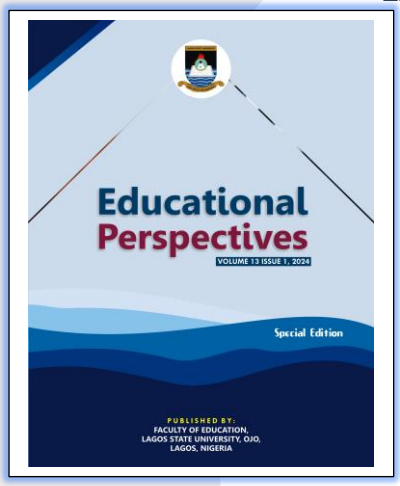

An Assessment of Students' Readiness for Digital Learning in Senior Secondary Schools in Lagos State

Ife Abodunrin, Molade Olugbenga & Awoniyi Roseline

Department of Educational Foundations & Counseling Psychology, Lagos state university Ojo, Lagos State Nigeria

KEYWORDS:

Readiness, Digital Learning, Assessment

WORD COUNT:
207

CORRESPONDING EMAIL ADDRESS:

ORCID NUMBER:

ABSTRACT

This study investigated students' readiness for digital learning in senior secondary schools in Lagos state, Nigeria. Descriptive survey research design was adopted for the study. A sample size of 245 respondents was randomly selected from four educational districts in Lagos state using confidence level of 95% (0.05). A Multi stage sampling approach involving both simple and stratified random sampling technique was used to select the participant. The participants were randomly selected across 8 schools in four educational districts. A checklist titled; "Students' Readiness towards Digital Learning" was used to elicit responses from the respondents. The instrument was validated and found to be reliable. It was personally administered by the researchers. Four research questions and two hypotheses guided the study. Both descriptive statistics such as mean and standard deviation were used to answer the research questions and inferential statistics was used to test the hypotheses. The findings of the study revealed among others that there is positive disposition/perception of respondents towards digital learning. The study also revealed that there is no significant gender difference in perception and utilization of digital learning facilities among the students. The study therefore recommended that the secondary school administrators should incorporate digital learning as part of the curriculum to enhance teaching and learning.

HOW TO CITE

Abodunrin I, Molade O & Awoniyi R. (2025). An Assessment of Students' Readiness for Digital Learning in Senior Secondary Schools in Lagos State. *Educational Perspectives, 13*(2), 212-220.

Introduction

The rapid progress and widespread acceptance of digital technologies have significantly transformed various aspects of human life. Zafiropoulos (2010). Among these changes, the field of education has also undergone a substantial evolution. Electronic learning, commonly known as E-Learning, has become a widely used technology in educational institutions for teaching and learning purposes, as well as for various interactions between teachers and students. The rapid pace of change and the uncertainty surrounding the evolution of knowledge transfer have underscored the importance for educational institutions to be mindful of students engaging in e-learning and to comprehend the roles of e-learning in knowledge exchange. Hung and Chou (2010). Digital learning has quite a contentious definition due to its application in different fields and the continuous evolvement of the systems used in such learning. However, it can be generally said that digital learning is the type of learning facilitated by technology or learning through digital media. Contextually, Holzberger, Philipp and Kunter (2013) regarded digital learning as delivery with digital forms of media such as texts or pictures through the internet in order to enhance learners' learning, to improve teaching effectiveness or promote personal knowledge and skills. This implies that digital learning is meant to enhance learning by exploring new technologies and applying them to learning contexts and not to totally rely on digital means of instruction delivery.

Therefore, digital learning is an instructional practice that ultimately helps students through various digital means such as the internet, corporate network, computers, satellite broadcasting, audiotapes, videotapes, interactive TV, compact disks, among others. Ming-Hung, Huang-Cheng, & Kuang Sheng, (2017). These mediums are applied in a broad range of technology-enhanced educational strategies including blended learning, network-based learning, computer-based learning, virtual classrooms, digital cooperation and other strategies that rely on digital tools. Lauren (2020). The global outbreak of COVID-19 virus affected all sectors of society, including the education system, which swiftly transitioned to digital education, also referred to as emergency remote teaching. Hodges, Lockee, Trust, Bond, (2020). Despite the existence of established digital learning platforms and the generally good technical proficiency of students, it would be erroneous to assume that all "digital natives" possess the ability to effectively utilize technology in academic settings. Alajmi (2010). Similarly, the acceptance of technology cannot be taken for granted. Consequently, in 2020, students were required to adapt to the challenges posed by the pandemic restrictions and uncertainties, including the shift to digital learning. Students necessitate (potentially enhanced) technical resources, relevant skills, and tools for utilizing hardware and software, as well as for engaging virtually with their instructors and peers. Readiness, a crucial element in the education and instruction process, serves as a significant determinant for the learning-teaching system. Bloom (1995). Changes in student behavior are contingent upon their readiness.

