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Digitalizing Nigerian University Learning System: How Ready Are the Students?

Chinenye Blessing Amaonye*, **Adaora Vivian Anyaeji**

Department of Educational Management &Policy, Nnamdi Azikiwe University, Awka, Anambra State

Correspondence: cb.amaonye@unizik.edu.ng

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Abstract: The Nigerian higher education has been plugged into a huge gap between the demand for higher education and the shortage in supply as a result of its inability to absorb the increasing number of students which has been exasperated by the persisted industrial actions by the university lecturers, insecurity, associated effects of post Covid 19 pandemic, among others, thereby hindering access to the teeming population of admission seeking individuals to universities. To this end, the study investigated the online readiness of students towards digitalization of university learning system with 333 out of 2000 undergraduate students in public universities. Three research questions guided while Students' Readiness for Online University Learning Scale (SROULS) instrument was developed for this study. The results indicate high level of readiness of students towards digitalization of university learning with overall mean of the construct at 3.73. Also, the percentage level of online readiness of female student insignificantly differs from the male students. Challenges affecting digitization of university learning system were identified. Therefore, it recommended legalization of online university system and provision of enabling environment for its successful implementation in Nigerian education; improved power stability, internet connectivity among others.

Keywords: Digitalization, University System, Online Readiness, Covid-19, Online Learning Model

INTRODUCTION

Historically, Nigerian education system has continued to be a part of the discourse on conventional learning system and educational development. Following the establishment of National Open University (NOUN) in 1983, it became the first distance learning tertiary institution in Nigeria. Its enactment was necessitated by the inability of the traditional means of education to meet the growing demand for education. Though, the institution was shut down for a long period of time as a result of military interference in governance, it was later reactivated in 2002 in order to leverage on the emerging technologies as well as fill the widening gap between the demand and supply of education in the country; and paved way for open and distance learning system. NOUN introduced Open Distance Learning (ODL) which relied heavily on printed materials, face to face tutorials services and consequently advanced in the use of electronic media such as CD Rom, emails, internet among others. Jimoh (2013) noted that the emergence of the system of ODL was an inevitable and unparalleled advancement in the history of educational development in Nigeria and internationally. Unlike the formal system of education which has its inherent limitations with regards to expansion, provision of access, equity and cost- effectiveness, the growth of open and distance mode of education has now made education flexible by providing increased educational

opportunities to a larger population in different situations and needs. However, the problems of education have continued to persist.

In recent times, the Nigerian education system has been plugged with myriads of problems ranging from inadequate accessibility, lack of funding, Covid-19 and persistent industrial strike actions which are currently ravaging the system (Amaonye et al., 2022; Federal Ministry of Education, 2004; Ebuara et al., 2020).

Inaccessibility has remained one of the problems associated with higher education in Nigeria. Jimoh (2013) reported that the provision of quality education to millions has been one of the struggles facing developing countries such as Nigeria. Experiences both nationally and internationally have shown that conventional education is extremely hard pressed to meet the demands of today's socio educational milieu especially for developing countries like Nigeria coupled with the inability of qualified candidates to get a space in the conventional universities in Nigerian. The limitation of spaces in the universities imposes restrictions on access. Reports have indicated that within a period of 10 years, the percentage of candidates admitted in higher education in Nigeria was highest in 2019/2020 with 52.9% but only 44% were admitted leaving 545,420 candidates unadmitted. However, the figure dropped drastically in 2020/2021 academic year with 28.3% of applicants admitted in 2021. This showed that number of students being denied access to higher education continues to increase (Amaonye et al., 2022). This trend has continued to exists as students repeat the circle over and over hoping to, apparently gain admitted into higher institutions which may often be unrealizable leading to inaccessibility of higher education (Amaonye et al., 2022).

In addition, the industrial actions by the Academic Staff Union of Universities (ASUU) have become a recurrence narrative in the higher education in Nigeria which unarguably continues to disrupt the academic pursuits of young Nigerians with high percent of them remaining in school longer than usual and even graduating later than stipulated duration. The university system has witnessed persistent industrial/strike action which has assumed a historic pedigree in the past 18 year. However, these problems can be eliminated with the digitalization of higher education in Nigeria through online university system (Amaonye et al., 2022).

