



## **IMPACT OF DIGITAL LITERACY SKILLS ON UNDERGRADUATE PERFORMANCE IN NIGERIA**

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### **ABSTRACT**

**Purpose:** The broad purpose of this study is to investigate the digital literacy skills of undergraduate Students Performing via Online Tests in Lagos State, Nigeria. The objective is to examine how online tests affect undergraduates' critical thinking skills and ability to analyse information.

**Design/Methodology/Approach:** The descriptive research design was adopted. Second-year undergraduate students were used as the population. They were those who used computers in school-based tests and examinations. Two testing instruments, aw score from the Entrepreneurship Computer-Based Test and a structured instrument QDLSCUPOT (a 4-Likert scale type of closed-ended format), were used in data generation. A multi-stage sampling process of 21 departments using a simple random sampling technique was used to select 420 participants for this work. Using a Statistical Package, data were analysed using Pearson product-moment correlation at a 0.05 significant level.

**Research Limitation:** The study is confined to a specific group of undergraduate students in Lagos State, which may limit the generalizability of the findings to other regions or institutions within Nigeria or beyond.

**Findings:** Findings show that digital literacy plays a significant and positive role in the outcome of undergraduate performance. The study concludes that the technology is less expensive, has less manpower demand, has lower anxiety levels, is stress-free in marking and scoring, and develops undergraduates' psychomotor and cognitive skills.

**Practical Implication:** Developing critical thinking skills and the ability to analyse information accurately is a function of digital literacy efficiency and should be encouraged.

**Social Implications:** The disparity in digital literacy skills can entrench existing social inequalities, marginalising students from disadvantaged backgrounds and affecting their long-term socio-economic mobility.

**Originality and Value:** This study contributed to the pool of knowledge on promoting critical thinking skills and promoting learners' analytical mindsets.

**Keywords:** *Digital. online test. performance. score. undergraduate*

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## **INTRODUCTION**

We live in an era where proficiency in technological literacy rules the world. The world has designed human activities to function in packages that can best be understood through digital literacy knowledge. With the improvement of virtual technology, university students now have access to a massive variety of online tools that may enhance their educational experience, including online studying platforms, libraries, e-books, journals, and other digital sources (Horban et al., 2024). In tertiary institutions, digital literacy is a skill that university undergraduates must possess to use universities' many digital resources (Haleem et al., 2022). The ability to maximally utilise, comprehend and transmit information using digital technologies is referred to as digital literacy.

According to Agina-Obu and Okwu (2023) they emphasised that undergraduates frequently utilise these digital tools for a range of activities which includes execution of research activities, marketing of products, analysis of data, promote effective communication and collaboration, information sourcing and interpretation, test development, testing the veracity of teaching methods on learners, promote learning online and assessment among others (Agina-Obu, & Okwu, 2023).

Due to the dynamics in today's world, it is expedient for all tertiary institutions to expose and teach undergraduates digital literacy. At the same time, also equip them with the basic and needed abilities to explore and maximise internet resources efficiently. According to Yo (2021), digital literacy is the availability of the knowledge and abilities required for pupils to use digital technologies and internet sources securely and efficiently. It consists of a vast variety of abilities and the capability to use digital tools and e-sources, to discover the internet, assess the accuracy of online data and efficiently interact via digital tools. For undergraduates to access the many digital resources offered by university platforms, digital literacy is necessary. With the improvement of virtual technology, university students now have access to a vast variety of online tools that may enhance their educational experience, this includes online learning platforms, online libraries, e-books, journals, and other digital sources.

Like university students in many other nations, Nigerian university students have become increasingly dependent on net sources for their education, research, and communication. Due to the enormous distribution of low-cost smartphones and the growth of net connectivity throughout the nation, the use of virtual sources with the aid of digital sources by university students in Nigeria has substantially expanded in recent years. Access improvement is one of the main ways digital literacy improves university students' utilisation of digital resources in Nigeria (Oseghale, 2023). Digitally literate university students can quickly discover and use virtual resources through their online search, data retrieval, and net navigational abilities. This allows them to maximise the usage of the virtual sources at their disposal. Additionally, virtual literacy encourages Nigerian university students to use virtual sources effectively. Digitally savvy university students can use online tools to prepare their educational work, collaborate with classmates, and access online resources pertinent to their field of study, amongst different methods to boost their educational.

