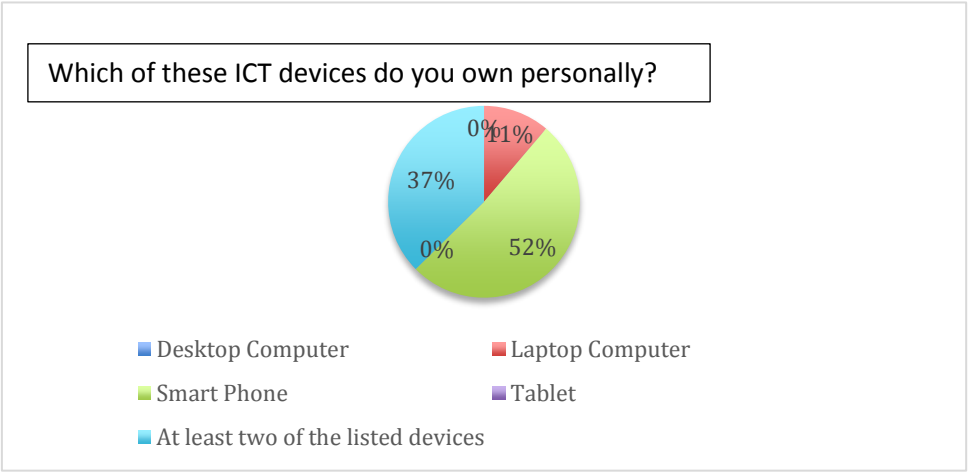
ICT Access



Note: Figure 6 shows the various ICT devices which students have access to. The data shows that 49 (46%) students had access to at least two of either desktop computer, smart phone, laptop computer or a tablet. A significant number of students 40(37%) also accessed online learning spaces via the smart phone.

Figure 7

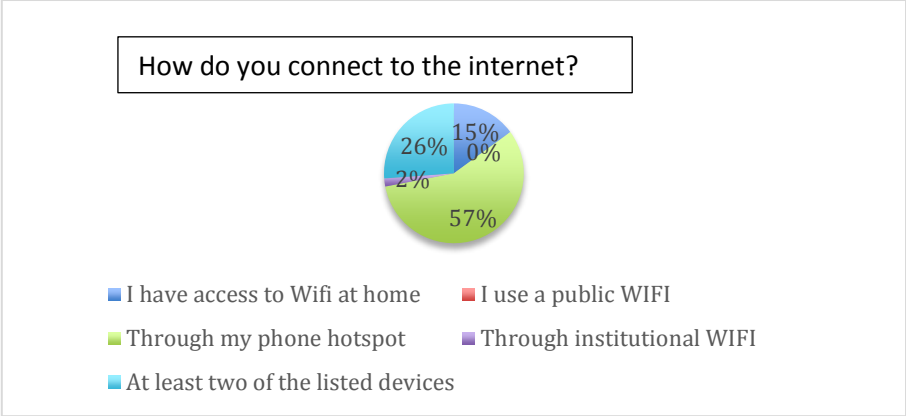
Ownership of ICT devices



Note: Figure 7 indicates that 55(51%) of the respondents owned a personal smart phone while 40(37%) owned at least two of either desktop computer, smart phone, laptop computer or a tablet.

Figure 8:

Internet Access



Note: Figure 8 indicates that a significant number of respondents 61(57%) accessed the internet via personal phone hotspot while only 2(2%) had access through institutional Wifi.

2. How often do lecturers leverage on ICT skills of students to support engagement in online learning?

Table 1: Frequencies, Percentages, Mean and Standard Deviations (SD) of the Responses on ICT Skills in Lagos and Ogun States Higher Institutions(N=107)

S/N	Statements						
	During the Covid-19 online learning experience, Students were given opportunity to:	**Always**	**Often**	**Sometimes**	**Never**	**Mean**	**St.Dev**
1	Design and build a web page as part of the course	14 (13.1%)	30(28.0%)	8 (7.5%)	55(51.4%)	2.03	1.15
2	Create and present content with powerpoint as part of	13(12.1%)	40(37.4%)	13(12.1%)	41 (38.3%)	2.23	1.10
3	Create and present an audio/video as part of course requirement.	20(18.7%)	36(33.6%)	14(13.1%)	37(34.6%)	2.36	1.14
4	Download or access online audio/video recordings of lectures they could not attend	38(35.5%)	28(26.2%)	17(15.9%)	24(22.4%)	2.75	1.17
5	Download or access online audio/video recordings to revise the content of lectures already attended	33(30.8%)	31(29.0%)	16(15.0%)	27(25.2%)	2.65	1.17
6	Download or access online audio/video recordings of additional content related to course work	31(29.0%)	32(29.9%)	17(15.9%)	27(25.2%)	2.63	1.15
7	Use a social networking platforms (e.g. Facebook) to communicate/collaborate with other students on the course	38(35.5%)	26(24.3%)	13(12.1%)	30(28.0%)	2.67	1.23
8	Create and keep a personal blog as part of course requirements	18(16.8%)	27(25.2%)	13(12.1%)	49(45.8%)	2.13	1.17
9	Contribute to another blog as part of course requirement	13(12.1%)	35(32.7%)	14(13.1%)	45(42.1%)	2.15	1.11

