EXTENT OF DIGITAL LITERACY SKILLS AMONG STUDENTS IN SELECTED PUBLIC SECONDARY SCHOOLS IN MORO LOCAL GOVERNMENT AREA, KWARA STATE, NIGERIA

[1]Afolayan Oluyinka Titilope, Ph.D & [2]Abdulkadir Taofiq Oluwaseyi

[1&2]Department of Information Technology, University of Ilorin, Kwara State, Nigeria
afolayanoluyinka@yahoo.com; abdtaofiq@gmail.com

Abstract

Acquisition of digital skills is increasingly becoming essential in this 21st century. In view of this, this study assessed the extent of digital literacy skills among selected public secondary school students in Moro Local Government Area, Kwara State, Nigeria. A descriptive survey design was adopted for this study using a structured and validated questionnaire to elicit responses from the respondents in the survey area. A total of 200 students served as the sample size for this study. A stratified sampling technique was used to select three public secondary schools in the survey area. Findings revealed a moderately high level of digital literacy skills among students in the selected public secondary schools. It also showed a moderate level of awareness and availability of common digital tools such as Microsoft Word, Microsoft Power Point, and Email Messaging among others; while there existed a low level of awareness and availability of advanced digital tools such as Canvas, Kahoot, and Scratch respectively. However, students in the selected public schools reported a moderate level of challenges in the acquisition of digital literacy skills, such as inadequately equipped computer laboratories, inadequate electricity supply, connectivity, and network problems among others. In conclusion, this study has shown that students in the selected public secondary schools have embraced basic digital literacy skills and tools considerably. However, there are impending challenges in accessing and using these tools. It is therefore recommended that management of public secondary schools should continually upgrade their curriculum to reflect global best practices across schools and to ensure students are properly trained to utilize digital tools as they evolve.

Keywords: Digital literacy skills, Digital tools, Public secondary schools, Awareness, Availability, Accessibility, Challenges

Introduction

In today's rapidly evolving digital landscape, the acquisition of digital literacy skills is becoming increasingly crucial. The ubiquity of digital technologies has transformed the way information is accessed, communicated, and consumed across several channels ranging from social media platforms, online databases, and the internet among others (Haleem, Javaid, Qadri, & Suman, 2022). Despite these transformations, the role of digital literacy skills and awareness

cannot be overemphasized due to its importance in enabling students, most especially in secondary schools to navigate and cope effectively with the ever-changing digital landscape. Digital Literacy (DL) is no longer a luxury, but a fundamental right that drives a nation's progress and well-being (Okafor, 2023).

DL has been defined from diverse perspectives by researchers, although, these definitions are similar in some ways as they pinpoint who a digitally literate person is. It has been defined as the ability to effectively navigate, evaluate, and create digital content, as well as to critically engage with digital technologies for communication, collaboration, and problem-solving (Rashid, 2024). It is the set of competencies, skills, and behaviors required for full participation in a knowledge-based society; and for the effective use of digital tools such as smartphones, tablets, laptops, and desktops among others (Wagbara, 2022).

Digital literacy skills have been grouped into different categories by researchers. For instance, Van Laar, Van Deursen and de Haan (2017) classified digital skills into seven core categories: technical skills, information management skills, communication skills, collaboration skills, creativity skills, critical thinking skills, and problem-solving skills. In the same vein, Brown (2022) also identified six categories of digital literacy skills that are essential for anyone to be relevant in this digital age. These include: using a computer, navigating the internet, staying safe online, communicating online, creating and editing online content, and paying for products and services online. These skills are equally essential for secondary school students in navigating, searching, evaluating digital content, and interacting effectively within a digital workspace.

In this 21st century, digital literacy has now become increasingly relevant due to the plethora of digital tools in any learning environment. For instance, Hague and Payton (2016) viewed digital literacy as a key skill in enabling people to become autonomous, lifelong learners, capable of navigating several media with little or no assistance. Digital literacy also holds immense significance and importance in preparing students for future success in the digital age (Lefever, Dalrymple & Schweitzer, 2017). Quite a number of studies in the literature have identified the importance of digital literacy skills among secondary school students such as access to information, career opportunities, creativity and innovation, and digital equity among others below: (Rashid, 2024; Soufghalem, 2024; University of the Potomac, 2022)