The readiness of both teachers to instruct and students to learn should not be overlooked in this new educational landscape. Therefore, readiness for online learning is manifested through factors such as time management, self-guidance skills inherent in online learning, utilization of internal motivational resources, recognition of individual learning styles, and prior experiences. Smith, Murphy, and Mahoney (2023). In order for students to derive advantages from online learning environments, it is imperative that they possess the necessary online readiness. Borotis and Poulymenakou (2014) provided a definition for online readiness, stating that it entails being

mentally and physically prepared for specific online learning encounters and activities. Additionally, online readiness encompasses the ability to effectively utilize e-resources, such as the Internet, by capitalizing on the available opportunities. Choucri, Maugis, Madnick, Siegel, Gillet, O'Donnel, Haghseta, (2023). Previous research has explored the concept of online learning readiness from various angles. Williams (2017) defined online learning readiness in three ways: students' preference for online education over traditional face-to-face learning, their ability to effectively use the Internet and computer-mediated communication for learning purposes, and their capacity for self-directed learning.

Hung and Chou (2010) introduced a Readiness for Online Learning Scale, which includes sub-dimensions such as self-directed learning, student autonomy, motivation, computer and internet self-efficacy, and online communication self-efficacy. These sub-dimensions are crucial for assessing students' readiness for digital learning, as they transition from conventional instructional methods to more innovative digital resources. In order to prepare for this transition, students must possess the necessary skills and knowledge to effectively embrace the change. These skills encompass proficiency in utilizing digital tools across various academic subjects and promoting a learning environment that goes beyond traditional classroom boundaries (Jing, 2023). The integration of technology holds significant promise in enriching the curriculum and instructional methods. The incorporation of digital learning into the school curriculum is crucial, as it enables students to engage in learning at their own convenience and location. Furthermore, students have the opportunity to take charge of their own learning through digital platforms, enabling them to access crucial resources online. Digital learning offers various advantages to students, such as access to a wide range of learning materials like text, audio, and video, as well as the ability to engage in online discussions, receive feedback, and participate in evaluations. Ultimately, digital learning serves as a valuable instrument in improving the overall quality of education.

Statement of the Problem

In today's era of information technology, the utilization of digital learning among students holds significant importance as it can improve their skills and boost their confidence. The younger generation is often referred to as digital natives due to their frequent use of Information Communication and Technology (ICT) in their daily routines. Research by UNDP (2019) shows that nearly 80% of students in developing nations feel unprepared to utilize technology effectively. Therefore, integrating information and communication technologies into the educational curriculum is essential for ensuring high-quality education (Hue and Jalil, 2013). Nevertheless, the mere existence of technology will not incite substantial transformations within a school. Educators play a vital role in the integration of digital learning in education. Without the active participation of teachers, the majority of students may fail to fully exploit the myriad advantages offered by digital learning independently. Hence, considering that the success of digital learning heavily relies on students' attitudes and preparedness, this research endeavors to examine the evaluation of students' readiness for digital learning in Lagos State, Nigeria.

Purpose of the study

The purpose of the study is to evaluate the preparedness of students for digital learning in senior secondary schools in Lagos state, Nigeria.

Research Questions

The study was guided by the following research questions

1. How do students perceive digital learning?
2. What factors motivate students to embrace digital learning?

3. What is the extent of utilization of digital learning facilities in schools?
4. What level of confidence do students have in digital learning?

Research Hypotheses

The study was guided by the following hypotheses:

1. There is no significant difference in student perception of digital learning facilities based on the gender of the students
2. There is no significant difference in the adoption of digital learning facilities based on the gender of the students.