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Additionally, students' critical thinking ability contributes to their performance. Yasdin et al. (2021) asserted that students' critical thinking abilities are positively impacted through virtual literacy. Differentiating among reliable and erroneous sources, analysing data, and deriving insightful conclusions from virtual resources permits university students to evaluate the value and applicability of virtual resources. This aids in improving critical thinking abilities, vital for success in the current digital era. Digital literacy also goes a long way in encouraging innovation and creativity in university students (Bawden & Robinson, 2020).

Students' inability to analyse information is another challenge. The inability of students to analyse information critically is another consequence of insufficient digital literacy (Martin & Grudziecki, 2006).

One should be digitally literate to evaluate the authority and dependability of online sources. Without this ability, students cannot rely on untrustworthy or biased sources, which could lead to lower-quality academic work. According to Warschauer and Matuchniak (2010), inadequate digital literacy might also result in weak research abilities.

In order to conduct effective research, one should be capable of finding, assess, and efficiently utilise virtual resources. Students who battle with these activities may conduct ineffective research and produce academic work of lesser caliber. Furthermore, lacking virtual literacy may make collaboration difficult (Sackey et al., 2023). The ability to collaborate and communicate with others using digital tools and platforms is a part of virtual literacy. Without those abilities, university students could find it tough to work effectively in groups or with their teachers, which might produce much less powerful teamwork and studying results.

Ogunji et al., (2022) argued that most tertiary institutions in Nigeria after the global pandemic that paralysed the conventional teaching and learning exercise, adopted Online platforms to assess students learning. This medium is gradually taking over the conventional process of pencil/ biro and paper process as this new method allows for less time consumption, cost effective on the part of the institution, error free, can be carried out on a large sample of students within the shortest period among others. Students with less digital literacy are bound to underperform since they lack the knowledge and skills to effectively maximise technology or navigate the digital space. In order to give university students in Nigeria the abilities to efficaciously use virtual sources for academic success, there is a need for more funding in digital literacy training. Nigeria can better prepare its personnel for achievement in a fast digitised world by strengthening the virtual literacy competencies of university students.

Since 2020 most tertiary institutions have recorded drastic fall in students' performance since the inception of Technology for assessment (Abu Talib et al., 2021). This failure culminates in padding

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students' performance after exposure to test/examination conditions using online platforms. This rise in failure has been associated with a deficiency on the part of students in effectively maximising technology due to their inability to utilise digital literacy. Most of these students are confronted with challenges of dearth in developing critical thinking skills, inability to analyse information, poor literacy knowledge and skills among others.

Failure to expose these undergraduates early enough or incorporate digital literacy in their curriculum would likely lead to underperformance and failure in online tests or assessments since test items are expected to be answered by manipulating digital programmes. In order to improve the performance of students in tertiary institutions since online assessment is trending in vogue, the researchers were out to investigate digital literacy skills as a correlate of undergraduates' performance via online Tests in Lagos State, Nigeria. The broad purpose of this study is to investigate digital literacy skills as correlated with undergraduate performance via online tests in Lagos State, Nigeria. The objectives are to determine how critical thinking skills correlate with undergraduates' performance via online tests and the relationship between digital literacy skills and undergraduates' performance via online tests.

## **LITERATURE REVIEW**

Digital literacy has become an essential skill for academic success in the 21st-century learning environment, particularly with the increasing integration of online assessments in higher education. In the Nigerian context, the rise of digital learning platforms during the COVID-19 pandemic necessitated a rapid shift from traditional methods to virtual assessments. Studies have shown that students with strong digital literacy skills are better equipped to handle online tasks such as uploading assignments, taking timed quizzes, and navigating learning management systems. Yu (2022) found a significant positive relationship between digital literacy and students' academic performance in online learning environments, emphasising that digital competence enhances students' ability to manage virtual assessments effectively.

The disparity in digital literacy among Nigerian undergraduates can be attributed mainly to infrastructural challenges and socioeconomic inequalities. Students from rural or underprivileged backgrounds often lack access to devices, stable internet, and consistent electricity, which limits their ability to develop and apply digital skills (Adepoju et al., 2023). These disparities directly affect students' performance in online assessments, where digital navigation and timely submission are crucial. Olayemi et al., (2021) observed that students with inadequate digital resources and skills tend to underperform due to their inability to effectively engage with assessment platforms, highlighting the need for targeted interventions to bridge the digital divide.