10	Use the Web to share digital files related to course (e.g. sharing photos, audio files, movies, digital documents, websites, etc	27(25.2%)	28(26.2%)	27(25.2%)	25(23.4%)	2.53	1.11
11	Use Web-conferencing or video chat to communicate/collaborate with other students taking the course	30(28.0%)	26(24.3%)	22(20.6%)	29(27.1%)	2.53	1.17
12	Receive pre-class discussion questions from lecturer via text message on personal mobile phone	23(21.5%)	31(29.0%)	22(20.6%)	31(29.0%)	2.43	1.13
13.	Learn about the technological tools to be used in class	27(25.2%)	25(23.4%)	20(18.7%)	35(32.7%)	2.41	1.19

Key: Always (4), Often (3), Sometimes (2), Never (1) , St.Dev.=Standard Deviation

Test of Hypotheses

All hypotheses were tested at .05 level of significance.

Hypothesis

Ho: There is no significant relationship between students' ICT skills and engagement in online learning.

Table 2: Relationship between students' ICT skills and engagement in online learning.

	N	Mean	SD	r	P	Remark	Decision
ICT Support		2.44	0.93		0.00	Significant	**Ho1 rejected**
	107			0.71*			
SE		2.44	0.93				

Correlation is significant at 0.05 level (two-tailed)

Information on Table 9 shows the relationship between ICT skills and engagement of tertiary institution students. The result of the tested hypothesis shows that there was a positive and significant relationship between ICT skills and engagement of tertiary institution students in Lagos and Ogun States ($r = 0.71^*$, $P = .01 < 0.05$). Thus, the null hypothesis which stated that there is no significant relationship between students' ICT skills and engagement in online learning was rejected.

Discussion of Findings

Findings in this study showed that a significant number of students accessed ICT support especially in areas of devices and internet access through personal efforts via the use of their personal mobile phones and devices. It was obvious that there were limited opportunities in terms of institutional support for data, devices and internet access. This is likely to be as a result of the sudden emergence of the Covid-19 that suddenly required that institutions plan in the midst of numerous uncertainties. Beyond the sudden nature of the pandemic, it is not a hidden fact that provisions such as devices and data for learning purposes are solely the responsibilities of students in higher education institutions of learning in Nigeria. In some institutions, particularly in public owned institutions, access to networks is limited to certain

parts of the school which may not be convenient for students at certain times. This way, some students patronize cyber cafes for internet access to do assignments or to download information. Indigent students have a hell of time coping with this situation, and sometimes may have to wait to use their friend's facilities. This is in agreement with the study of Ajegbelen (2016), who found that many university lecturers and students visit cyber cafes within and around their institutions to use internet facilities, while the ones that can pay for private modems, buy for their personal use. The inability of students to have access to internet facilities when they need them does not encourage learning at all. This poses the need for policy makers to act in the interest of the school and students, by equipping schools with needed internet facilities.

Test of the hypothesis showed a significant relationship between ICT skills and students' engagement in online learning. This relationship shows that with the lecturers have opportunities to leverage on students' ICT skills to support active learning activities that will promote better learning outcomes. When students are actively engaged, they tend to be connected and eventually utilise what has been learnt in problem solving. ICT skills are important for online spaces. By engaging in powerpoint presentations, conducting online research, sharing ideas through the whiteboard and engaging in group conversations in online learning spaces, students are able to learn deeply and thereby taking ownership of their own learning. It is however pertinent to note that lecturers are saddled with the task of presenting the opportunity for such activities to the students thereby making a case for continual professional development on online teaching strategies that engage students effectively. The lack of these skills can pose very frustrating challenges to students and cause some form of disengagement from learning.Such disengagement leads to students logging in for classes and then leaving to engage in other things that seem more important. Engaging students promotes commitment and sense of belonging to the school community. Students seem to interact

regularly with their personal devices and this presents an opportunity for facilitators of learning to utilise the same devices for learning activities. In this regard, it is advisable that both lecturers and students are subjected to trainings on ICT skills to enable engagement in any form of online learning.

Conclusion

It has been established that student ICT skills is a tangible resource that could support lecturers bid to provide engaging content and activities for learning outcomes to be achieved. It is however expedient for lecturers to upgrade their skills such that facilitation will promote engagement that aligns with the demands of the new mode of learning in online spaces.

Recommendation

From the findings of this study and the conclusions drawn there from, the study makes the following recommendations:

1. Lecturers and facilitators of knowledge in the online learning space should make concerted efforts to up-skill such that facilitation of learning will be engaging for the students. This will help close the gap between traditional face-to-face and online learning which has become the new normal.
2. Higher institutes of learning should engage in public-private partnerships that will provide opportunities for acquisition of devices reduce the cost of access to internet connectivity.
3. Leaders of higher institutions need to provide data to relevant government agencies to engage in partnerships that will breed home-grown solutions to the challenges of access facing the students especially in utilisation of ICT devices and skills in teaching and learning.

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