Research design

The research utilized a descriptive survey design. The design primarily focused on quantitative analysis. The research population consist of all senior secondary school students in Lagos state, estimated to be 76,500 according to Lagos state government (LASSG) (2019). A multi-stage sampling technique was employed to select participants. Initially, the population was divided into three groups based on educational districts in Lagos for stratification purposes. This was carried out to guarantee equal representation from each educational district. By employing a straightforward random sampling technique that incorporates the pick and drop method, 60% (4) of the districts were sampled. As a result, a comprehensive list of all the schools in each selected district was compiled, and the names of the schools within each district were written on separate pieces of paper. Using the pick and drop method, two schools were randomly selected from each district, resulting in a total of 8 schools. Subsequently, 25 students were randomly chosen from each of these participating schools. Consequently, a sample size of two hundred students was formed for the study. A questionnaire titled; "Students' Readiness towards Digital Learning" was used to elicit response from the respondents. It comprises of three (3) sections and a four (4) point Likert scale. The instrument was validated by experts in the area of ICT education while test-retest method of reliability was utilized with reliability co-efficient of 0.72. This indicates that the instrument is reasonably reliable. The researcher administered the questionnaire to the participants with the help of research assistants for the exercise. Completed copies were collected after it was appropriately filled. The data collected were analyzed using descriptive statistics of frequency and percentage count of the respondents in the various categories. The influence and relationships among variables were determined by testing the hypotheses using Multiple Linear Regression and Pearson Product Moment Correlation Coefficient (PPMC) at a significance level of 0.05. The Statistical Packages for Service Solution (SPSS) were utilized to conduct the analysis.

Result and Discussion of Findings

Research Question 1: What are the perceptions of students towards digital learning?

To answer this research question, descriptive – mean and standard deviation were used and the result presented in table 1. Below

Table 1: Mean and Standard Deviation of Students Perception towards Digital Learning

S/N	Statements	mean	Std.Dev
1	Digital learning cannot be used for all subjects	3.60	.82
2	Digital learning reduces concentration and retention abilities	2.90	.87
3	Digital learning can be frustrating because of lack of power supply	3.21	.90
4	Digital learning makes learning easy	3.10	.93
5	Digital learning cannot be as effective as the traditional learning system	1.50	.78
Average Weighted Mean		**2.86**	**.86**

Note: N=200 (i) Maximum mean score= 4, Minimum Mean Score (1) (ii) Mean Bench Mark 2.5. 1

The Table 1. Shows that majority of the statements (1, 3 and 4) have mean scores that are above the cut-off mark of 2.50. This is also evident from the Weighted mean value of 2.86 with a corresponding Standard deviation of 0.86. These mean scores are high enough to conclude that the students' perception towards digital learning may be positive

Research Question 2: What are the motivating factors that will enable students' acceptance on digital learning?

To answer this research question, descriptive – mean and standard deviation were used and the result is presented in table 2. below

Table 2: Mean and Standard Deviation of Factors Motivating Students Acceptance

S/N	Statements	mean	Std.Dev
1	I have access to reliable computer device and internet	2.00	.85
2	I have never made use of any computer device except calculator	1.94	.90
3	Digital learning is more fun	3.07	.84
4	Digital learning permits freedom to ask questions and make suggestions in class or group discussion	2.65	.84
5	Digital learning provides the choice of studying more and choosing what to study	3.41	.72
	Weighted mean	**2.61**	**.83**

Note: N=200 (i) Maximum mean score= 4, Minimum Mean Score (1) (ii) Mean Bench Mark 2.5.

The table 2 shows that majority of the statements are above the mean cut-off mark of 2.5 that was regarded as acceptable. This is also evident from the Weighted mean value of 2.61 with a corresponding Standard deviation of 0.86 which is above threshold of 2.5. These mean scores are high enough to conclude that the factors identified were positive enough to motivate digital learning among secondary school students.

Research Question 3: What is the rate of utilization of schools' digital learning facilities?

To answer this research question, descriptive – mean and standard deviation were used and the result is presented in table 3. below

Table 3: Mean and Standard Deviation of Utilization of Schools' Digital Learning Facilities

S/N	Statements	mean	Std.Dev
1	I can operate computer to study effectively	3.40	0.32
2	I have a smartphone	3.50	0.57
3	I have access to reliable internet and computer devices	1.07	0.32
4	Computers and smartphones interest me all the time	3.15	0.60
5	I have taken an online course	2.08	0.50
	Weighted mean	**2.44**	**.462**

Note: N=200 (i) Maximum mean score= 4, Minimum Mean Score (1) (ii) Mean Bench Mark 2.5.

The result onTable3, shows that most of the statements are below 3.00 which depict unacceptable statements except for statement 11 and 14. The average weighted mean stood at about 2.44 which imply majority of the students are unwilling to explore the use of information communication and technology and digital learning facilities in schools.

Research Question 4: To what extent do students have confidence on digital learning?

