

**EXPLORING THE RELATIONSHIP BETWEEN DIGITAL LITERACY AND  
ACADEMIC PERFORMANCE OF TERTIARY EDUCATION STUDENTS**

**BY**

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**A PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF COMPUTER  
SCIENCE, FACULTY OF PHYSICAL SCIENCE, UNIVERSITY OF BENIN, BENIN  
CITY, EDO STATE, NIGERIA, IN PARTIAL FULFILMENT OF THE  
REQUIREMENT FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc) DEGREE  
IN COMPUTER SCIENCE.**

**FEBRUARY. 2025**

## **CERTIFICATION**

This is to certify that this project work was carried out by OGUGOFOR EMEKA with Matriculation Number PSC2008189 under my supervision and it is adequate in scope and content for the award of Bachelor of Science (B.Sc) Degree in Computer Science of the University of Benin.

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**PROF. GODSPOWER EKUOBASE, Phd**

(Project Supervisor)

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**DATE**

## **APPROVAL**

This project is hereby approved by the department of computer science in partial fulfilment of the requirements for the award of the Bachelor of Science (B.Sc) Degree in Computer Science of the University of Benin.

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**PROF. GODSPOWER EKUOBASE, Phd**  
(Head of Department)

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**DATE**

## **DEDICATION**

I dedicate this work to God Almighty for the grace and inspiration to carry out this work through to completion, and for keeping me throughout my time at the University of Benin (UNIBEN). I also dedicate it to my parents, **MR and MRS OGUGOFOR**, my siblings, my friends and course mates, for their support and guidance financially, mentally and emotionally.

Lastly, I dedicate this work to my supervisor, **PROF. GODSPower Ekuobase**, for his guidance and willful impartation of knowledge. It would not have been possible without him.

## ACKNOWLEDGEMENT

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Special thanks to the Head of Department of Computer Science, **Prof. GODSPOWER O. EKUOBASE**, and all other lecturers and staff of this great department for their immeasurable support and inspiration on this journey.

To my parents, **MR AND MRS OGUGOFOR**, my siblings, my friends and coursemates for their unwavering love and availability, my deepest gratitude to you all.

## **ATTESTATION**

I **OGUGOFOR EMEKA GODWIN**, with Matriculation Number **PSC2008189**, attest that this project work titled “EXPLORING THE RELATIONSHIP BETWEEN DIGITAL LITERACY AND ACADEMIC PERFORMANCE OF TERTIARY EDUCATION STUDENTS” is an original work and was carried out by me, and it has not been used elsewhere for any degree or any other certificate.

\_\_\_\_\_  
**OGUGOFOR EMEKA GODWIN**  
(Project Student)

\_\_\_\_\_  
**DATE**

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## ABSTRACT

This study explores the relationship between digital literacy and academic performance among tertiary education students. As education becomes increasingly digitised, students are expected to navigate online learning platforms, conduct digital research, collaborate virtually, and utilise various technological tools. However, disparities in digital literacy levels may affect students' ability to engage effectively with academic materials, leading to variations in performance. This research investigates how digital literacy skills—such as information retrieval, digital communication, content creation, and problem-solving—correlate with students' academic success. A quantitative research design was employed, with data collected through structured questionnaires distributed to tertiary education students. Stratified random sampling was used to ensure diverse representation across different institutions, disciplines, and demographic groups. The collected data were analysed using descriptive statistics, correlation analysis, and regression modelling to determine the extent to which digital literacy influences academic performance.

Findings indicate a strong positive correlation between digital literacy and academic performance, with students possessing higher digital literacy skills achieving better grades and engaging more effectively in academic tasks. The study highlights key areas where digital literacy impacts learning, as well as challenges faced by students with lower digital proficiency. The results emphasise the need for educational institutions to integrate digital literacy training into their curricula, provide access to digital tools, and implement policies that bridge the digital divide. By fostering strong digital literacy skills, universities can enhance student engagement, improve learning outcomes, and better prepare graduates for an increasingly digital world. This study contributes to the growing body of research on digital education and offers practical recommendations for educators, policymakers, and students to optimise the role of technology in academic success.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the study

Digital literacy refers to the ability to efficiently and thoughtfully navigate, assess, and produce information through various digital technologies. In today's rapidly evolving technological landscape, digital literacy has become a crucial skill for learners at all stages of education, including higher education institutions. Students are expected not only to have fundamental technological skills, such as operating computers and accessing the internet, but also to participate in more advanced activities such as information searching, digital collaboration, content development, and responsible use of digital resources (Ng, 2018; Koehler & Mishra, 2021). As education increasingly incorporates technology into the curriculum, understanding the connection between digital literacy and academic achievement becomes ever more important.