However, in a developing country like Nigeria, past studies have shown that many secondary school students lack adequate proficiency in digital literacy tools, perhaps due to low access to technology, shortage of trained teachers, curriculum limitations, unavailability of technological tools, lack of training resources and low digital awareness among others (Okafor, 2023; European Commission, 2018; Livingstone & Sefton Green, 2016; Ribble, 2015). Also, there is a likely disparity in the level of digital literacy skills among students in private and public secondary schools; and this can be attributed to factors such as accessibility problems, inadequate resources, and funding problems among others (Abubarkar and Jamilu, 2024; Okafor, 2023). Given these challenges, there is an urgent need to understand the current state of digital

literacy skills and the extent of use of digital tools among public secondary school students in Moro Local Government Area, Kwara State, Nigeria.

Statement of the Problem

Undoubtedly, unequal access to technology has created a gap in educational institutions, particularly in public secondary schools where students are not adequately prepared to navigate the digital landscape (Orie, 2017). This digital divide across secondary schools, especially public schools, has widened the inequality gap in digital literacy skills and awareness among secondary schools. This has led to the dichotomy of digital “haves” and “have nots" among these students. For instance, students in private schools are more digitally literate due to regular access to high-speed internet, digital devices, and technology-rich learning environments, than those in public schools due to barriers such as limited access to technology, inadequate digital infrastructure, and socio-economic constraints (Davidson & Ezeh, 2023). Aside this, they also lack the necessary training, resources, and financial support to effectively integrate digital literacy into their curriculum and teaching practices. (Okafor, 2023). Therefore, the rapid pace of technological innovation presents challenges for most public secondary schools, thereby not allowing them to keep pace with evolving digital literacy demands.

In view of the above, this study investigated digital literacy skills and tools among students in selected public secondary schools, Moro Local Government Area of Kwara State, Nigeria.

Research Objectives

The **study was guided by the following** objectives:

- To determine the extent of digital literacy skills among students in the selected public secondary schools in the Moro Local Government Area, Kwara State, Nigeria;
- To find out the level of awareness of digital tools in the selected public secondary schools in Moro Local Government Area, Kwara State, Nigeria;
- To find out the level of accessibility to digital tools in the selected public secondary schools in the Moro Local Government Area, Kwara State, Nigeria;
- To determine the extent of availability of digital tools in the selected public secondary schools in the Moro Local Government Area, Kwara Sate, Nigeria;
- To identify the challenges faced in the use of digital tools among the selected public secondary schools in the Moro Local Government Area, Kwara State, Nigeria.

Literature Review

Types of Digital Literacy Skills

Digital literacy skills are interconnected and essential for secondary school students to navigate the complexities of the digital world effectively. By developing these skills and competencies, students can effectively navigate digital environments, critically evaluate digital information, communicate and collaborate online, and contribute positively to digital communities and societies (Thelma, Sain, Shogbesan, Phiri & Akpan, 2024). Although diverse

categories of digital literacy skills have been pointed out in the literature, a digitally literate person must imbibe these sets of skills to be able to function effectively in a digitized society. Eight digital literacy skills have been identified by researchers as essentially important to empower secondary school students to thrive in a technologically driven environment as listed below: (Johnson, & Smith, 2020; Davis, 2019; Hobbs, 2017; Leu, Kinzer, Coiro, Castek & Henry, 2017).

i. Basic Computer Skill: Basic computer skill is the ability that people need to use a computer system and its various applications. This is an essential skill that secondary school students need to use a computerized system and its basic applications.

ii. Information Literacy: Information literacy involves the ability to locate, evaluate, and effectively use information from digital sources. This skill is crucial for discerning credible sources amidst the vast amount of information available online.

iii. Media Literacy: Media literacy is the ability to critically analyze and interpret media messages, including those encountered online. This skill helps students to navigate through the complexities of digital media and understand its impact on society.

iv. Technical Proficiency: Technical proficiency involves basic competency in using digital devices, software applications, and online platforms. This includes skills such as operating computers and mobile devices, using productivity software like word processors and spreadsheets, and navigating web browsers and online platforms. Technical proficiency is fundamental to developing other digital literacy skills and is essential for participation in the digital economy and society.

v. Critical Thinking: Critical thinking involves the ability to analyze, synthesize, and evaluate information critically. This skill is crucial for discerning biased or misleading content and making informed decisions.

vi. Digital Communication: Digital communication skills encompass the ability to effectively communicate using digital platforms such as email, social media, and video conferencing. This skill is essential for collaboration and networking in both personal and professional settings.

vii. Cybersecurity Awareness: Cybersecurity awareness involves understanding the importance of protecting personal information and devices from online threats. This skill is increasingly important in a digital landscape where cyber-attacks are prevalent.

viii. Digital Citizenship: Digital citizenship refers to the responsible and ethical use of digital technologies. This includes respecting intellectual property rights, practicing online etiquette, and contributing positively to digital communities.