Further, the Covid 19 pandemic exposed the weakness in teaching and learning in Nigerian schools because the typical teaching paradigm failed (Anyaogu & Onuoha, 2021). It was reported that when the education sector was shut down temporarily in compliance to Covid 19 safety measures, the students and pupils remained redundant at home without any form of education, the personnel/lecturers in the institutions of learning suffered academic atrophy, while the facilities were exposed to deterioration. The students were idly kept at home without any form of learning (Amaonye, 2021). Researches have proven that the pandemic has lowering effects on adolescents' academic motivation (Aboagye et al., 2020), induced loss of learning (Kuhfeld & Tarasawa, 2020; Turner et al., 2020), and has caused low academic performance (Kuhfeld et al., 2020) among students. This has necessitated the call for strengthening of online learning system in Nigeria.

In response to the needs of education sector, it was reported that the Nigerian government through the National University Commission (NUC) (2020), granted 'conventional license' to 12 universities in the country to operate a dual-mode system which include face to face learning in the classroom and the open distance learning. According to the report, the dual-mode refers to universities that can give instructions in the conventional classroom that is face to face, and it can also give instructions on open and distance learning. As a result, two learning modes were initiated which include traditional learning mode and online learning system while both exist simultaneously in the universities (NUC, 2020). Later, it was extended to all other universities in order to bridge the gap created by the pandemic in education sector.

Online learning is an alternative form of education. As an internet-based learning, its demand has increased which is as result of inadequacies of traditional face to face system

particularly in Nigeria. According to Simanihuruk et al. (2019), online learning or web-based learning is a part of e-learning which is characterized by the use of digital media and other devices. Widodo et al. (2020) affirmed that all learning activities that use electronic media can be categorized as e-learning but argued that not all e-learning can be categorized as online learning. The scholar stated that learning can be said to be online if it uses the internet network. Online education is the education that is supported by or conducted through the internet. In other words, it is an internet-based teaching and learning process which occurs in digital environment. It has been stated that courses in online learning mode rely on a broad range of technology-based learning tools, delivery methods, and incorporation of elements of technology into the teaching-learning environment (Warfvinge et al., 2021).

Agreeing, US Department of Education (2012) stated that online learning refers to instructional environments supported by the internet. It comprises a wide variety of programs that use the internet within and beyond school walls to provide access to instructional materials as well as facilitate interaction among teachers and students. Online learning can be fully online or blended with face-to-face interactions. In online setting, communication is interactive in real-time using audio-video conferencing and instant messaging which creates a conducive learning atmosphere similar to a face-to face classroom (Murphy & Laferriere, 2007). Online education can also be regarded as digitalized education.

Digital education is the type of education in which instructors and learners (i.e. students) utilize digital technologies to deploy teaching and learning via remote location (Oriji & Torunarigha, 2019); which has become an increasing feature of education in many societies occasioned by the fact that many of the younger generations of the 21st century were born as "digital natives," who from birth speak the language of digitalization, computers, video games, and the internet (Egielewa et al., 2022). It has been observed that students have grown up surrounded by digital technology such as smartphones, computer devices, high-speed internet, social media, e-mail, telegram, and online-based messaging services (e.g., WhatsApp) (Oriji & Torunarigha, 2019). When these tools are deployed for educational purposes, then such a form of education is called digitalized education (Egielewa et al., 2022). According to Siemens (2020), digitalized education is perceived as education that deploys "the use of desktop computers, mobile devices, the internet, software applications, and other types of digital technology to teach students of all ages. Contextually, digitalized/online university learning or education is a form of instruction/learning delivered through electronic medium such as internet, software programs, and other technological gadgets to facilitate the transmission of knowledge, as well as teaching and learning process in digital university environment which could be independently established or housed within the existing traditional university. According to the scholars, if legalized and institutionalized in Nigerian education system, online/digitalized university education can offer an ease mode of learning and convenience to the learners everywhere especially in balancing work, family and other obligations. Li and Lalani (2020) argued that the advantages of e-learning over classroom learning are a result of students being able to study at their own pace, ability to go back to listen to recorded lectures, and e-read materials amongst others. Ward cited in Asgarova et al. (2021), revealed the comfortability of online learning which provides a certain level of personalized and self-paced learning experiences. Supporting this assertion, Mukhtar et al. (2020) opined that the use of online learning has enormous advantages as it encourages self-paced learning and offers new possibilities of knowledge to students. Regardless its benefits, some scholar noted otherwise. According to Li & Lalani (2020), online learning still presents several challenges (e.g., lack of access to digital tools for digital learning and absence or poor internet connectivity). In the assertion of Gutierrez (2016), the learning retention rate was 25–60% in e-learning compared to 8–10% in classroom learning and students learn five times more materials in e-learning than they would do in the classroom even though the students spend 40–60% less time in e-learning than in classroom learning with regards to effectiveness. More so, it has been asserted that e-learning does not achieve as much as classroom learning because of poor access to digital tools such as computers, internet connectivity, and the digital divide (Bansal, 2020; Goldstein et al., 2020; Lau et al., 2021; Srivastava, 2020). In