The concept of digital literacy has developed beyond mere technical skills to encompass critical thinking, problem-solving, and the capacity to navigate complex digital environments. Research indicates that students with stronger digital literacy abilities are often more effective at accessing and processing information, collaborating with peers, and participating in higher-order cognitive activities (Barak & Dori, 2019). Moreover, digital literacy involves not only individual competencies but also the ability to function within digital settings that foster collaboration and learning (Alharbi & Arif, 2020). Nevertheless, although the significance of digital literacy is widely recognized, its direct influence on academic performance continues to be an area of study.

In traditional education systems, students' academic achievement is typically evaluated through various methods, including exams, assignments, and presentations. These approaches aim to measure cognitive abilities, but they may not entirely reflect the role of digital literacy in today's learning environments. Studies indicate that students who are adept at using digital tools often perform better in activities that involve collaboration, research, and problem-solving (Cavanaugh & Dunlap, 2020). However, disparities in digital skills across different student groups and disciplines can influence how learners engage with academic tasks and, consequently, affect their overall academic performance.

## **1.2 Statement of the Problem**

Tertiary institutions, including universities and colleges, have progressively integrated digital tools into teaching, learning, and assessment. Despite this integration, there remains a significant gap in students' digital literacy, which can influence their academic outcomes. While some students are proficient in using digital technologies, others may face challenges with fundamental tasks such as conducting online research, accessing digital resources, or participating in online learning platforms. This digital divide is likely to play a role in creating disparities in students' academic performance.

The problem this study seeks to address is the unclear relationship between students' digital literacy levels and their academic performance at tertiary institutions. Specifically, the study aims to investigate if students with higher digital literacy skills achieve better academic outcomes compared to those with lower digital literacy. Research has shown that a lack of digital literacy skills can hinder students' academic progress, particularly in online learning environments (Johnson et al., 2021). By exploring this relationship, the study will provide valuable insights into how digital literacy impacts students' engagement with the curriculum and their overall academic success.

## **1.3 Rationale for the Study**

Although numerous studies have examined digital literacy and its effects on learning outcomes across different educational settings, research specifically addressing its impact on the academic performance of tertiary education students, particularly in Nigerian institutions, remains limited. As universities in Nigeria and other developing nations continue to incorporate digital technologies into their academic programs, understanding the relationship between digital literacy and academic performance will help guide teaching strategies, curriculum development, and student support services (Bawden, 2018; Swanepoel & Kotzé, 2020).

This study seeks to address the gap in current literature by examining students' digital literacy levels and their academic performance within the context of tertiary education. By investigating this relationship, the study will provide a deeper insight into how digital literacy impacts academic achievement and how educators and institutions can utilize technology to improve learning outcomes. Additionally, given the accelerated move to online learning prompted by the COVID-19 pandemic, understanding the effect of digital literacy on

students' academic performance in a digital learning environment is more important than ever (Manca & Ranieri, 2021).

#### **1.4. Aim and Objectives of the Study**

##### **1.4.1. Aim**

The purpose of this study is to investigate the relationship between digital literacy and the academic performance of tertiary education students.

##### **1.4.2. Objectives**

The objectives of this study are:

1. To assess the level of digital literacy among tertiary students.
2. To examine the relationship between digital literacy and academic performance.
3. To identify the specific digital literacy skills that are most strongly correlated with academic performance.

#### **1.5. Significance of the Study**

1. The findings of this study will be valuable for various stakeholders, including universities administrators, faculty members, and students.
2. By examining the relationship between digital literacy and academic performance, universities can develop and implement more effective digital literacy programs to enhance student learning.
3. For educators, the study will offer insights into how students' digital skills influence their interaction with course materials, collaboration, and completion of assignments, allowing them to better support students with lower digital literacy levels (Gilster, 2019).
4. For students, it will highlight the significance of digital literacy in achieving academic success and motivate them to strengthen their digital skills.
5. The study will provide evidence to guide policy decisions concerning the integration of technology into curricula and student support services (Lee & McDonald, 2021)

#### **1.6. Scope of the Study**

This study will target students in tertiary institutions, specifically within universities, who are enrolled in undergraduate programs. The research will include a diverse student population to examine whether significant differences exist in digital literacy levels across different fields

of study. Students' digital literacy will be assessed using surveys and questionnaires, and their scores will be correlated with academic performance as indicated by their grades in core courses. The study will focus on the academic years 2019–2024, with particular attention to students in their second through final years of study.