These highlighted skills are necessary for the 21st-century workforce, most essentially for students in preparing them ahead of the employment market immediately after they leave school.

Challenges Faced by Public Secondary Schools in the Acquisition of Digital Literacy Skills

Researchers in the literature have pinpointed that public secondary schools often face numerous challenges in the course of their students acquiring digital literacy skills as briefly discussed below: (Abubarkar & Jamilu, 2024; Davidson & Ezeh, 2023; Ribble, 2015).

5. **Unequal Access to Technology:** One of the primary challenges is the unequal access to technology among students. Many public secondary schools, especially in low-income areas, lack adequate infrastructure, such as computers, tablets, and high-speed internet connectivity. This digital divide exacerbates disparities in digital literacy skills, as students from disadvantaged backgrounds may have limited opportunities to gain hands-on experience with digital tools and platforms (Abubarkar & Jamilu, 2024).

ii. Limited Resources and Funding: Public secondary schools often face budget constraints and limited resources, making it difficult to invest in technology infrastructure, professional development for teachers, and digital literacy programs. Without sufficient funding, schools may struggle to provide students with access to the latest digital tools and educational resources needed to develop digital literacy skills effectively (Davidson & Ezeh, 2023).

iii. Lack of Training for Educators: Many educators in public secondary schools may not have received adequate training or professional development opportunities to integrate digital literacy into their teaching practices. Without proper training, teachers may feel ill-equipped to teach digital literacy skills effectively, hindering students' ability to develop essential competencies for navigating the digital world (Arigidi & Sanni, 2024; Sambo, Imran & Akanbi, 2022).

iv. Curriculum Integration Challenges: Integrating digital literacy into the curriculum can be challenging due to competing priorities, standardized testing requirements, and rigid curriculum guidelines. As a result, digital literacy may be treated as an add-on rather than a core component of education, leading to limited instructional time and resources dedicated to teaching these skills (Okafor, 2023).

v. Digital Divide beyond Access: Even when students have access to technology, disparities in digital literacy skills may persist due to factors such as socioeconomic status, language barriers, and prior exposure to digital technologies. Students from disadvantaged backgrounds may lack the necessary support systems and resources to develop digital literacy skills outside of school, further widening the digital divide (Okafor, 2023; Mokhtari, 2023).

vi. Changing Nature of Technology: The rapid pace of technological change presents a challenge for educators to keep pace with the latest digital tools and trends. As new technologies emerge and evolve, educators must continually update their knowledge and skills to effectively teach digital literacy. However, limited time and resources may hinder their ability to stay updated on advancements in digital technology (Arigidi & Sanni, 2024).

vii. Cybersecurity and Online Safety Concerns: Teaching digital literacy also involves educating students about cybersecurity risks, online safety practices, and responsible digital behavior. However, addressing these topics effectively requires specialized knowledge and resources, which may be lacking in many public secondary schools. Without proper guidance, students may be more susceptible to cyber threats, privacy breaches, and online scams.

viii. Resistance to Change: Resistance to change among school administrators, educators, and stakeholders can impede efforts to promote digital literacy in public secondary schools. Some may view digital literacy as a non-essential skill or may be hesitant to adopt new teaching methods and technologies. Overcoming this resistance to change, requires strong leadership, effective communication, and collaborative efforts in preparing students to be relevant and successful in the digital age (Abubarkar & Jamilu, 2024).

In line with the above, addressing these challenges is essentially very important in successfully integrating digital literacy into secondary education and ensuring that all students are equipped with the skills they need to thrive in a digital society. Therefore, by improving access to technology, enhancing teacher training, and integrating comprehensive digital literacy education into the curriculum, students can be empowered to thrive in a digitally driven society.

