IMPACT OF DIGITAL LITERACY SKILLS ON STUDENTS' ENGAGEMENT AND ACADEMIC PERFORMANCE IN SENIOR SECONDARY SCHOOL S IN CHIKUN LOCAL GOVERNMENT, KADUNA STATE, NIGERIA

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Abstract
*This study investigated the influence of digital literacy skills on students' engagement and academic performance among senior secondary school students in Chikun Local Government of Kaduna State. The purpose of the study was to investigate how digital literacy skills impact student's engagement and academic performance in Chikun Local Government. 272 senior secondary school students were randomly selected out of 10 public secondary schools in Chikun Local Government, 148 of which were male and 124 female students. Two, research questions with their correspondent hypotheses Guided the study i.e what is the relationship between digital literacy, students' engagement, and academic performance in senior secondary school students in Chikun Local Government of Kaduna State? there is no significant relationship between digital literacy skills, students' engagement, and academic performance in senior secondary school students in Chikun Local Government of Kaduna State. Data collection utilized the "Digital Literacy Skills and Student Engagement Questionnaire (DLSSEQ) and Academic performance data were gathered from students' GPA records. Pearson Product Moment Correlation was used to test the hypothesis at a significance level of 0.05. The findings indicated that digital literacy skills significantly influence both students' engagement ($p = 0.01$, $r = 0.323$) and academic performance ($p = 0.04$, $r = 0.622$**). Consequently, the study concluded that digital literacy skills have a substantial impact on student engagement and academic performance in senior secondary school students in Chikun Local Government, Kaduna State. Based on these results, recommendations included increasing the availability of computers, tablets, e-textbooks, educational apps, and online resources in classrooms to enhance students' digital skills. Furthermore, it emphasized the necessity for government and school administrators to develop reliable methods for assessing students' digital literacy skills, including appropriate metrics and assessment tools for evaluating digital competencies.*

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Introduction

In recent years, secondary schools have been increasingly integrating digital technologies into the learning environment. This includes the use of computers, tablets, e-textbooks, educational apps, and online resources in classrooms. Educators are adapting their teaching methods to incorporate technology. This includes blended learning models, flipped classrooms, and the use of online learning management systems. The extent to which students are digitally literate can affect their ability to thrive in these new learning environments (Maris & Sari, 2022).

Digital literacy is recognized as a crucial 21st-century skill that students need to succeed academically and in their future careers. It encompasses not only the ability to use digital tools but also to critically evaluate information, communicate effectively online, and engage in digital problem-solving.

Sari (2019) asserted that the impact of digital technology has direct consequences for the future of education adults. Digital learning technology continues to grow so that it affects efforts in education in the context of formal, informal, and non-formal.

Literacy is a person's ability to understand, use and contemplate written text, achieve one's goals, and develop knowledge and potential, to participate in a community (Sari & Wardhani, 2020). Digital literacy is the ability to receive and use knowledge to create and share knowledge and agree with the knowledge made by others (Sari, 2019). Literacy knowledge is related to acquiring information that will form knowledge developed through literacy in reading and writing (Sari, 2020).

Secondary schools typically have diverse student populations with varying levels of access to technology and digital literacy skills. This diversity can impact how students engage with digital tools and how it influences their academic performance. Student engagement remains a critical factor in secondary education. Engaged students are more likely to participate actively in class, complete assignments, and perform well academically. Digital literacy skills can influence how students engage with digital learning materials and resources (Dien & Nguyen, 2022)

As secondary schools increasingly integrate digital tools into their teaching methods, it is essential to evaluate the effectiveness of these approaches. Questions arise about whether certain pedagogical methods that rely heavily on technology are conducive to student engagement and whether they positively or negatively influence academic performance. While technology can enhance engagement, it can also introduce distractions that may hinder learning. The problem of balancing engagement and managing digital distractions in the classroom environment is of particular concern (Mirza, 2020)

In reviewing relevant literatures, Hatlevik and Christophersen, (2013) have examined the relationship between students' digital literacy skills and their academic performance. Their findings suggest a positive correlation between digital literacy skills and student engagement and academic performance. Similarly, Ardhiani, Hadjam, and Fitriani (2023) concluded after their study on digital literacy and student academic performance in universities: a meta-analysis that digital literacy has a positive and significant correlation to student academic performance at the moderate level with a 95% CI.