addition, Goldstein et al. (2020) found out that less than half of American students are not undertaking online classes in the COVID-19 era due to chronic absenteeism and nonperformance of assignments; and that a real university environment is irreplaceable and the key to deep understanding (Lau et al., 2020)

While the clamour for the legalization of digitalized/online university continues to heightened, Egielewa et al. (2022) investigated students' perception of online learning in Nigerian institutions of higher learning. It was found that 1 in every 10 students failed to participate in any form of online lectures during the pandemic. Moreover, two-thirds of all institutions of higher learning in Nigeria that engaged in semester-based online activities were universities closely followed by polytechnics and then colleges of higher education. three out of every five students spent only two hours for online lectures on a daily basis corresponding to a quarter of the normal eight hours of daily lecture time in a typically physical classroom setting. Further, the findings revealed that approximately two out of every four students of higher institutions that were satisfied with the online learning activities during the pandemic were university students compared to only one each for polytechnics and colleges of higher education. However, little is known about whether students are cognitively and emotionally ready to learn online since the success of online university will partly depend on the readiness of the students. This implies that the level of readiness of the students will determine the success or otherwise of digitalized/online university in Nigeria.

Purposes Of Study

Many researches on students' online readiness have differed. These differences may have arisen from the different constructs adopted for the studies. Also, these constructs focused on many competencies regarding online learning readiness while disregarding the aspect of availability of computer and related gadgets. Therefore, the purpose of this study was to examine the students' readiness towards online university learning in Anambra state and to propose a construct that can be used by researchers and institutions.

Research Questions

1. Could SROULS be constructed?
2. What is the level of readiness of students towards digitalized/online university learning system?
3. Does the gender of students make any difference in their readiness for digitalized/online university learning system?
4. What are the challenges confronting students' readiness towards digitalized/online university system?

LITERATURE REVIEW

Learning Readiness

Learning readiness is an important factor considering the peculiarity of online learning. Maddox, Forte and Boozer cited in Wang et al., (2020) defined learning readiness as the possession by the learner of the requisite emotive-attitudinal, cognitive, behavioral characteristics, skills, and orientations needed to be a successful learner. From this, it can be deduced that many factors are determinants of learning readiness. In other words, what constitutes students' readiness is their ability to manage their attitude towards their emotion, ability to understand and acquire knowledge, positive learning dispositions, having requisite technological skills, receptiveness towards online university. Online learning readiness refers to students' preparation to learn effectively in an online environment (Demir &Horzum, 2013; Wei & Chou, 2020). They added that learning readiness is a critical factor influencing learner's receptivity to learning and success within learning context. The readiness of students towards online learning may differ in terms of gender and programme of study.

Some empirical findings have found differences in variables under study. Widodo et al. (2020) claimed that there was lack of learning readiness among students. Priyadarshini & Bhaumik (2020) asserted that in the high school settings, students were found to

have inadequate digital skills for online learning in Delhi. This corroborated the report of OECD in Reimers & Schleiecher (2020) that most adolescents from diverse countries from 15 years were not ready to learn online. However, it is worthy to note that being ready to online learning or education may differ in context in each country or institution. In affirmative, Smith cited in Wang et al. (2020) noted that online learning is not purely about having a place or a computer with which to study, but requires specific skills and online learning self-efficacy. Researches have indicated that students struggle to be cognitively engaged in class without the motivation of in-person interactions with teachers and peers during online learning (Kim & Frick, 2011; Zembylas et al., 2008).