Related Studies on Digital Literacy Skills among Students Globally and in Nigeria

Several studies have been conducted to explore the state of digital literacy skills among students, identifying key trends, challenges, and effective strategies for improving digital literacy education. Some of these studies are discussed briefly:

Soufghalem (2024) investigated the role of technology in enhancing digital literacy skills among secondary school students. The researcher employed a mixed method approach by combining quantitative survey and qualitative interview methods to assess the impact of technology on digital literacy. Findings revealed that technology plays a pivotal role in developing digital skills among students. It further revealed that students who demonstrated digital skills in their ability to critically analyze, and effectively use digital tools. However, challenges such as varying access to digital tools and discrepancies in digital skills were identified in this study. In the same vein, Bansal & Misra (2021) assessed the current status of digital literacy skills among 540 secondary-level students who were randomly selected from Meerut, Uttar Pradesh in India. The researcher employed a mixed method approach by combining a quantitative survey and a qualitative interview method to assess the impact of technology on students' digital literacy skills. Digital Literacy Assessment Test (DLAT) was administered among the secondary students. Results revealed a moderate level of digital skills among the surveyed secondary-level students. It further revealed that students who had High Digital Education Experience (HDEE) scored higher on the four dimensions of digital skills which include functional skills, psychological skills, critical skills, and ethical skills respectively. On the other hand, those students with Low Digital Education Experience (LDEE) scored very low on the four dimensions.

Furthermore, Wong and Lee (2020) examined the relationship between digital literacy skills and academic achievement among college students. The study assessed the students' digital literacy competencies and their correlation with grades. Results indicated a positive association between higher levels of digital literacy skills and academic success, particularly in courses that require online research, multimedia presentations, and collaboration through digital platforms.

The findings underscored the importance of integrating digital literacy instruction into higher education curricula to enhance students' academic outcomes.

Smith and Johnson (2020) evaluated the effectiveness of digital literacy awareness programs on students' performance in a university setting. The researchers conducted a quasi-experimental study with a control group and an experimental group that received digital literacy training. Results indicated a significant improvement in academic performance among students who underwent the digital literacy awareness program compared to those who did not. The program included modules on internet safety, critical thinking in online environments, and effective information-searching techniques. The findings suggest that targeted digital literacy interventions can positively impact student outcomes.

Kim (2019) investigated the trajectory of digital literacy skill development among adolescents over three years. The study tracked changes in participants' digital skills, including internet navigation, critical evaluation of online information, and multimedia creation. Results revealed a significant improvement in digital literacy skills among adolescents, with variations based on factors such as socioeconomic status and prior exposure to technology. The study highlights the importance of early interventions and continued support in nurturing digital competencies among young individuals.

These few studies have shown that there is a general proficiency in basic digital tasks among students, however, there is a clear need for more comprehensive training in critical evaluation, ethical use of information, and advanced digital skills.

Theoretical Framework

The most relevant theory for this study is the Diffusion of Innovation Theory (DOI). This theory applies to acquisition of digital literacy skills and the utilization of digital tools among secondary school students as explained briefly below:

Diffusion of Innovation Theory

The diffusion of Innovation (DOI) theory was propounded by Everest Rogers (1962). According to this theory, diffusion is a process by which an innovation or an idea is communicated through certain channels. Rogers identified five main elements that influence the adoption of an innovation which are the innovation itself, adopters, communication channels, time, and social system. Five categories of adopters are identified which are innovators, early adopters, early majority, late majority, and laggards. In the context of public secondary schools, DOI theory is applicable in explaining varying levels of adoption in the use of technology amongst public secondary students due to the several constraints they experience in the process of inculcating digital literacy skills and using digital tools The adoption of a new technology also depends on the type of adopter and the enabling environment in which they find themselves. Adoption of new technology can be influenced by the following factors as briefly explained. These are: (i). Relative advantage: This is the degree to which a new technology is seen as better than other existing technologies. (ii). Compatibility: This is the rate at which new technology is

consistent with the values, experiences, aspirations, and needs of the adopters. (iii).Complexity: This involves the extent of difficulty in adopting the new technology. For instance, if the innovation is complex, adoption may not be easy. (iv) Trialability: This is the extent to which the new technology can be tested before adoption. (v).Observability: This is the extent to which the new technology produces positive outcomes.