### **1.7. Research Methodology**

Research design

1. Quantitative Research Approach will be adopted. A survey research design will be used to collect samples of tertiary education students
2. Correlational study- It will examine the relationship between digital literacy and academic performance

### **Participants**

Computer science students of University of Benin Edo state Nigeria

Sample size: A minimum of 200 participants will be targeted for the survey

Sampling technique— Stratified random sampling

### **Data Analysis**

1. Descriptive statistics: Means, standard deviation and frequency will be used to summarize the demographic data
2. Inferential statistics: Correlation analysis (e.g Pearson) will be used to examine the relationship between digital literacy and academic performance
3. Regression Analysis: Multiple regression analysis will be used to identify specific digital literacy skills that predict academic performance

### **Data Collection:**

**Digital Literacy Assessment:** Students will be assessed on their digital literacy through a structured questionnaire that evaluates their abilities in key areas such as information retrieval, content creation, communication tools, and online collaboration. This will include self-reported measures and objective tasks where students demonstrate their proficiency in using digital tools.

**Academic Performance Measurement:** Academic performance will be measured through students' grades from their most recent semester, focusing on core courses relevant to their programs of study. This data will be collected from official academic records.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0. Introduction

The growing dependence on digital tools in education has changed how students access information, collaborate, and carry out academic tasks. Digital literacy has become a critical competency for students in tertiary institutions, affecting their academic achievement. This chapter examines the concept of digital literacy, its importance in higher education, and its connection to academic performance. It also reviews theoretical frameworks, empirical research, factors affecting digital literacy, and identifies research gaps that require further exploration.

#### 2.1 Concept of Digital Literacy

Digital literacy has progressed from basic computer skills to a more advanced set of abilities that include the capacity to critically evaluate, communicate, and produce digital content. According to Gilster (1997), digital literacy is “the ability to understand and use information in multiple formats from a wide range of digital sources.” Ng (2018) further describes digital literacy as a blend of cognitive, technical, and socio-emotional competencies that allow individuals to participate effectively in a digital society.

The concept of digital literacy is complex and can be interpreted in various ways. Some scholars consider digital literacy as a collection of technical abilities, including the capacity to operate software applications, browse the internet, and produce digital content (Katz, 2013). Others define digital literacy more broadly, encompassing not only technical skills but also critical thinking, problem-solving, and communication competencies (Buckingham, 2007).

#### 2.2 Components of Digital Literacy

Several frameworks define the core components of digital literacy:

1. Technological Literacy – Understanding how to use digital devices and software effectively, technological literacy refers to the capacity to competently operate and comprehend technology, including computers, software, and other digital tools, to access, assess, and produce information. It encompasses a variety of skills, including:

- Basic computer skills, such as typing and using a mouse
- Familiarity with software applications, such as word processing and spreadsheets
- Ability to use the internet to access and evaluate online information
- Understanding of digital concepts, such as algorithms and data structures.

2. Information Literacy– The ability to locate, assess, and utilize information from digital sources. Information literacy refers to the capacity to effectively find, evaluate, and apply information. It includes:

- Identifying the need for information and locating relevant sources
- Evaluating the credibility and reliability of sources
- Organizing and synthesizing information to answer questions or solve problems
- Using information to make informed decisions or take action

Information literacy is important in today's digital age, where there is an overwhelming amount of information available. It helps individuals to navigate this information landscape and make informed decisions.

3. Communication and Collaboration Skills– Proficiency in digital communication tools such as email, social media, and online forums. Communication and collaboration skills refer to the ability to work effectively with others to achieve a common goal. This includes:

- Verbal and written communication skills, such as public speaking and writing
- Ability to work in teams and collaborate with others
- Active listening and feedback skills
- Conflict resolution and negotiation skills

In the digital age, communication and collaboration skills are critical for success. They enable individuals to work effectively with others, share ideas and information, and build strong relationships.

4. Content Creation and Digital Ethics – Ability to generate digital content while respecting copyright and privacy laws. Content creation and digital ethics refer to the ability to create and publish digital content, such as text, images, audio, and video, while respecting the principles and values that guide behavior in the digital world. This includes:

- Writing and editing skills, such as blogging and journalism
- Visual design skills, such as graphic design and photography
- Audio and video production skills, such as podcasting and videography
- Ability to use digital tools, such as content management systems and social media platforms
- Respect for intellectual property and copyright
- Protection of personal data and privacy
- Avoidance of cyberbullying and online harassment
- Responsibility for digital actions and their consequences

Content creation and digital ethics are essential for individuals to express themselves, share their ideas and perspectives, and connect with others in a responsible and ethical manner.

