ASSESSMENT OF DIGITAL LITERACY SKILLS ON UNDERGRADUATES PERFORMANCE IN TERTIARY INSTITUTIONS: IMPLICATION TO EDUCATION SECTOR

[1]Dr. (Mrs) AREMU, V. I. & [2]UDOFIA, I. G.
[1]Department of Educational Technology,
College of Informational and Technology Education
Lagos State University of Education, Lagos
[2]Department of Counselling Psychology,
College of Specialised and Counselling Psychology
Lagos State University of Education, Lagos
udofiamofe19@gmail.com

Abstract
Three research hypotheses was formulated to guide the focus of this work as researcher adopted descriptive survey research design. Undergraduates from Lagos State University of Education, Lagos, formed population of the study while simple random sampling technique was adopted to select 100 participants from each of the three colleges in Ijanikin campus. A sample size of 300 undergraduates participated in this study as closed ended structured instrument titled, Assessment of Digital Literacy Skills among Undergraduates in Tertiary Institution Questionnaire (ADLSUTIQ) that contains 20 items on 4-Likert scale type was used to generate data. Student scores in School based examination conducted in Educational Technology, Philosophy of Education and Entrepreneurship were used to measure academic performance. Construct validity was affirmed use of Split-half form of reliability for the Questionnaire, r-coefficient value of 0.873 was obtained, while Cronbach alpha was used for the achievement test as r-coefficients values of 0.897, 0.791 and 0.805 was obtained. Correlation analysis was used to analyse the data and tested at 0.05 significant level. The result reveals development of confidence in students, critical thinking and enhancement of effective communication relate with academic performance. The study concluded that undergraduates must motivate themselves and develop in digital literacy skills.
Keywords: Assessment, Digital Literacy, Undergraduates, Academic Performance, Scores

Introduction

Digital literacy is must be techy for the 21st century teacher and student alike. It is a term used to buttress skills and knowledge gotten from persistent interaction with technology. The new roles that students must assume in society demand training in digital competencies includes technological and pedagogical updating. This implies effectively integrating technologies in their usual activities, such as teaching, research, linking with society and management and administration, as well as in their personal lives, involvement in research activities, communication and enhancement of critical thinking in order to support the development of digital skills in students for their life and future work (UNESCO, 2022).

In this 21st century, people need competencies and skills that would enable them solve problems, construct arguments, make decisions and communicate them in a critical, creative, flexible and ethical manner through technology and media (Ferrari, 2012; Rodríguez et al., 2016; Morduchowicz, 2021). The whole concept of digital literacy focuses on analyzing how the information housed in virtual

spaces is used in specific situations and contexts to achieve explicit educational purposes (Shafirova, 2018); Therefore, more than a set of skills to know how to communicate and obtain information through electronic tools, this type of literacy is a social practice that has different meanings depending on the environment in which the person is working (George and Avello-Martínez, 2021).

Before the Covid-19 pandemic most tertiary institutions hardly boast of 10% IT compliance level but since the advent of the global pandemic, most institutions have gradually built their IT base since the outbreak forced them to go back and draw a workable plan to continue effective teaching and learning should any future outbreak resurfaces. Suprisingly most institutions have not only seen the use of technology as a medium for teaching/learning, rather it is now used to examine students performance. As against the usual pencil and biro mode, students are been conditioned to partake in school based examinations. Students who aren't versatile in the use of technology would certainly have low digital literacy skill.

Academic performance indicates the extent to which a student has achieved learning goals. Academic performance also refers to completion of educational benchmarks such as a degree. Achievement performance is often measured through examination or continuous assessment. It can also be defined as the extent to which a student or institution has achieved short or long term educational goals. Performance may be measured through students' grade point, whereas for institutions, performance may be measured through graduation rates. Ubanga (2013) defined academic performance as the scores generated from a testing condition. To him performance is a function of cognitive functioning. Scores generated from a test gives the real acquisition level of an individual learner. Students in a testing condition tend to regurgitate a certain quantity of information when exposed to test; Meanwhile Oguniyi (2018) sees academic performance as the generic performance of testees towards a cognitive tool. Oguniyi stated that cognitive tools like test, continuous assessment, raw scores are all designed to determine the extent to which certain content are been mastered by the learners.