Universities in Nigeria have a critical role in building students' digital capacity. Integrating digital literacy training into academic curricula has improved student engagement and outcomes. Israel et

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al. (2024) demonstrated that students who participated in computer-based training sessions reported greater confidence and competence in completing online assessments. Furthermore, Nwachukwu and Eze (2021) recommended institutional support in the form of workshops, access to digital tools, and the development of campus-based digital learning centers as strategies to improve student performance in the digital space.

In addition to technical proficiency, digital literacy's cognitive and emotional aspects also influence online assessment performance. Ng (2012) argued that digital literacy includes thinking critically, managing information, and interacting responsibly in digital spaces.

Eze et al. (2020) supported this view, noting that students with high digital self-efficacy experience lower anxiety during online assessments and perform better academically. This suggests that digital literacy is not merely a functional skill but also a psychological enabler of success in virtual academic environments.

## **METHODOLOGY**

The researchers adopted a descriptive research design for this task. This design type allows the researchers to study a large sample of participants and draw conclusions from a carefully selected group. With a population of three thousand six hundred (3600) undergraduates of Lagos State University of Education, Ijanikin and Epe campuses, the target population was all second-year students because they have been examined for both Computer Based Test and Computing.

A multi-stage sampling process was employed to select samples for this work. The researchers first identified second-year students (200 level) at the institution. The students were categorised into seven colleges: COMSSED, COSED, COHED, COSPED, COITED, COVED, and COLCAEO. Using purposive sampling technique based on the departments with large students' size, three departments were carefully selected across the seven colleges, and 21 departments were used for the study. The researchers then introduced simple random sampling technique to select twenty (20) students each from the 21 departments identified in this study. Four hundred and twenty (420) students formed the sample size for this study. Two instruments were the students' raw score from the Entrepreneurship Computer Based Test and the researchers structured instrument, "Questionnaire on Digital Literacy Skill as Correlates of Undergraduates Performance via Online Test (QDLSCUPOT)". The questionnaire contains 20 items on the 4-Likert Scale: Strongly Agree (SA), Agreed (A), Disagree (D), and Strongly Disagree (SD), respectively. The questionnaire was validated by two academics in the Department of Entrepreneurship studies, LASUED, and the validated instruments were said to meet both content and face validity requirements. Using split-half reliability and Cronbach alpha reliability form, the -coefficients of 0.892 and 0.791 were obtained, meaning that internal consistency was met. Pearson Product Moment Correlation was used to analyse the data and hypotheses tested at 0.05 significant level.



## FINDINGS AND DISCUSSION

H0<sub>1</sub>: Critical thinking skills do not significantly correlate with undergraduates' performance on Online Test.

*Table 1: Pearson Product Moment Correlation analysis of critical thinking skills and undergraduate performance*

Variables	N	Mean	P	R-cal	Sig.	Decision
X	420	7.92				
Y	420	4.11	0.05	.729	.007	Rejected

Source: Fieldwork, (2024)

Table 1 shows that the r-calculated value of 0.729 shows a positive correlation between developing critical thinking skills and undergraduate performance via online tests. Although it further reveals that at p-value of 0.007 less than 0.05, the null hypothesis is rejected, while the alternative hypothesis states that the development of critical thinking skills significantly correlates with undergraduates' performance on online tests.

H0<sub>2</sub>: Ability to analyse information do not have any significant correlation with undergraduates' performance on Online Test

*Table 2: Pearson Product Moment Correlation analysis of ability to analyse Information and Undergraduate Performance*

Variables	N	Mean	P	r-cal	Sig	Decision
X	420	6.76				
Y	420	4.11	0.05	.814	.009	Rejected

Source: Fieldwork, (2024)

Table 2 shows that a calculated value of 0.729 shows the existence of a positively strong correlation between the ability to analyse information and undergraduates' performance via online tests. Although it further reveals that at p-value of 0.009 less than 0.05, the null hypothesis is ejected while the alternative hypothesis states that inability to analyse information do have significant correlation with undergraduates' performance in Online Test is retained.