To answer this research question, descriptive – mean and standard deviation were used and the result is presented in table 4. Below

Table 4: Mean and Standard Deviation on Students Confidence Level on Digital Learning

S/N	Statements	mean	Std.Dev
1	Taking online tests is frightening	2.40	.65
2	Studying online is relaxing and interesting	3.50	.43
3	Digital learning is complex to use or participate in	3.07	.32
4	Digital learning is not straight forward to understand	2.90	.60
5	I prefer digital learning to traditional learning	3.41	.87
	Weighted mean	**3.04**	**.57**

Note: N=200 (i) Maximum mean score= 4,
Minimum Mean Score (1) (ii) Mean Bench Mark 2.5.

The result on Table 4 shows that majority of the statements are above mean cut-off mark of 2.5. The average weighted mean stood at 3.04 high enough to conclude that there is a high student confidence in digital learning.

Test of Hypotheses

Hypothesis: Ho: There is no significant difference in students' perception of digital learning facilities based on gender of the students.

To test the hypothesis, independent t-test was used and the result is presented in the table below:

Table 5: t- analysis of difference in students' perception of digital learning

Variables	N	Mean	Standard deviation	DF	t-cal	P
Inference						
Male	112	3.14	0.94			
Female	88	2.69	0.74	197	1.45	0.15
significant						

Table 5. Indicate that there was no significant difference in perception between male and female about digital learning. t (197) = 1.46, p = .15. That is, the average performance score of males (M = 3.14, SD = 0.94) was not significantly different from that of female (M = 2.69, SD = 0.74). Consequently, the null hypothesis which states "There is no significant difference in perception of digital learning based on gender of the students was not rejected

Hypothesis Two:

Ho: There is no significant difference in adoption of digital learning facilities based on gender of students. To test the hypothesis independent t-test was used and the result is presented in the table below:

Table 6: t- analysis of difference in students' adoption of digital learning

Variables	N	Mean	Standard deviation	DF	t-cal	P
Inference						
Male	112	3.21	0.54			
Female	88	2.93	0.67	197	1.9	0.17
significant						

Table.6 indicate that there was no significant difference in perception between women and men about digital learning t (197) = 1.9, p = .17. That is, the average performance score of males (M = 3.21, SD = 0.54) was not significantly different from that of female (M = 2.93, SD = 0.67). Consequently, the null hypothesis which states "There is no significant difference in adoption of digital learning based on gender of the students was not rejected while the alternate hypothesis was rejected

Discussion of Findings

Research question one

In relation to the first research question, the results indicate that students generally have a positive attitude towards digital learning and are willing to embrace it. However, the lack of information communication and technology facilities serves as a major deterrent. It was observed that a significant number of respondents utilize smartphones for online learning, while platforms such as YouTube, Google Classroom, and Zoom are also popular choices for educational and social purposes. Furthermore, the analysis presented in Table 3 highlights that students are open to digital learning, yet the insufficient availability of information communication and technology resources hinders

their full acceptance of this mode of education. This is in line with Allen (2015), that says; the acceptance of digital learning depends on e-learning educators and facilities. This view point is further backed by Schunk & Usher (2012), who argue that learner motivation plays a crucial role in determining what, how, and when we learn.

Research question two

The result of the finding on research question two point out that majority of the students are not motivated to accept digital learning as it lacks face to face communication and interactions between the teachers and students. The participants in this study displayed lower average scores for online communication self-efficacy in comparison to the other three dimensions. While they feel comfortable using online tools to communicate and share their ideas, they tend to refrain from posting questions in online discussions. The findings of Hung et al. (2010) support the idea that students with higher online communication self-efficacy tend to feel more at ease when expressing themselves in writing. The lower average score for online communication self-efficacy in this particular study indicates that the participants may not be fully prepared for online learning. It is noteworthy that the lack of active questioning is a prevalent issue, even in traditional face-to-face learning settings at this university. Students here seldom pose questions during lectures, even when they are struggling to grasp the lesson content.

Research question three

Based on these findings, it can be inferred that the students in this study exhibit a certain level of confidence in their ability to utilize computers and the internet for online learning. Essentially, these students demonstrate a good level of proficiency in technology usage, likely due to their exposure to technology-rich environments (Jones, 2012). The abilities encompass searching for information on the internet, executing fundamental tasks on MS Excel, MS PowerPoint, and MS Word, and overseeing online educational software. These competencies are crucial for improving students' preparedness for online education

Conclusion

Based on the aforementioned findings and discussions, it is crucial to prioritize learner control in order to enhance students' preparedness for online learning and proficiency in online communication. Primarily, in terms of self-efficacy in online communication, educators should actively encourage students to express their thoughts and pose questions more frequently in online discussions. Given that secondary school students tend to be passive learners even in traditional classroom settings, teachers may consider implementing a rewards system or positive reinforcements to motivate students to engage in communication during online learning. One effective approach could be integrating the expression of opinions and posting of questions as part of ongoing assessments. This not only fosters student participation but also facilitates meaningful online discussions through responses from peers.