More so, Aguilera-Hermida (2020) asserted that the new platform delivers information in an entirely different way within a totally different environment (i.e., school vs. home), which requires students to use technology and communicate effectively virtually while resisting distractions in the new environment. This may affect the level of readiness towards online learning. Many factors have been identified as determinants of digitalized/online learning readiness. Computer and internet self-efficacy (Hatlevik et al., 2018), learners' self-efficacy in online context (Teng et al., 2014), online communication self-efficacy (Yu, 2018), considered basically confidence in the operations of computer, use and management of course software and effective communication using the online tools. It was reported that many universities in US created self-assessment instruments which they used for their students and some of which these were not validated or published (Martin et al., 2020). Table 1 below is a list of some existing instruments found from a Google search as compiled by Martin et al. (2020).

Table 1. Summary of Available Online Student Readiness Survey Instruments

Name of Instrument	Author/Date	No of items	Constructs Measured	Validation
Distance Learning Survey	Mattice and Dixon (1999)	25 items	Student readiness, student assess to/use of technology, and student interest in distance education, demographic questions	Muse (2003); Osborn (2001)
Readiness for Online Learning (ROL)	McVay (2000/2001, 2003)	13 items	Self-management of learning (time management and self-discipline), comfort with e-learning (technical skills and use of discussion boards)	Smith, Murphy, and Mahoney (2003); Smith (2005)
E-learner Readiness Self-assessment	Watkins, Leigh, and Triner (2004)	27 items	Technology access, online relationships, motivation, online video/audio, internet discussions, importance to success	Watkins, Leigh, and Triner (2004)
Test of Online Learning Success (TOOLS)	Kerr, Rynearson, and Kerr (2006)	45 items	Computer skills, independent learning and dependent learning preferences, need for online learning, academic skills	Kerr, Rynearson, and Kerr (2006)
Online Learning Readiness Survey (OLRS)	Dray and Miszkiewicz (2007)	40 items	Learner characteristics, technology capabilities, online skills, self-management	Dray and Miszkiewicz, (2007)
Online Learning Readiness Scales (OLRS)	Hung et al. (2010)	18 items	Computer/internet self-efficacy, online communication self-efficacy, self-directed learning, learner control, motivation for learning	Hung, Chou, Chen, and Own (2010)
Questionnaire for Predicting Online Learning Achievement	Bernard, Brauer, Abrimi and Surkes (2004)	38 items	Confidence in prerequisite skills, self-direction and initiative, desire for interaction beliefs about distance education	Hall (2011)
Student Online Learning Readiness (SOLR)	Yu and Richardson (2015)	20 items	Social competencies with the instructor, communication competencies, social competencies with classmates, and technical competencies.	Yu and Richardson, (2015); Yu (2018)
Online Learning Self-Efficacy scale (OLSES)	Zimmerman & Kulikowich (2016)	22 items	Learning in the online environment, time management, technology use	Zimmerman & Kulikowich, (2016)

Name of Instrument	Author/Date	No of items	Constructs Measured	Validation
Student Readiness in Online Learning (SROL)	Martin et al. (2020)	20 items	Knowledge, importance, confidence, readiness	-

Source: Martin et al. (2020)

While many scales had four factor scales, Hung et al. (2010) (computer/internet self-efficacy, online communication self-efficacy, self-directed learning, learner control, and motivation for) and Penn State University (self-direction, learning preferences, study habits, technology skills, computer equipment capabilities) constructs included five factors in the scale focusing on specific learner competencies. Yet, researches have not evaluated the impact of availability of computer/internet gadgets in the readiness of students towards online learning particularly in technologically disadvantaged country like Nigeria. It becomes imperative consideration in this context.