5. Problem-Solving and Critical Thinking – Using digital tools to examine information, make decisions, and address academic challenges. Problem-solving and critical thinking refer to the capacity to analyze issues, determine solutions, and make well-informed decisions. This involves:

- Identifying and defining problems
- Analyzing data and information

These components highlight that digital literacy is more than technical know-how; it also involves higher-order thinking skills necessary for academic excellence.



**FIG 2.1: COMPONENTS OF DIGITAL LITERACY**

### **2.3 Academic Performance in Tertiary Education**

Academic performance refers to the degree of achievement students reach in their educational endeavors. It is typically assessed using Grade Point Average (GPA), coursework, research output, and class engagement (Cavanaugh & Dunlap, 2020). Academic success is influenced by multiple factors, including cognitive ability, learning strategies, institutional support, and levels of digital literacy.

The relationship between digital literacy and academic performance is complex and influenced by various factors. Students with high digital literacy skills tend to perform better academically, as they are able to effectively use digital tools to access information, communicate with peers and instructors, and complete academic tasks (Barak & Dori, 2019).

### **2.3.1 Digital Literacy as a Determinant of Academic Performance**

Recent research indicates that digital literacy is an important predictor of academic performance. According to Alharbi & Arif (2020), digital literacy greatly improves students' capacity to navigate online learning platforms, access academic resources, and engage in critical evaluation of scholarly content.

The influence of digital literacy on academic performance can be linked to several factors. First, digital literacy allows students to access a broad array of digital resources, including online libraries, academic databases, and educational websites (Katz, 2013). Second, digital literacy supports communication and collaboration among students, instructors, and peers, fostering a sense of community and social presence in online learning settings (Rovai, 2002).

### **2.4 Theoretical Frameworks**

Understanding the relationship between digital literacy and academic performance requires a theoretical foundation. This study is guided by the following frameworks:

1. Technology Acceptance Model (TAM) — The Technology Acceptance Model (TAM) is a theoretical framework that describes how users develop attitudes and intentions toward adopting new technology. Introduced by Fred Davis in 1989, TAM proposes that two primary factors determine an individual's decision to use a technology:

- Perceived Usefulness (PU): The extent to which a user perceives that a technology will assist them in achieving their goals or enhancing their performance.
- Perceived Ease of Use (PEU): The extent to which a user believes that a technology is easy to use and understand.

TAM proposes that when a user perceives a technology as both useful and easy to use, they are more likely to develop a positive attitude toward it and intend to adopt it. The model also suggests that these two factors are affected by external variables, including system design, user experience, and social influences.

2. Constructivist Learning Theory – Constructivist theories by Piaget (1950) and Vygotsky (1978) highlight that students build knowledge through interaction with their learning environment. Digital literacy allows students to explore online educational resources, participate in virtual discussions, and apply knowledge to real-world problems, thereby

improving learning outcomes. Constructivist Learning Theory is a theoretical framework that explains how learners create knowledge and meaning through their experiences and interactions with the environment. Developed by Jean Piaget, Lev Vygotsky, and other constructivist scholars, this framework proposes that:

1. Learning is an active process: Learners are not passive recipients of information but active builders of their own understanding.
2. Knowledge is constructed: Learners build knowledge by linking new information to their existing knowledge and experiences.
3. Context is important: The social, cultural, and physical context in which learning takes place influences the construction of knowledge.
4. Reflection and self-regulation: Learners need to reflect on their own learning and regulate their own learning processes to construct meaningful knowledge.

Constructivist Learning Theory highlights the value of hands-on, experiential learning and the necessity for learners to actively participate in constructing their own knowledge and understanding.

3. Cognitive Load Theory – Sweller (1988) proposed Cognitive Load Theory, which suggests that students with lower digital literacy may experience cognitive overload when using digital platforms, reducing their learning efficiency. In contrast, students with higher digital literacy can process information more effectively, resulting in better academic performance. Cognitive Load Theory (CLT) is a theoretical framework that explains how the cognitive demands of learning tasks affect the learning process. CLT asserts that:

1. Cognitive load: The amount of mental effort required to complete a learning task.
2. Intrinsic load: The inherent difficulty of the learning material.
3. Extraneous load: The unnecessary cognitive demands imposed by the learning environment or instructional design.
4. Germane load: The cognitive demands that are relevant to the learning task and promote deep understanding.

CLT suggests that when the cognitive load is too high, learners may experience cognitive overload, which can hinder the learning process. The theory proposes that instructional designers should aim to minimize extraneous load and optimize germane load to promote effective learning.