Tondeur et al., 2017) concluded in their study that digital literacy competencies, such as information literacy, affect academic success. Similarly, Maris and Sari (2022) investigated the relationship between digital lliteracy and academic pperformance of sstudent's' self-directed learning readiness. Their result revealed a significant relationship with digital literacy and academic performance in Indonesia. In a study conducted by Dien and Nguyen (2022) on Digital Literacy and Study Performance: The Case of Students in Ho Chi Minh City. They concluded that the better literacy the higher GPA that students obtain.

Looking at the digital skill and academic performance in tertiary institution, Patrick (2024) investigated the relationship between digital literacy and academic achievement among students who participate in an online course on anatomy and physiology. He also evaluated how different aspects of digital literacy, such as age and previous education in natural science, affect students' grades. He concluded that some aspects of digital literacy are more crucial for academic success in the online course. Students with a natural science background exhibited higher levels of digital literacy, emphasizing the importance of considering previous education in supporting students' digital skills in online courses.

The rapid integration of digital technologies into the educational landscape has fundamentally transformed the way teaching and learning processes are conducted. As senior secondary schools increasingly adopt digital tools and resources, the demand for students to possess adequate digital literacy skills has become more pronounced. Digital literacy encompasses a range of competencies, including the ability to effectively use digital devices, navigate the internet, evaluate online information, and create digital content. These skills are essential for students to fully engage with digital learning platforms, participate in online collaborative projects, and access a vast array of educational resources.

Recognizing the global trend, Nigeria has launched several initiatives to integrate ICT into education. The Nigerian government and private sector have invested in ICT infrastructure and training programs to enhance digital literacy among students and teachers. Organizations such as the National Information Technology Development Agency (NITDA) and the Nigerian Communications Commission (NCC) have worked to increase ICT penetration and digital literacy in schools (Hobbs, 2017).

Despite these efforts, disparities in access to digital resources persist. These issues include limited access to digital devices and the internet, inadequate teacher training, and resistance to transitioning from traditional teaching methods (Diepiribo, 2024). In Chikun Local Government, these challenges may be more significant due to infrastructural limitations and socio-economic factors. However, the impact of digital literacy on student engagement and academic performance in senior secondary schools in this area remains underexplored. This study aims to address this gap by examining how digital literacy skills impact students' engagement and academic performance in senior secondary schools in Chikun Local Government, Kaduna State, Nigeria.

Objectives of the Study

The objectives of the study were to determine:

i. the relationship between digital literacy skills and students' engagement among senior secondary school students in Chikun Local Government of Kaduna State
ii. the relationship between digital literacy skills and academic performance among senior secondary school students in Chikun Local Government of Kaduna State

Research Questions

The following research questions guided the study:

i. what is the relationship between digital literacy skills and students' engagement among senior secondary school students in Chikun Local Government of Kaduna State?

ii. what is the relationship between digital literacy skills and academic performance among senior secondary school students in Chikun Local Government of Kaduna State?

Hypotheses

The study tested the following null hypotheses:

i. $H0_1$: there is no significant relationship between digital literacy skills and students' engagement among senior secondary school students in Chikun Local Government of Kaduna State
ii. Ho_2: there is no significant relationship between digital literacy skills and academic performance among senior secondary school students in Chikun Local Government of Kaduna State

Methodology

This study utilized a survey method. A total of 272 students were randomly selected from 10 public secondary schools in Chikun Local Government, consisting of 148 male and 124 female students. Data was collected using an adapted called the "Digital Literacy Skills and Student Engagement Questionnaire (DLSSEQ)." The DLSSEQ is divided into three sections: A, B, and C. Section A gathered demographic information about the respondents, while Sections B and C measured the variables of internet literacy and communication skills, respectively. Sections B and C used a four-point rating scale where respondents indicated their responses as "Very High Extent (VHE)," "High Extent (HE)," "Low Extent (LE)," or "Very Low Extent (VLE)," rated as 4, 3, 2, and 1, respectively. Academic data were obtained from students' GPA records. The Pearson Product Moment Correlation was employed to test the hypothesis at a 0.05 level of significance to determine the relationship between students' digital literacy skills, engagement, and academic success among senior secondary school students in Chikun Local Government, Kaduna State.