Table 2. Summary of Online Student Readiness Survey Instruments by Universities

Name of University	Readiness Instrument	Construct	Url
Penn State University	Online Readiness Questionnaire	Self-Direction, Learning Preferences, Study Habits, Technology Skills. Computer Equipment Capabilities	http://tutorials.istudy.psu.edu/learning online/ORQ/ORQ.htm
University of Arkansas Online	Online Course Readiness Quiz	Computer Skills, Learning Style, Online Learning, Academic Skills	https://online.uark.edu/students/readiness-quiz.php
University of Hawaii W'Ohau	Student Online Readiness Quiz	Technology skills and access. Time management	https://westoahu.hawaii.edu/distancelearning/student/student-online-readiness-quiz/
University of Illinois Springfield	Are you Ready to be an Online Learner?	Self-direction, Learning Preferences, Study Habits, Technology Skills, Computer Equipment Capabilities, Online Learning Awareness	https://www.uis.edu/online/ready-for-online/
North Carolina Community College Virtual Learning	Online Readiness Assessment	Study Habits/ Course Participation & interaction, Technology Access & Computer Skills, time Management/personal commitment/motivation	http://vlc.nccommunitycolleges.edu/faculty/onlinereadiness-checklist/
California State University Stanislaus	Online Readiness Self-Assessment	No construct	http://www.csustan.edu/academics/onlineprograms/online-readiness-self-assessment

Name of University	Readiness Instrument	Construct	Url
Wichita State University Online Readiness Self-Assessment	Online Readiness Self-Assessment	No Construct	https://www.wichita.edu/services/mrc/elearning/online_orientation/online_self_assessment.php
Colorado Community Colleges	Online Online Learning Readiness Survey	No Construct	https://www.ccconline.org/survey-copy/

Source: Martin et al. (2020)

Availability Of Technological Gadgets

Availability of technological gadgets is an important aspect in determining the readiness of students towards online university in Nigeria. This is because its availability enhances teachers and particularly the students' knowledge to become more self-sufficient. It makes distinctive difference in the learning environment, expands the range of choices and opportunities by facilitating greater access to students' educational development and it opens up equal opportunities to both students and teachers as well as help to level the playing field by increasing the students' participation in economic and human development (Amesi & Yellowe, 2018). However, the scholars noted that the absence of information and communication technology in the learning environment destabilizes the students and make them not current in the aspect of information and communication technology.

Findings have revealed that there was poor presence of multimedia projectors, software packages, internet facilities, interactive white boards and laboratories in college of education and that learning electronically in Nigerian universities showed that the e-learning facilities were inadequate and students' access to these facilities was very negligible (Everest & Laura, 2011; Amesi, & Yellowe, 2018). Further, it has been reported that the major issue confronting institutions of higher learning is non availability of information and communication technology gadgets and if these gadgets are available, they are not effectively utilized for the purposes of teaching and learning. This buttressed the point that technological gadgets must be made available before they could be utilized effectively for teaching and learning (Amesi & Yellowe, 2018). Agreeing, Anumnu (2008) asserted that non-availability of technology resources in schools hinders their actual utilization in our school system. These researches focused on the availability of technological gadgets at institutional level, prompting the need to examine the same at students' level. This is necessary because it is believed that if technological gadgets are available or unavailable among students, it will either impact or impede their readiness towards digitalized/online university education. Therefore, the availability of technological gadgets will positively impact on students' readiness towards online learning.

The inclusion of availability of computer/internet gadgets factor is considered important because not all countries are technologically sufficiency to provide the technological needs of the population. Many developing nations including Nigeria are still crumpling with availability and advances in technology, coupled with the high cost of obtaining and maintaining technological gadgets such as computers, internet connectivity among others. Yet no researchers have examined the relationship between availability of technological gadgets as well other competences to ascertain students' level of readiness towards digitalized/online university learning.

Suffice to say that availability of technological gadgets can be a positive determinant of students' readiness towards digitalized/online university education. This is because if students demonstrate high level of readiness towards online university in Nigeria, it can give credence to

the establishment and institutionalization of online university while eliminating the barriers to achieving uninterrupted university education in the country.

METHOD

The population of the study consisted 2000 undergraduate students in public universities in Anambra state. The sample size was calculated using Yamane's formula with a confident level 95% and an error 5% (P = 0.05). Based on the formula, this study obtained 333 samples. The study used Students' Readiness for Online University Learning Scale (SROULS). The instrument utilized 4-Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree) to avoid bias of central tendency (Kostoulas, 2013). Also, open-ended questions on the possible challenges the student are likely to face in online university learning system was applied to elicit qualitative information of students' problems and challenges towards online university learning. The question was also used in the focus group interview to provide deep insight of the possible problems/challenges the students may encountered toward online university learning.