Therefore, each of these factors mentioned above can influence the adoption and use of evolving digital tools by secondary school students in varying proportions depending on their type of adoption- innovator, early adopters, early majority, late majority and laggards.

Methodology

A descriptive survey research design was adopted for the study because it enabled the researcher to assess the opinion of public secondary school students on their digital literacy skills and awareness of digital tools in the surveyed secondary schools in Moro Local Government Area of Kwara State. The population for this study comprised 496 Senior Secondary School (SSS) students ranging from SSSI -SSSIII in the three selected public secondary schools in Moro Local Government Area, Kwara State. Data collection was done through the distribution of questionnaires by hand in each of the selected public schools. A total of 200 copies of the questionnaire were distributed to the students, out of which 150 copies were returned valid and analyzed. A rate of return of 75% was achieved which is relatively on the high side. The collected field data was analyzed using descriptive statistics such as frequency, percentages, mean, and standard deviation. A stratified random sampling technique was used in the selection of three public secondary schools out of six in Moro L.G.A. Krejcie Morgan (1970) sample size determination table was used to determine the sample size of this study based on the population of students in SSS1- SSS3. This gave a total of 200 students for this study.

A structured and validated questionnaire was used to collect information from the respondents. The questionnaire was divided into six sections. Section A contained the respondents' demographic information. Section B contained a four-point Likert Scale adapted from Fag & Wang (2022) measuring the digital literacy skills of the students. Section C comprised a checklist containing items to determine the level of awareness of digital tools. Section D also contained a checklist comprising items to determine the level of accessibility and availability of digital tools. Section E gathered information on the challenges faced by students in the use of digital tools. The face validity was achieved by checking through the questionnaire items for ambiguity and clarity and re-framing the items where necessary to ensure the correctness and appropriateness of the items. In testing for reliability of the research instrument, a pilot study was conducted using a total of 30 students in the three selected Public secondary schools in Moro L.G.A in Kwara State. Cronbach's Alpha Reliability test was conducted on the research instrument. The reliability score ranged from .89 to .92, which showed a high internal consistency and reliability of the questionnaire items.

Analysis of Research Objectives

The results of data collected to analyze each of the research objectives are presented in the below Tables:

i. **To determine the extent of digital literacy skills among students in the selected public secondary schools in the Moro Local Government Area of Kwara State.**

Table 1: Extent of Digital Literacy Skills among Students in the Selected Public Secondary Schools in Moro Local Government Area of Kwara State

Level of Digital Literacy Skills	**SA**	**A**	**D**	**SD**	**MEAN**	**S.D**
F (%)	**F (%)**	**F (%)**	**F (%)**			
I can search for and access information in a digital environment.	69(46.0)	63 (42.0)	7(4.7)	11(7.3)	3.27	.857
I can use diverse digital tools to store and manage information,	41(27.3)	72(48.0)	23(15.3)	14(9.3)	2.93	.895
I can communicate with others in any environment using digital tools.	57(38.0)	60(40.0)	17(11.3)	16 (10.7)	3.05	.961
I can share information and contents with other people via the Internet and other digital Platforms.	51(34.0)	59(39.3)	23(15.3)	17(11.3)	2.96	.975
I know different ways of creating and editing digital content	47(31.3)	58(38.7)	31(20.7)	14(9.3)	2.92	.945
I know how to transform information and organize it into different formats (audio, videos, images, etc.),	38(25.3)	69(46.0)	27(18.0)	16(10.7)	2.86	.920
When sharing digital information, I ensure that my privacy and security details are well protected.	62(41.3)	57(38.0)	23(15.3)	8(5.3)	3.15	.873
I am able to identify harmful behaviors that can affect me on social networks.	39(26.0)	72(48.0)	26(17.3)	13(8.7)	2.91	.882
I am able to navigate online Learning systems and digital libraries with little or no assistance	45(30.0)	66(44.0)	23(15.3)	16(10.7)	2.93	.939
Grand Mean					**2.99**	

Table 1 shows a moderately high level of digital literacy skills among students in the surveyed area. For instance, 132(98%) of the respondents agreed they could search and access information in a digital environment. 111(79.3%) ensure their privacy and security details are well protected when sharing digital information. 117(78%) can communicate with others in any environment using digital tools; 107(71.3%) can transform and organize information into different formats; 111(74%) can identify harmful behaviors that can affect them among others. These results depict that students in public secondary schools are relatively skilled in performing digital tasks.