H0<sub>3</sub>: Digital literacy skills do not have any significant correlation with undergraduates' performance via in Online Test



*Table 3: Pearson Product Moment Correlation analysis of Digital Literacy Skills and Undergraduate Performance*

<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>P</b>	<b>r-cal</b>	<b>Sig</b>	<b>Decision</b>
X	420	5.42	0.05	.885	.012	Rejected
Y	420	4.11				

*Source: Fieldwork, (2024)*

Table 3 shows that a calculated value of 0.885 shows the existence of a positively strong correlation between digital literacy skills and undergraduates' performance via online tests. Although it further reveals that at p-value of 0.012 less than 0.05, the null hypothesis is ejected while the alternative hypothesis states that digital literacy skills do have significant correlation with undergraduates' performance in Online Test is retained.

### **Discussion**

Hypothesis one reveals that developing critical thinking skills significantly correlates with undergraduates' performance in online tests. It can be interpreted that students' critical thinking ability contributes to academic performance. This was corroborated by the study of Yasdin et al. (2021) who claimed that students' critical thinking abilities are positively impacted by digital literacy and will go a long way to improve performance. By differentiating between dependable and inaccurate sources, examining data, and deriving insightful conclusions from digital resources, critical thinking abilities enable students to assess digital resources' value and applicability.

Meanwhile, hypothesis two revealed that the ability to analyse information critically correlates significantly with undergraduates' performance in online tests. Without these abilities, University students might find it difficult to work successfully as a team with teachers, which could result in less effective teamwork and knowledge gaining. The findings of this study conform to Martin and Grudziecki (2006), who claimed that students' ability to analyse information critically is another consequence of insufficient digital literacy and would ultimately affect students' performance. In order to assess the authority and dependability of online sources, one must be digitally literate to navigate through them. Without this ability, students are left with no choice than to rely on untrustworthy or biased sources, which could lead to academic work of lower quality.

Moreover, hypothesis three shows that digital literacy skills significantly correlate with undergraduates' performance via online tests. The effectiveness of digital literacy is a function of students' performance in online tests and research outcomes. The outcome of this work conforms with studies of Ogunji et al., (2022) who maintained that most tertiary institutions in Nigeria after the global pandemic that paralysed the conventional teaching and learning exercise, adopted the use of Online platforms for assessment. This medium is gradually taking over the conventional



process of pencil/ biro and paper process as this new method allows for less time consumption, cost effective on the part of the institution, error free, can be carried out on a large sample of students within the shortest period among others. Students with less digital literacy are bound to underperform since they do not have the knowledge and skills to maximise technology or navigate the digital space effectively.

### **Limitations**

The study is without limitations that need to be considered when applying the study outcome, which is important to the sample population. It should be noted that the students used were all from state-owned institutions where tertiary institution standards are strictly observed and maintained. The result of this study might not be the same if students from privately owned institutions were used or included. Related to this is the availability of appropriate infrastructures, which state-owned tertiary institutions might provide.

### **CONCLUSION**

This study has successfully established that to advance our educational system, especially our tertiary institutions, there is a need to diversify testing modes, such as the conventional pencil and pen modes. From this work the researchers concluded that development of critical thinking skills is a contributory determinant of undergraduates performance in Online Test; Undergraduates inability to analyse information independently goes a long way to affect undergraduates' performance in Online Test; Digital literacy skills does determine undergraduates performance via in Online Test; Tertiary institutions should develop template and encourage teaching of digital literacy skills because testing of students through technology is less expensive, less manpower demand, lessen anxiety level and stressful, error free in marking and scoring, develop undergraduates psychomotor and cognitive skills among others.

Integrating digital skills into undergraduate education increases employability, reduces graduate unemployment, and enhances Nigeria's human capital development. Conversely, the lack of these skills may widen the youth unemployment gap.

The disparity in digital literacy skills can entrench existing social inequalities, marginalising students from disadvantaged backgrounds and affecting their long-term socio-economic mobility. A digitally literate student population is better equipped to contribute meaningfully to democracy, governance, and community development in Nigeria.

### **Recommendations**

For university students in Nigeria to effectively utilise digital resources for academic and personal use, they must possess digital literacy abilities. The study among others recommended the followings based on the outcome of this work:

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- Provide access to functional digital resource centre
- Maximise use of ICT in the conduct of examination
- Integrate digital literacy into the curriculum
- Foster culture of innovation and sharing

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