The Students' Readiness for Online University Learning Scale (SROULS) instrument was developed for this study after reviewing existing student readiness instruments and surveys as well as the literature. Several steps were undertaken to develop the SROULS. First the subscale definitions were determined by using previous research. Penn State University Online Readiness Questionnaire and Hung's Online Learning Readiness Scale were implored while developing the SROULS. The Penn State University's ORQ instrument contained 24 items. Though, some of the ORQ items addressed expectation, self-direction, learning preferences, self-duty habits, technology skills and hardware/software requirement which related to availability. However, the instrument did not include all the items that captured student readiness. Similarly, the Hung's OLRS instrument had two similar categories of computer/internet self-efficacy and self-direction competencies. Though, the instrument captured all the items that addressed students' readiness but did not include the aspect of availability of technological gadgets. Second, using these two instruments, items that aligned to the research questions of interest were selected and items that were not already included were generated.

The instrument contains 35 items and organized into seven subscales: (a) Availability of Technological gadgets and software (5 items), (b) Computer/Internet Self-efficacy (5 items), (c) Self-directed learning (5 items), (d) Learner control (in an online context) (5 items), (e) Motivation for learning (in an online context) (5 items), (f) Online communication self-efficacy. (5 items), (g) Technology /Technical skill. The items can be seen in Table 2. The responses were rated on 4 points scale: Strongly Disagree- 1, Disagree- 2, Agree- 3, Strongly Agree - 4

After the development of the items, the instrument was subjected to review by the experts. The validation and reliability of the instrument were determined to measure face validity, construct validity, and content validity. The feedback from experts included items on clarity, wordiness, negative wording, overlapping responses, balance, use of jargon, appropriateness of responses listed, use of technical language, application to practice and relatedness to the problem. Their suggestions were affected in the instrument. It implored expert review rubric to receive feedback from the experts which was designed to measure face validity, construct validity, and content validity and was as well as feedback from experts. Items on clarity, wordiness, negative wording, overlapping responses, balance, use of jargon, appropriateness of responses listed, use of technical language, application to practice and relationship to the problem were included on the rubric. The new instrument and review rubric were further sent to two learning experts to identify face and content validity. Their suggestions were affected in the instrument.

The instrument was evaluated by 3 experts. The co-efficient of reliability of the instrument was determined using Cronbach's Alpha value which yielded .84 and.81 for male and female respectively with overall value of .83. Then, a pilot test was carried out on 30 students to verify reliability, and Cronbach's Alpha value of .83 was obtained. The overall value was 0.85. The questionnaires were administered through online and offline modes. The participants were selected from different disciplines – education, social science, management sciences, and medical sciences at

different levels of education to reflect possible variations in the readiness of students towards digitalized/online university learning system.

Regarding data analysis, frequency and percentage were used to figure out the students' demographic data from part one of the questionnaire. Mean and standard deviation were employed to examine students' readiness in 7 aspects. The criteria used to interpret mean values (Srisa-ard, 2010) were as follows:

3.76-4.00= students have high level of readiness
2.76-3.75= students have slightly high level of readiness.
1.76-2.75= students have slightly low level of readiness
1.00-1.75= students have low level of readiness

The qualitative data of challenges affecting students' readiness towards digitalized/online university learning and possible solutions were formed from open-ended questions. The focus group interviews were examined using thematic analysis and coding method. The codes were categorized to six key themes based on the questionnaire.

RESULT AND DISCUSSION

Results of Quantitative Study

From the Table 4, the result shown that the students had motivation for learning with the highest mean rating of 3.37 which indicated a slightly high level of readiness in term of motivation towards digitalization of university learning with overall mean of the construct were found at 3.73 indicating high level of readiness. This corresponds to with studies by Adewole-Odeshi (2014), Bali & Liu (2018), Opeyemi et al. (2019) and Egielewa et al. (2022) which found that students of several Nigerian universities were positively disposed to e-learning. Further, in a study by Kituyi and Tusubira (2013), university students indicated that a blended form of studies was the best form of learning.