These theoretical frameworks provide a foundation for understanding the complex relationship between digital literacy and academic performance.

## **2.5 Empirical Studies on Digital Literacy and Academic Performance**

Several empirical studies highlight the correlation between digital literacy and students' academic achievements:

1. Swanepoel & Kotzé (2020) – Found that tertiary students with high digital literacy scores outperformed their peers in online learning environments.
2. Manca & Ranieri (2021) – Reported that students with strong digital skills were better able to adapt to remote learning during the COVID-19 pandemic, demonstrating greater engagement and academic success.
3. Johnson et al. (2021) – Emphasized that digital literacy gaps contribute to academic inequalities, particularly among students from underprivileged backgrounds.

These studies demonstrate that digital literacy is a critical factor in academic success, and institutions should prioritize digital literacy training to support student success.

## **2.6 Digital Literacy and Online Learning**

The growth of online learning has emphasized the critical role of digital literacy in tertiary education. Online learning environments demand that students possess advanced digital literacy skills, including the ability to navigate online platforms, communicate with instructors and peers, and utilize digital resources (Katz, 2013).

Research indicates that students with strong digital literacy skills generally perform better in online learning environments, as they can efficiently use digital tools to access information, interact with peers and instructors, and complete academic tasks (Barak & Dori, 2019).

## **2.7 Digital Literacy and Academic Integrity**

Digital literacy is also crucial for maintaining academic integrity. Students with strong digital literacy skills are more capable of evaluating online sources, avoiding plagiarism, and correctly citing references (Buckingham, 2007).

Research has demonstrated that digital literacy training can equip students with the skills necessary to uphold academic integrity in digital environments. For instance, a study by Alharbi & Arif (2020) found that digital literacy training significantly enhanced students' ability to evaluate online sources and prevent plagiarism.

## **2.8 Factors Influencing Digital Literacy Among Tertiary Students**

Digital literacy development is influenced by several factors, including:

1. Access to Digital Resources – Students with consistent access to computers, smartphones, and high-speed internet have more opportunities to develop digital skills.
2. Digital Skills Training – Institutions that integrate digital literacy courses into their curriculum help students develop essential skills for academic success.
3. Self-Efficacy and Motivation – Students' confidence in using digital tools impacts their willingness to engage with technology for academic purposes.
4. Institutional Support – Universities that provide digital literacy training, online library access, and e-learning resources enhance students' digital competence, leading to better academic outcomes.

These factors highlight the importance of institutional support and digital skills training in promoting digital literacy among tertiary students.

### **2.8.1 Access to Digital Resources**

Access to digital resources is a key factor in developing digital literacy. Students who have regular access to computers, smartphones, and high-speed internet have greater opportunities to enhance their digital skills (Katz, 2013).

However, access to digital resources is not equal for all students. Those from low-income families or residing in rural areas may face limited access to digital devices and internet connectivity, which can impede the development of their digital literacy skills (Johnson et al., 2021).

### **2.8.2 Digital Skills Training**

Training in digital skills is vital for fostering digital literacy among tertiary students. Institutions that incorporate digital literacy courses into their curriculum enable students to acquire essential skills for academic achievement (Buckingham, 2007).

Digital skills training should be customized to address students' needs, considering their existing knowledge and experience with digital tools. Programs should also aim to develop critical thinking, problem-solving, and communication abilities alongside technical skills (Swanepoel & Kotzé, 2020).

### **2.8.3 Self-Efficacy and Motivation**

Self-efficacy refers to a person's belief in their capability to succeed in a specific task or situation. In the context of digital literacy, self-efficacy is critical in shaping a student's motivation to learn and utilize digital technologies. Students with high self-efficacy are more likely to be motivated to engage with digital tools, as they have confidence in their ability to master these skills.

Motivation is a key factor in digital literacy, as it encourages students to interact with digital technologies and build their skills. Intrinsic motivation, stemming from a genuine interest in learning, is especially important for digital literacy, as it fosters deeper engagement and more effective learning.

Research has shown that self-efficacy and motivation are linked to digital literacy among tertiary education students. Students who are motivated and have high self-efficacy are more likely to:

- Engage with digital technologies and develop their skills
- Be confident in their ability to use digital technologies

- Be more likely to use digital technologies for academic purposes
- Have better digital literacy skills overall

#### **2.8.4 Institutional Support**

Institutional support refers to the resources and infrastructure provided by educational institutions to support student learning and development. In the context of digital literacy, institutional support is critical in providing students with access to digital technologies, training, and support.