ii. To find out the extent of awareness of digital tools in the selected public secondary schools in Moro Local Government, Kwara state, Nigeria

Table 2: Extent of Awareness of Digital Tools in the Selected Public Secondary Schools in Moro Local Government, Kwara State, Nigeria

Level of Awareness of Digital Tools	Yes F(%),	No F(%)
Data/Word Processing Tools		
Microsoft Word	115(76.7)	35(23.3)
Microsoft Excel	77(51.3)	73(48.7)
Microsoft PowerPoint	98(65.3)	52(34.7)
Design Tools		
Canva,	65(43.3)	85(56.7)
CorelDraw,	83(55.3)	67(44.7)
Adobe Illustrator,	62(41.3)	88(58.7)
Programming Tools		
Visual Studio,	80(53.3)	70(46.7)
Scratch,	71(47.3)	79(52.7)
Kahoot,	70(46.7)	80(53.3)
Analytical Tool		
Google Forms	90(60.0)	60(40.0)
Communication Tool		
Email Messaging	96(64.0)	54(36.0)

Table 2 shows a moderate level of awareness above 50% of digital tools among the respondents in varying proportions. For instance, data processing tools such as 115(76.7%) Microsoft Word, 98(65.3%), Microsoft PowerPoint, 96(64%) Email Messaging, and 90(60.0%) Google Forms. On the other hand, design tools with a level of awareness below 50% include 65(43.3%) Canva, 62(41.3%) Adobe Illustrator, 71(47.3%); alongside programming tools such as scratch, and 70(46.7%) Kahoot respectively. This result depicts that respondents are aware of basic digital tools like Microsoft Word, Email messaging, and Google Forms, while they are less aware of complex tools like Canva, Adobe Illustrator, and Kahoot.

iii. To find out the level of accessibility to digital tools in the selected public secondary schools in the Moro Local Government Area of Kwara State

Table 3: Level of Accessibility to Digital Tools in Selected Public Secondary Schools in Moro Local Government Area of Kwara State

Digital Tools	Daily F(%)	Weekly F(%)	Monthly F(%)	Never F(%)	MEAN	S.D
Data/Word Processing Tools						
Microsoft Word	59(39.3)	25(16.7)	19(12.7)	47(31.3)	2.36	1.286
Microsoft Excel	32(21.3)	40(26.7)	33(22.0)	45(30.0)	2.61	1.129
Microsoft PowerPoint	34(22.7)	31(20.7)	36(24.0)	49(32.7)	2.67	1.157
Design Tools						
Canva	28(18.7)	31(20.7)	23(15.3	68(45.3)	2.87	1.183
CorelDraw	33(22.0)	27(18.0)	34(22.7)	56(37.3)	2.75	1.175
Adobe Illustrator	33(22.0)	33(22.0)	22(14.7)	62(41.3)	2.75	1.209
Programming Tools						
Visual Studio	41(27.3)	30(20.0)	30(20.0)	49(32.7)	2.58	1.206
Scratch	30(20.0)	41(27.3)	22(14.7)	57(38.0)	2.71	1.173
Kahoot	26(17.3)	42(28.0)	27(18.0)	55(36.7)	2.74	1.132
Analytical Tool						
Google Forms	30(20.0)	38(25.3)	36(24.0)	46(30.7)	2.65	1.117
Communication Tool						
Email Messaging	43(28.7)	29(19.3)	41(27.3)	37(24.7)	2.48	1.151
Grand Mean					**2.34**	

Table 3 shows a moderately low level of accessibility to digital tools with a mean score of (2.34) among students in the selected public secondary in Moro L.G.A. in Kwara State in varying proportions. For instance, in terms of daily usage, 59(39.3%) Microsoft Word had the highest, followed by 41(27.3%) Visual Studio. In terms of weekly usages, 42(28%) kahoot, 41(27.3%) Scratch, and 40(26.7%) Microsoft Excel were mostly accessed in varying degrees. respondents had accessed the digital tools. In addition, in terms of monthly usage, 36(24.0%) Microsoft PowerPoint, 36(24.0%) Google Forms, and 34(22.7%) Corel Draw were mostly used However, in terms of tools that were never accessed by the students, they include 68(45.3) Canva, followed by 62(41.3) Adobe Illustrator and 57(38.0%) Scratch. These results depict that while some of the students have daily or weekly access to these tools some never accessed them, perhaps due to the non-availability of these tools.