Recommendation

In view of the results of this study, it is recommended:

1 That administrators in Secondary school education promptly embrace and incorporate digital learning as a viable option to traditional face-to-face methods, while ensuring the provision of necessary resources and support for its successful implementation.

2 It is imperative that stakeholders, particularly teachers, are actively engaged in the development, execution, and assessment of education policies as both a duty and a privilege. By actively involving teachers, policymakers can gain valuable insights and firsthand experiences that can address fundamental issues within the education system and enhance the quality of digital learning in schools.

3 The government should demonstrate a stronger commitment to digital learning by adhering to UNESCO's suggestion of allocating 26 percent of the total annual budget to education, with a specific focus on e-learning. This allocation will facilitate the acquisition of essential educational materials and create a conducive environment for effective digital learning.

4 Expert evaluation of policies is essential to identify the most appropriate course of action. Through thorough evaluation, the strengths and weaknesses of education policies can be identified, leading to informed decisions that will ultimately benefit the policy implementation.

References

Adams, N. (2015). Bloom's taxonomy of cognitive learning objectives. Journal of the Medical Library Association, Journal of Medical Library Association.103 (3):152-153.

Akcaoglu, M. and Lee, E. (2016). Increasing social presence in online learning through small group discussions. The International Review of Research in Open and Distributed Learning. 17(3):104-111.

Alajmi, M. (2010). Faculty members' readiness for e-learning in the college of basic education in Kuwait.UNT Digital Library. Retrieved on 22, December 2020 from http://digital.library.unt.edu/ark:/67531/metadc31523/.

Borotis, S & Poulymenakou (2014). E-learning readiness component:key issues to consider before adopting e—learning interventins. In proceedings of world conference on E-learningin corporate, government, healthcare, and highereducation (PP.1622-1629)

Choucri, N., Maugis, V., Madnick, S., Siegel, M., Gillet, S., O'Donnel, S., Haghseta, F. (2023). Global e-readiness for what. Center for Business at MIT.54-60

Hodges, C., Moore, S., Lockee, B., Trust, T., and Bond, A. (2020). The difference between emergency remote teaching and online learning. Emergency Remote Learning.134-145.

Holzberger, D Philip, A, kunter, M. how teacher's self-efficacy is related to instructional quality: A longitudinal analysis

Hung, M. and Chou, L. (2010). Student readiness for online learning: Scale development and student perception. Computers and Education. 5(2):1080-1090.

Lauren (2020) passing the baton: digital literacy and sustained implementation of e learning technologies

Jing, D. (2023). Students' attitudes towards computer-assisted language learning. Behavioral Sciences.852-859.

Jones, 2012. Primary school teachers' perceptions regarding ICT usage and equipment in Kuwait. Journal of International Education Research (JIER).8(1):55-62.

Kim, B. (2008). What makes teachers use of technology in the classroom? Exploring the factors affecting facilitation of technology with a Korean sample. Computers and Education. 50(8):224-234.

Murphy,C , Mahoney, K.(2023). A study of higher education students' self-perceived digital competence for learning and everyday life online participation. Journal of documentation, 10.1108/jd-03-2023

Olatoye, R. (2011). Levels of participation in ICT training programs, computer anxiety and ICT utilization among selected professionals. International Journal of Education and Development using Information and Communication Technology .7(2):15-26.

Stephan, M., Markus, S., and Gläser-Zikuda, M. (2019). Students' achievement emotions and online learning in teacher education. Frontiers in Education. 3(1):109.

Williams,I.(2017). Understanding digital literacy for instruction and increased skills proficiency

Zafiropoulos, C. (2010). Analysis of academic staff and students' attitudes toward adoption of e-learning. Technological Education Institute of Sires Greece.43-65.

Zawacki-Richter, O., Müskens, W., Krause, U., Alturki, U., and Aldraiweesh, A. (2015).Student media usage patterns and non-traditional learning in higher education. International Review of Research in Open and Distributed Learning. 16(2):136-170