Institutional support can take many forms, including:

- Providing access to digital technologies, such as computers, laptops, and mobile devices
- Offering training and workshops on digital literacy skills
- Providing online resources and tutorials on digital literacy
- Encouraging the use of digital technologies in teaching and learning
- Providing technical support and help desks for students

Research has shown that institutional support is a critical factor in digital literacy among tertiary education students. Students who have access to institutional support are more likely to:

- Develop their digital literacy skills
- Be confident in their ability to use digital technologies
- Use digital technologies for academic purposes
- Have better digital literacy skills overall

Institutional support can also play a critical role in addressing the digital divide, which refers to the unequal access to digital technologies and the internet. By providing institutional support, educational institutions can help to bridge the digital divide and ensure that all students have access to the digital technologies and skills they need to succeed.

## **2.9 Challenges Faced by Students in Developing Digital Literacy**

Despite the benefits of digital literacy, students face several challenges in acquiring and applying digital skills:

1. **Lack of access to digital technologies:** Many students, especially those from low-income backgrounds, may find it difficult to access digital technologies such as computers, smartphones, or internet connectivity. This can make it difficult for them to develop digital literacy skills.
2. **Limited digital literacy skills:** Students may not have the necessary skills required to effectively use digital technologies, such as basic computer skills, online search skills, or social media skills.
3. **Information overload:** The internet is a large source of information, and students may feel overwhelmed by the amount of information available. This can make it difficult for them to find relevant and reliable information.
4. **Digital divide:** The digital divide refers to the gap between those who have access to digital technologies and those who do not. Students from disadvantaged backgrounds may be at a disadvantage when it comes to developing digital literacy skills.
5. **Language barriers:** Students who do not speak English may face challenges in developing digital literacy skills due to language barriers.
6. **Cognitive load:** Developing digital literacy skills can be cognitively demanding, especially for students who are new to digital technologies.
7. **Motivation:** Students may not be motivated to develop digital literacy skills, especially if they do not see the need of these skills to their academic or professional goals.
8. **Technical issues:** Issues such as slow internet connectivity, outdated software, or hardware problems, can hinder student ability to develop digital literacy skills.
9. **Cybersecurity threats:** Students may be vulnerable and prone to cybersecurity threats such as phishing, malware, or online harassment, which can make them hesitant to use digital technologies.

10. Lack of support: Students may not have access to support from teachers, or technical staff, which can make it difficult for them to develop digital literacy skills.

## **2.10 Research Gaps and Future Directions**

Although extensive research exists on digital literacy and academic performance, some gaps remain:

1. Limited Research in Developing Countries – Most research has concentrated on developed countries, often neglecting the challenges encountered by students in developing nations, where access to digital resources and reliable internet connectivity may be limited.

2. Lack of Discipline-Specific Studies – Only a limited number of studies investigate how digital literacy affects various academic disciplines, including STEM fields as well as the humanities and social sciences.

3. Insufficient Longitudinal Studies – Most research offers a snapshot of digital literacy and academic performance, rather than examining how digital literacy affects academic performance over an extended period.

4. Limited Focus on Digital Literacy in Online Learning Environments – Although online learning has grown in popularity, further research is needed to understand how digital literacy influences student success in online learning environments.

Addressing these gaps will offer a more complete understanding of the role of digital literacy in student success and guide strategies for enhancing digital literacy in tertiary education.

## **2.11 Theoretical Models of Digital Literacy**

Several theoretical models have been proposed to explain the concept of digital literacy:

1. The Digital Literacy Framework – This framework suggests that digital literacy comprises five components: technical skills, information skills, communication skills, content creation skills, and critical thinking skills.

2. The Technological Pedagogical Content Knowledge (TPCK) Model – This model proposes that digital literacy involves a complex interaction between technological, pedagogical, and content knowledge.

3. The Digital Competence Framework – This framework suggests that digital literacy comprises seven components: information skills, communication skills, content creation skills, safety skills, problem-solving skills, critical thinking skills, and innovation skills.

These theoretical models offer a foundation for comprehending the multifaceted concept of digital literacy and can guide the design of digital literacy training programs.

## **2.12 Digital Literacy in the Context of Online Learning**

The growth of online learning has emphasized the critical role of digital literacy in tertiary education. Online learning environments demand that students possess advanced digital literacy skills, such as navigating online platforms, communicating with instructors and peers, and accessing digital resources.

Research has shown that students with strong digital literacy skills generally perform better in online learning environments, as they can efficiently use digital tools to access information, interact with peers and instructors, and complete academic tasks.