iv. To determine the extent of availability of digital tools in the selected public secondary schools in the Moro Local Government Area of Kwara State

Table 4: Availability of Digital Tools in Selected Public Secondary Schools in Moro Local Government area of Kwara state

Level of Awareness of Digital Tools	Yes F(%),	No F(%)
Data/Word Processing Tools		
Microsoft Word	101(67.3)	49(32.7)
Microsoft Excel	69(46.0)	81 (54.0)
Microsoft Powerpoint	86(57.3)	64(42.7)
Design Tools		
Canva	54 (36.0)	96(64.0)
CorelDraw,	79(52.7)	71(47.3)
Adobe Illustrator,	61(40.7)	89(59.3)
Programming Tools		
Visual Studio	81(54.0)	69(46.0)
Scratch	69(46.0)	81(54.0)
Kahoot	74(49.3)	76(50.7)
Analytical Tool		
Google Forms	79(52.7)	71(47.3)
Communication Tool		
Email Messaging	93(62.0)	57(38.0)

Table 4 shows the extent of availability of digital tools among the surveyed public schools. For instance Majority of the respondents 101(67.3%) have Microsoft Word, 86(57.3%) Microsoft PowerPoint, 81(54%) Visual Studio, 79(52.7%) CorelDraw among others. However, students indicated that the following digital tools were not available such as 96(64.0%) Canva, 89(59.3%) Adobe Illustrator, 81(54.0%) Microsoft Excel, 81(54.0%) Scratch among others. This result shows that few common digital tools are available in the school while most of the advanced tools were not available for use by the students.

v. To identify the challenges faced in the use of digital tools among the selected public secondary schools in the Moro Local Government Area of Kwara State

Table 5: Challenges in the Use of digital literacy tools among Students in Selected Public Schools

ITEM	SA	A	D	SD	MEAN	S.D
F (%)	**F(%)**	**F(%)**	**F (%)**			

I don't have interest in learning digital literacy skills due to accessibility problems.	43(28.7)	29(19.3)	28(18.7)	50(33.3)	2.43	1.223
I lack internet resources to access online learning platforms in my school.	28(18.7)	41(27.3)	39(26.0)	42(28.0)	2.37	1.083
I don't have access to digital tools in my school due to limited computer systems.	30(20.0)	42(28.0)	38(25.3)	40(26.7)	2.41	1.088
I lack motivation to learn digital literacy skills due to inadequate tools that can go around.	34(22.7)	35(23.3)	39(26.0)	42(28.0)	2.41	1.124
I have problem understanding technical terms and concept of digital literacy skills.	33(22.0)	38(25.3)	38(25.3)	41(27.3)	2.42	1.113
I lack adequate time to practice digital literacy skills on my own	38(25.3)	32(21.3)	40(26.7)	40(26.7)	2.45	1.139
In my school, there is inadequate electricity supply, which affects my learning online.	41(27.3)	34(22.7)	33(22.0)	42(28.0)	2.49	1.169
In my school, the computer laboratory is not adequately equipped for the use of students	37(24.7)	35(23.3)	34(22.7)	44(29.3)	2.43	1.155
Grand Mean					**2.43**	

Table 5 shows the diverse challenges faced by the students in acquiring digital literacy skills in varying proportions. Result shows a moderate level of challenges with a mean score of 2.43 Majority of the students, barely above 50% disagreed with the following challenges:78(52%) and lacked interest in learning digital literacy skills due to accessibility problems, 81(54%) lack of internet resources to access online learning, 78(52%) limited access to computer systems, 81(54%) inadequacy of digital tools affect their motivation to learn digital skills; while 79(52.6%) had problems in understanding technical terms and concepts of digital literacy skills, 80(53.4%) lack of time to practice digital literacy skills among others. This result depicts that students experienced moderate challenges in acquiring digital skills.

Discussion of Findings

This study investigated the extent of digital literacy skills and utilization of digital tools among selected public secondary schools in Moro Local Government Area, Kwara State,

Nigeria. The findings of the study were discussed in line with the objectives stated earlier and the extant literature.