The performance of students can better be improved in this 21st century dispensation if students learn how to maximise digital literacy skills in teaching and learning conditions as most organisations now depend largely on the feedback gotten from students' interaction with technology. For Morduchowicz (2021), training in digital competencies involves strengthening critical and creative thinking to understand how the digital environment works and to address the challenges posed by the use of the Internet. These challenges allow us to explore the meaning of privacy, identity and digital footprint; to analyze, evaluate and select information circulating on the Internet, to recognize its trustworthiness and relevance; to understand how algorithms work and how they impact daily life; to communicate in the online universe, connect and collaborate with others, interact in virtual communities and networks; to create content making efficient and empathetic use of digital language; to use the Internet for participation and problem solving.

Aznar, et al. (2019) stated that students' exposure to digital literacy is immeasurable as such students along the line develop self confidence both in usage and ability to manipulate the technology. Persistent use of technology by students either in a formal or informal setting gradually develops in such a student a high degree of confidence to manipulate ICT; Morduchowicz (2021) identified fluency in communication as another positive that helps undergraduates who frequently use technology. Due to their frequent interaction, they have been able to build self confidence and strong communication ability to express themselves with ease especially with the use of ICT; Again critical thinking skills is another positive associated with the use of Technology. No doubt, digital literacy provides for critical thinkers the act of thinking fast and being rational to events and circumstances. Hargittai (2016) maintained that critical thinking abilities are positively impacted through digital

literacy and this will further help improve performance of students.

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Statement of the problem

After the global pandemic of 2020 most tertiary institutions have recorded drastic fall in the academic performance of students especially during assessment. This rise in failure culminates to padding of students' performance after exposure to test/examination conditions using ICT platforms. The rise in failure rate has been associated with deficiency on the part of students to effectively maximize technology due to their poor digital literacy education. Most undergraduates are confronted with challenges of developing critical thinking skills, inability to analyse information, poor literacy knowledge and skills, inability to communicate effectively using ICT among others. Failure of exposure and incorporation of digital education skills in curriculum would likely lead to more underperformance and resultant failure of students in school based examination /Test since test items are expected to be answered through the manipulation of digital programmes. In order to improve on the performance of students in tertiary institutions, researchers carried out a study on the assessment of digital literacy skills on undergraduates' performance in Tertiary Institutions, Lagos State.

Objectives of the study

The researchers identified the following as the objectives of this study:

Ascertain if development of confidence in students have any relationship with academic performance of undergraduates.

Justify how communication ability relate to academic performance of undergraduates.

Determine how critical thinking in students relates to academic performance of undergraduates.

Research Hypotheses

H01: Confidence in learners does not significantly relate to academic performance of undergraduate in tertiary institution.

H02: Communication ability does not significantly relate to academic performance of undergraduate in tertiary institution.

H03: Critical thinking in learners does not significant relate to academic performance of undergraduates in tertiary institution.

Significance of the Study

The outcome of this work will be of immense benefits to those in academics, students, test developers and researchers.

Academics would also find this study useful as it will prompt them to encourage their colleagues and contemporaries to register for digital literacy programme so as to update their level of IT skills in the use of technology during teaching.

For students the outcome of this work will expose them to the need to acquire digital literacy skills because it will assist them in coping with IT proficiency especially during technology use in testing conditions.

For test constructors/ developers the outcome of this work would be useful to them in identifying appropriate time suitable for the test.

For researchers the outcome of this work will aid to update relevant literatures and promote contemporary studies through model formulation and theories.

Methodology

This study used descriptive survey research design as the design type allows for vivid study of participants and calibration of views based on the outcome of the participants. Undergraduates from Lagos State University of Education, Ijanikin, Lagos formed the population of the study as simple random sampling technique was adopted to select 100 participants from each of the three colleges in Ijanikin campus. A total of 300 undergraduates were selected across the three colleges to form sample size for the study. A closed ended structured instrument Questionnaire titled, Assessment of Digital Literacy Skills among Undergraduates in Tertiary Institution, Lagos State. This instrument contains 20 items on 4-Likert scale type of Very True (VT), True (T), Not True (NT) and Not Very True (NVT). Nominal scores of students in Educational Technology, Philosophy of education and entrepreneurship were used to measure their performance. The instrument was validated by three academics in the department of educational technology, in same university. After modification and removal of unwanted items, the instrument was acclaimed to meet construct validity. Split-half form of reliability was used on a sample of 40 undergraduates from Lagos State University, Ojo not captured for this study. The instrument for performance (Teacher Structured Examination Items) was validated by team of examiners (Professors, Course co-ordinators and Senior lecturers in those subject areas) across the various Colleges of the institution. A reliability index of 0.873 was obtained, while Cronbach alpha was used for the achievement test and 0.897, 0.791 and 0.805 was obtained meaning internal consistency met. Data from questionnaire were transformed using Z-score and T-score in order to ensure normality for analysis. Linear regression analysis was used to analyse the data and tested at significant level of 0.05 respectively.