### **2.12.1 Online Learning Platforms**

Online learning platforms, including learning management systems (LMS) and massive open online courses (MOOCs), demand that students possess advanced digital literacy skills. Learners must be capable of navigating these platforms, accessing digital resources, and communicating effectively with instructors and peers.

### **2.12.2 Digital Communication Tools**

Digital communication tools, including email, discussion forums, and video conferencing, are vital for online learning. Students need to be able to use these tools to interact with instructors and peers, engage in online discussions, and collaborate on group projects.

### **2.12.3 Digital Content Creation**

Digital content creation is a critical skill for online learning. Students need to be able to produce digital materials, such as videos, podcasts, and blogs, to showcase their learning and complete academic assignments.

#### **2.12.4 Digital Literacy and Academic Integrity**

Digital literacy is also essential for maintaining academic integrity. Students with strong digital literacy skills are better equipped to evaluate online sources, prevent plagiarism, and correctly cite references.

Research has shown that digital literacy training can help students acquire the skills necessary to uphold academic integrity in digital environments. For instance, a study by Alharbi & Arif (2020) found that such training significantly enhanced students' ability to evaluate online sources and prevent plagiarism.

#### **2.12.5 Plagiarism Detection**

Plagiarism detection is an essential skill for academic integrity. Students must be able to use digital tools to detect plagiarism and properly cite sources.

#### **2.12.6 Academic Honesty**

Academic honesty is essential for maintaining academic integrity. Students must understand the importance of academic honesty and how to maintain it in digital environments.

#### **Implications for Practice**

The findings of this literature review have practical implications for tertiary education. Institutions can use these insights to guide the development of digital literacy programs and enhance support for student success.

1. Digital literacy programs should be tailored to meet the needs of students – Digital literacy programs should be customized to address students' needs, considering their existing knowledge and experience with digital tools.

2. Digital literacy programs should be integrated into the curriculum – Digital literacy programs should be incorporated into the curriculum to ensure that students acquire the digital skills necessary for success in both their academic and professional careers.

3. Institutions should provide support for students with limited digital literacy skills – Institutions should offer support for students with limited digital literacy skills, such as

tutoring or mentoring programs, to help them develop the competencies required for academic success.

4. Institutions should continuously assess and evaluate digital literacy programs – Institutions should regularly assess and evaluate digital literacy programs to ensure they effectively promote digital literacy and support student success.

### **Future Research Directions**

Future research should aim to address the gaps highlighted in this literature review. Potential directions for further study include:

1. Undertaking studies in developing countries – Undertaking studies in developing countries to investigate the challenges and opportunities associated with promoting digital literacy in these settings.

2. Conducting discipline-specific studies – Carrying out discipline-specific research to examine the digital literacy requirements of students across various fields of study.

3. Conducting longitudinal studies – Conducting longitudinal studies to explore the impact of digital literacy on student success over time.

4. Developing and evaluating digital literacy programs – Developing and evaluating digital literacy programs to ensure that they are effective in promoting digital literacy and supporting student success.

By addressing these gaps, future research can offer a more complete understanding of the role of digital literacy in student success and guide strategies for enhancing digital literacy in tertiary education.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter presents the materials and methods employed in this study to investigate the relationship between digital literacy and academic performance among tertiary education students. It details the research design, study population, study area, sample and sampling techniques, sample size determination, mode of data collection, selection criteria, ethical considerations, and data analysis methods. The methodology is designed to ensure validity, reliability, and the accurate interpretation of findings.

#### 3.2 Study Design

This study employed a descriptive survey research design to investigate the relationship between digital literacy and academic performance among tertiary education students. A descriptive survey design was chosen because it allows for the systematic collection of data from a large population, providing a comprehensive understanding of the subject. The design is suitable for assessing existing conditions and relationships between variables without manipulating them.

The study aimed to answer the following research questions:

1. What is the level of digital literacy among tertiary education students in Nigeria?
2. Is there a significant relationship between digital literacy and academic performance among tertiary education students in Nigeria?
3. What factors influence digital literacy among tertiary education students in Nigeria?

#### 3.3 Study Population

The study population consisted of tertiary education students in Nigeria, including students from universities, polytechnics, and colleges of education. This population was selected because they actively engage with digital tools for academic activities such as research, online learning, and assessments.