The first objective of the study was to determine the extent of digital literacy skills among students in the selected public secondary schools in Moro Local Government, Kwara State, Nigeria. Findings revealed a moderate level of digital literacy skills among students in the selected public secondary schools. The findings of this study support Bansal & Misra (2021) who reported moderate digital literacy skills among secondary school students in Uttar Pradesh, India.

The second objective of the study was to determine the extent of awareness of digital literacy tools in the selected public secondary schools in the Moro Local Government Area of Kwara State. The study revealed that the students exhibited a higher level of awareness of some basic digital tools than others such as (76.7%)Microsoft Word, (65%)Microsoft PowerPoint, and 64%) Email messaging among others. However, students exhibited a low level of awareness in the use of digital tools such as (41.3%) Adobe Illustrator, (43.3%) Canva, and programming tools such as (46.7%) Kahoot, and (47.3%) Scratch among others. This result tandems with the findings of past studies on digital tools among public secondary schools within and outside Nigeria (Abubarkar & Jamiliu, 2024; Bansul & Misra, 2021).

The third objective of the study was to find out the level of accessibility to digital tools in the selected public secondary schools in Moro Local Government Area, Kwara State. Findings revealed a low to moderate level of accessibility to digital tools with a mean score of 2.43. This finding supports Soufghalem (2024) who found varying levels of discrepancies in accessing digital tools among secondary students.

The fourth objective of the study is to find out the extent of availability of digital tools among the selected public secondary schools in Moro Local Government, Kwara State, Nigeria. Findings revealed varying proportions in the level of availability of digital tools in the selected public secondary school. Basic digital tools such as Microsoft Word (67.3%), Email Messaging (62%), and Microsoft PowerPoint (57.3%) were commonly used by the students. However, more complex tools were rarely used by students due to their unavailability such as 96(64.0%) Canva, 89(59.3%) Adobe Illustrator, and 81(54.0%) Microsoft Excel in the selected public schools. This result supports Mokhtari (2023) who found that schools have significant variations in the availability of digital tools, which affects students' ability to practice and enhance their digital skills.

The fifth objective of the study was to find out the challenges faced in the use of digital literacy tools among the selected public secondary schools in Moro Local Government Area, Kwara State. Findings revealed diverse challenges in varying proportions faced by students in the use of digital tools such as inadequate internet resources, limited access to tools, and infrastructural issues such as electricity supply and network/connectivity issues. This finding supports past studies that identified several probable factors that affect the acquisition of digital skills such as power failure, a lack of digital equipment, an overwhelming workload, the cost of

digital skills training, and a lack of basic digital equipment, among others (Davidson & Ezeh, 2023; Okafor, 2023; Sambo et al., 2022)

Conclusion

This study assessed the extent of digital literacy skills and utilization of digital tools among students in selected public secondary schools in Moro Local Government Area, Kwara State Nigeria. Findings revealed a moderate level of digital literacy skills among the secondary school students in the surveyed schools. In addition, a moderate level of awareness and availability of basic digital tools, while there was a low level of awareness and availability of advanced digital tools. Also, a moderately low level of accessibility to digital tools was reported among the students in the selected public secondary schools. Apart from this, students reported several challenges that hindered the availability, accessibility, and utilization of these digital tools such as irregular electricity, lack of internet, and network/connectivity issues among others. In conclusion, this study has clearly shown that students in the selected public schools in Moro Local Government Area, Kwara State, Nigeria are equally exposed to digital skills and utilizing these tools, however on a low to moderate level due to a number of challenges. Therefore, it is recommended that the digital skill gaps among public secondary school students need to be addressed urgently to improve maximally their utilization of digital tools.

Recommendations

In line with the findings in this study, the following recommendations are hereby made **for improvement of the current situation:**

1. Management of public schools should ensure that the curriculum on digital literacy skills is reviewed regularly to improve the acquisition of skill-sets by students.
2. Management of public secondary schools should also ensure that the latest versions of digital tools are utilized by students from time to time to improve their awareness level.
3. Public schools within the same locality should collaborate and partner with Non-Governmental Organizations (NGOs) to provide relevant infrastructures and facilities to ensure constant accessibility to diverse digital tools by students.
4. State Government should provide adequate funds to public secondary schools to ensure the availability of basic and advanced digital tools for regular use by students.
5. State Government in liaison with public secondary school board should put adequate and effective measures in place to ensure that probable challenges hindering the acquisition of digital skills among students are urgently tackled and monitored for rapid results.

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