Results

H01: Confidence in learners does not significantly relate to academic performance of undergraduate in tertiary institution

Table 1: Pearson Product Moment Correlation between confidence in learners and academic performance

	N	Mean	Df	P-val.	(r)Cal.	Sig.	Remark
X	300	2.67					
			298	0.05	0.794	0.009	Rejected
Y	300	4.39					

Source: Research study, 2024

From table 1 above, (r) calculated value is 0.794 which shows positively strong correlation between the independent and dependent variable. However at p-value (0.05) > sig. value of 0.009, it depicts significant hence the null hypothesis is rejected and alternative retained.

H02: Communication ability does not significantly relate to academic performance of undergraduate in tertiary institution.

Table 2: Pearson Product Moment Correlation between communication ability and academic performance

	N	Mean	Df	P-val.	(r)Cal.	Sig.	Remark
X	300	2.81					
			298	0.05	0.894	0.021	Rejected
Y	300	4.39					

Source: Research study, 2024

From table 2 above, (r) calculated value is 0.894 which shows positively strong correlation between the independent and dependent variable. However at p-value (0.05) > sig. value of 0.021, it depicts significant hence the null hypothesis is rejected and alternative retained.

H03: Critical thinking in learners does not significant relate to academic performance of undergraduates in tertiary institution.

Table 3: Pearson Product Moment Correlation between critical thinking in students and academic performance

	N	Mean	Df	P-val.	(r)Cal.	Sig.	Remark
X	300	3.67					
			298	0.05	0.804	0.032	Rejected
Y	300	4.39					

Source: Research study, 2024

From table 3 above, (r) calculated value is 0.804 which shows positively strong correlation between the independent and dependent variable. However at p-value (0.05) > sig. value of 0.032, it depicts significance hence the null hypothesis is rejected and alternative which states that critical thinking in students does significantly relate to academic performance of undergraduates is retained.

Discussion of Findings

From hypothesis one, the result shows that confidence in learners does significantly relate to academic performance of undergraduate especially in tertiary institutions. This outcome corroborated the study of Aznar, et al. (2019) who affirmed that students who are exposure to digital literacy are probe to develop a confidence in both usage and ability to manipulate technology. Persistent use of technology by students either in a formal or informal setting gradually develops in such a student a high degree of confidence to manipulate ICT. Aznar, et al. (2019) further affirmed that students who are conditioned to respond to test items using technology will naturally do well because they have been previously exposed to the use of technology so are likely to show dexterity in the use.

From hypothesis two, the result shows that communication ability in learners does significantly relate to academic performance of undergraduate especially in tertiary institutions. This outcome corroborated the study of Morduchowicz (2021) who affirmed that students who learners who show expertise in the use of technology always communicate better with other end users of such package. Students who continuously utilise technology either to buy, sell and surf for materials using online platforms are most likely to communicate more than students who don't. Due to their frequency in the use of this technology they can better communicate with fellos students, teachers, examiners and

also express themselves in a more refined and modest manner. Of a truth, students who are face with the use of ICT tend to communicate better and faster especially during examination period thereby improving their performance level in schools.

From hypothesis three, the result shows that critical thinking in learners does significantly relate to academic performance of undergraduate especially in tertiary institutions. This outcome corroborated the study of Hargittai (2016) who stated that students' who possess critical thinking abilities are positively impacted by digital literacy and this will help to improve performance their academic performance. Hargittai emphasised that students who frequently use technology and manipulate technology are likely to develop critical thinking skills which is a function of digital literacy. In most tertiary institutions in Lagos state, examination is conducted using Technology and students who are used to technology usage are most likely to provide positively to the questions because they develop critical thinking skills to read wide and ahead of the examination.

Conclusion

From the outcome of this study, the researcher concludes that undergraduates must motivate themselves to develop in digital literacy skills; engage more in the use of technology since it helps build effective communication skills. Also, digital literacy encourages students' independence especially as it relates to surfing for contents and materials needed to facilitate better performance.

Recommendations

The study recommended among others the following:

1. Institutions ICT centres must be open for students to access periodically in other to develop digital skills.

2. Classroom must be equipped with teaching-learning gadgets that will encourage students teachers interaction

3. Adequate time should be given so that students can respond to questions with ease

Students should be encouraged to prepare, present and submit their assignments using ICT

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