Table 4. The Level of Readiness of Students Towards Digitalized/Online University Learning in Anambra State

S/N	Items	N	X	SD	Decision
1.	Availibility of tech gadgets/software	332	2.76	.6411	Slightly high level of readiness
2.	Computer/internet self-efficacy	332	3.20	.5909	Slightly high level of readiness
3.	Self-directed learning	332	3.21	.4223	Slightly high level of readiness
4.	Learning control	332	2.84	.3974	Slightly high level of readiness
5.	Motivation of learning	332	3.37	.3914	Slightly high level of readiness
6.	Online communication	332	3.15	.5237	Slightly high level of readiness
7.	Technology/technical sk	332	3.22	.5517	Slightly high level of readiness
	Cluster Mean	**3.73**	**.372**		**High Level of Readiness**

In addition, the results shown the percentage level of online readiness of male and female student (see Figure 1). The female students shown higher percentage of online readiness more than their male counter parts which is in consistence with the previous researches which indicated that females had stronger self-regulation than males; and more positive in online learning outcomes

than males (Alghamdi et al. 2020); and that female learner proved more perseverant and engaged than males (Yu, 2021).

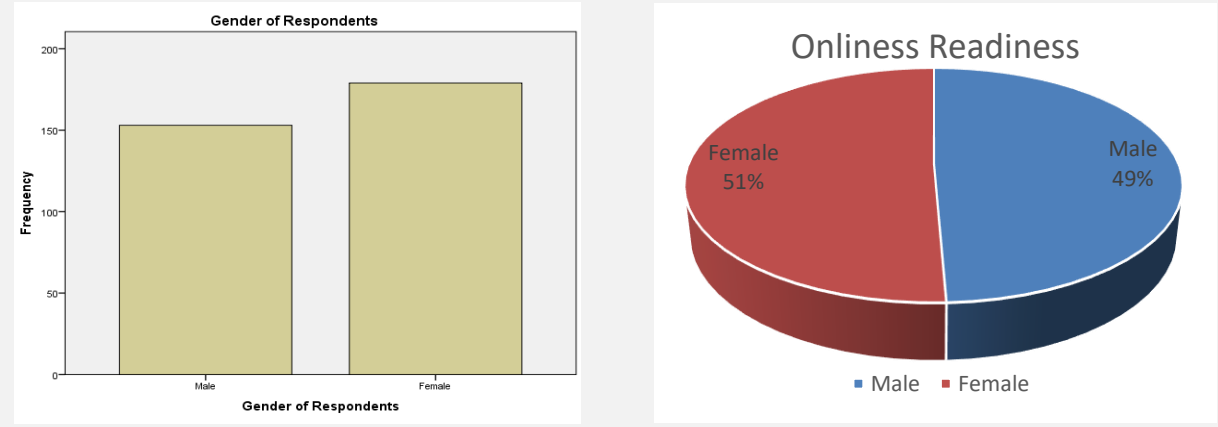

Figure 1. Students' online learning readiness based on gender

However, the result shown insignificant difference in the level of online readiness of male and female students (see Table 5). This is agreement with Nistor (2013) and Yu (2021) who found that insignificant difference in online readiness of male and female; and suggested it could be as a result of males' ability to use more learning strategies and had better technical skills than females. This position is in tantrum as male students have higher online technical readiness than female students.

Table 5. Means Rating of All the Components of Online Readiness

Gender of Students		C1	C2	C3	C4	C5	C6	C7
	Mean	2.7294	3.2157	3.2065	2.9098	3.4052	3.3346	3.2641
	N	153	153	153	153	153	153	153
Male	SD	.68804	.63599	.41321	.33946	.38179	.44770	.51690
	Std.error of Mean	.05563	.05142	.03341	.02744	.03087	.03619	.04179
	Mean	2.7978	3.1944	3.2101	2.7799	3.3374	2.9933	3.1888
	N	179	179	179	179	179	179	179
Female	SD	.59812	.55097	.43098	.43296	.39788	.53376	.57893
	Std. Error of Mean	.04471	.04118	.03221	.03236	.02974	.03990	.04327

C1=Availability of tech/ gadgets/soft-ware;
C2= Computer/internet self-efficacy;
C3= Self-directed learning;
C4= Learner Control;
C5= Motivation for Learning;
C6= Online Communication Self-efficacy;
C7= Technology/Technical Skill

Results of Qualitative Study

All survey participants were selected to participate in the interviews. Out of the 2000 participants, only 20 indicated interest to participate in the qualitative survey. Interviews were scheduled and conducted. The responses of the participants were comprehensively analyzed using thematic analysis. Six themes were extracted and regarded as the main challenges to the digitized/online university learning. The themes included:

Lack of Power

It is the perspective of many students that lack of power plays a major role to the success of digitalized learning system. Therefore, lack of it can mar the entire process. Some of codes from the participants regarding lack of power include unstable electricity, persistent power outage, high cost of alternative power and high cost of maintaining alternative power supply. Lack of steady power appears as one of the most barriers. Students suffer from high cost of getting, fueling and maintaining alternative power supply thereby increasing the cost of being online or participate in online learning. These factors have been identified as contributors to lack of readiness of students towards digitalized/online university learning system.

Inaccessible internet and Weak Network Issues

Another main highlighted theme is that students do not have access to effective internet provision. It has been identified that inaccessibility internet services and weak network issues are mainly related to weak and poor developed servers which persistently interrupting reception of service. These problems are summarized in the participant's response, *"The internet is easily disrupted like when you are online or doing something in the internet such as downloading a file or document, the internet will just hang and when it hangs, whatever you are doing will just stop making you to either wait or start all over again".* Therefore, digitized/online university learning may be affected by inaccessibility of internet connectivity. This affirms the position of Dhawan (2020) unavailability of proper digital tools, no internet connections, or iffy Wi-Fi connections can cause a lot of trouble due to which many students might lose out learning opportunities.

Unaffordability of Technological Gadgets

This is another weak dimension to readiness of students to digitized/online university learning. It was found that though the technological gadgets may be available but the cost of obtaining is rather high due to economic crisis. *'Not everyone can afford to buy laptop especially at the time of economic crises and the cost of obtaining or purchasing the is high".* A lot of time and cost is involved in e-learning; a considerable amount of investment is needed for getting the devices and equipment, maintaining the equipment, training

Computer illiteracy and Internet Distraction

These two themes are considered as a set of challenges confronting students' readiness to digitized/online learning. Some students are found to have little or no computer literacy which may affect their readiness. This is affirmed by Parkes et al. (2014) who found that Students were poorly prepared for several e-learning competencies and academic-type competencies as well as low-level preparedness among the students concerning the usage of learning management systems. The finding agrees with Li & Lalani (2020) who found that the major hurdle to online learning. Other clusters of challenges include cluster two which are personal factors (i.e., lack of motivation, boredom, and sheer laziness at 24%), cluster three which is financial (i.e., inability to buy enough data, 18%), and cluster four which are environmental factors (i.e., distraction by family members and too much of noise, 15%). In other words, infrastructural problems are the most serious challenges to effective student online learning in Nigerian higher institutions followed by personal, financial, and environmental factors. More so, Ugochukwu-Ibe & Ibeke (2021), Adeoye et al. (2020) found that unstable electricity, high cos of data tariff, inadequate IT skills among others are challenges of teaching technical courses through e-learning.

Finally, the findings of this research have shown that students of Nigerian universities are ready for digitalized/online learning for their education which have confirmed previous studies on online learning and justify the use of online readiness model which depicted slightly high level for all the components of the model. However, it is challenged by the high cost of technological amenities for online learning.

CONCLUSION

From all indications, it has been established that the readiness of students towards digitalized university learning system is an indication of their preparedness to overcome the various problems posing against their educational attainment. Therefore, it becomes imperative that;

1. Government should legalize online university system and provide the enabling environment for its successful implementation in Nigerian education. This will enable fully implementation and help in increasing the readiness of students towards online learning.
2. Technological gadgets should be subsidized for the students to increase affordability of online learning tools. This will enable every student to owe technological tools which boost online readiness.
3. There should be improved power stability, internet connectivity and service providers should upgrade the systems for efficient services in order to enhance effective participation in digitalized/online learning environment as well as eliminate the challenges to online learning system.

IMPLICATIONS

Future research studies could use this Students' Readiness for Online University Learning Scale (SROULS) instrument to measure students' readiness in various contexts such as postgraduate level of education, region, country as well as other higher institutions of learning. The physically challenged undergraduate students were not considered in the current study. Future researchers could focus on the group. More so, there is need for further validation studies for the instrument. This will be beneficial to confirm if the instrument measures all the components of the readiness of students towards digitized/ online university learning as designed.

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