Result

Hypothesis One: there is no significant relationship between digital literacy skills and students' engagement among senior secondary school students in Chikun Local Government of Kaduna State

Table 1: Pearson Product Moment Correlation statistics on relationship digital literacy skills and students' engagement among senior secondary school students in Chikun Local Government of Kaduna State

Variables	N	Mean	SD	r**	P
Digital Literacy skill	272	51.28	14.86	0.323	0.01
Students Engagement	272	58.63	13.86		

Correlation is at 0.05 level of significance

The findings from the table 1 revealed that the calculated p value of 0.01 is lower than the 0.05 alpha level of significance at a correlation index r level of 0.323**. This means that there is

a correlation between digital literacy skills and students' engagement among senior secondary school students in Chikun Local Government of Kaduna State. Therefore, the Null Hypothesis which states that there is no significant relationship between digital literacy skills and students' engagement among senior secondary school students in Chikun Local Government of Kaduna State was rejected

Hypothesis Two: there is no significant relationship between digital literacy skills and academic performance among senior secondary school students in Chikun Local Government of Kaduna State

Table 1: Pearson Product Moment Correlation statistics on relationship digital literacy skills and academic performance among senior secondary school students in Chikun Local Government of Kaduna State

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Variables	N	Mean	SD	R**	P
Digital Literacy skill	272	55.11	12.86	0.622	0.004
Academic performance	272	51.63	10.86		

Correlation is at 0.05 level of significance

The findings from the table 1 revealed that the calculated p value of 0.004 is lower than the 0.05 alpha level of significance at a correlation index r level of 0.622**. This means that there is a correlation between digital literacy skills and academic performance among senior secondary school students in Chikun Local Government of Kaduna State. Therefore, the Null Hypothesis which states that there is no significant relationship between digital literacy skills and academic performance among senior secondary school students in Chikun Local Government of Kaduna State was rejected

Discussion

This study investigated the impact of digital literacy skills on students' engagement and academic performance in senior secondary school students in Chikun Local Government of Kaduna State. The objective of the study was to determine the relationship between digital literacy skills and students' engagement and to determine the relationship between digital literacy skills and academic performance among senior secondary school students in Chikun Local Government of Kaduna State. Two null hypotheses were formulated to guide the study. The first hypothesis state that there is no significant relationship between digital literacy skills and students' engagement among senior secondary school students in Chikun Local Government of Kaduna State

However, the study revealed that digital literacy skills have significant impact on student engagement. P value was 0.01 and the correlation index r was 0.323 at 0.05 level of significant. This hypothesis was however rejected. This study corresponds with the study of Hatlevik and Christophersen, (2013) who examined the relationship between students' digital literacy skills and their academic performance. Their findings suggested a

positive correlation between digital literacy skills and student engagement and academic performance. Student engagement remains a critical factor in secondary education. Engaged students are more likely to participate actively in class, complete assignments, and perform well academically. Digital literacy skills have impact on how students engage with digital learning materials and resources (Dien & Nguyen, 2022)

The second hypothesis also states that there is no significant relationship between digital literacy skills and academic performance among senior secondary school students in Chikun Local Government of Kaduna State. The result revealed that digital literacy skills have a significant impact on academic performance among senior secondary school students in Chikun Local Government of Kaduna State because the calculated p value of 0.04 is lower than the 0.05 alpha level of significance at a correlation index r level of 0.622**. This hypothesis was also rejected.

This result agrees with the findings of Maris and Sari (2022) who investigated the relationship between digital literacy and academic performance of student's' self-directed learning readiness. Their result revealed a significant relationship with digital literacy and academic performance in Indonesia. Furthermore, Dien and Nguyen (2022) also asserted that the better the digital literacy skill, the higher GPA that students obtain.

Conclusion

The study concluded that there is a significant relationship between digital literacy skills, students' engagement, and academic performance among senior secondary school students in Chikun Local Government of Kaduna State.

Recommendations

Based on the findings of the study, it was recommended among others that more computers, tablets, e-textbooks, educational apps, and online resources should be made available in classrooms to increase student digital skills.

There is a need for government and school administrators to develop reliable methods for assessing students' digital literacy skills, identifying appropriate metrics and assessment tools to gauge students' digital competencies.

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