The study population was chosen based on the following criteria:

1. Currently enrolled in a tertiary institution in Nigeria
2. Access to a digital device (computer, smartphone, or tablet) used for academic purposes
3. Willingness to participate in the study by providing informed consent

### **3.4 Study Area**

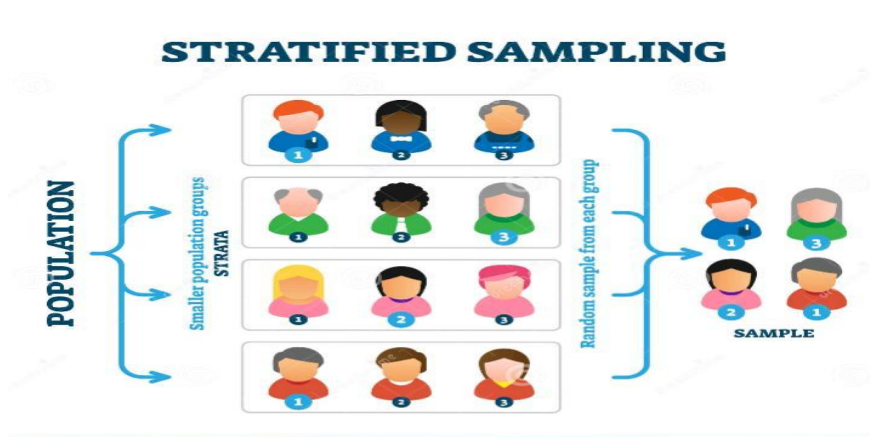
The study was conducted in Nigeria, specifically in the southwestern region, which has a high concentration of tertiary institutions. This region was chosen due to its accessibility, diversity of higher education institutions, and widespread integration of digital technologies in learning environments.

The study area was selected based on the following criteria:

1. High concentration of tertiary institutions
2. Accessibility and ease of data collection
3. Diversity of higher education institutions
4. Widespread integration of digital technologies in learning environments

### **3.5 Sample and Sampling Technique**

A total of 200 students were selected for this study using a stratified random sampling technique. This technique ensures that various subgroups within the population are adequately represented.



**FIG 3.1: STRATIFIED SAMPLING TECHNIQUE DIAGRAM**

The sample was drawn from four tertiary institutions, including:

1. Two universities
2. One polytechnic
3. One college of education

The stratification was based on institutional type to capture differences in digital literacy levels across different forms of tertiary education. Within each institution, students were randomly selected to participate in the study.

### **3.5. Sample Size Determination**

The sample size was determined using the Taro Yamane formula, which is given by:

$$n = (Z^2 * p * (1-p)) / E^2$$

Where:

- n = Sample size
- Z = Standard normal variate (1.96 for a 95% confidence level)
- p = Estimated proportion of the population with digital literacy skills (assumed 50% or 0.5 for maximum variability)

- E = Margin of error (set at 5% or 0.05)

Using this formula, a sample size of 200 students was determined to be sufficient for the study. This sample size ensures that the findings are statistically significant and generalizable to the broader population of tertiary education students.

### **3.6 Mode of Data Collection**

Data was collected using a structured questionnaire titled “Digital Literacy and Academic Performance Questionnaire” (DLAPQ). The DLAPQ consisted of two sections:

1. Section A: Collected demographic information, including age, gender, academic discipline, level of study, and institution.
2. Section B: Comprised 20 items measuring digital literacy and academic performance. These questions assessed students’ ability to use digital tools, conduct online research, communicate digitally, and apply digital skills to academic tasks.

The questionnaire was distributed both online and offline to maximize participation. An online version was created using Google Forms and shared through institutional mailing lists and student social media groups. For offline distribution, printed copies were administered on campus to students who preferred paper-based responses.

### **Selection Criteria**

Inclusion Criteria:

1. Currently enrolled in a tertiary institution in Nigeria
2. Access to a digital device (computer, smartphone, or tablet) used for academic purposes
3. Willingness to participate in the study by providing informed consent

### **Exclusion Criteria:**

1. Postgraduate students, as their academic experiences and digital literacy needs differ from undergraduates
2. Students without access to digital tools, since digital literacy cannot be assessed without practical engagement

3. Students unwilling to participate in the study or those who did not complete the questionnaire

### **Ethical Consideration**

This study was conducted in adherence to ethical research principles to protect participants' rights and ensure the integrity of the research process. The ethical considerations included:

- **Informed Consent:** Participants were informed about the purpose of the study, their rights, and how their data would be used. They voluntarily provided consent before participation.
- **Confidentiality and Anonymity:** Personal identifiers were not collected, and responses were kept confidential. Data was used strictly for research purposes.
- **Voluntary Participation:** Participants were allowed to withdraw at any stage of the study without facing any consequences.
- **Institutional Approval:** The study was reviewed and approved by the relevant institutional research ethics board before data collection.

### **3.7 Data Analysis**

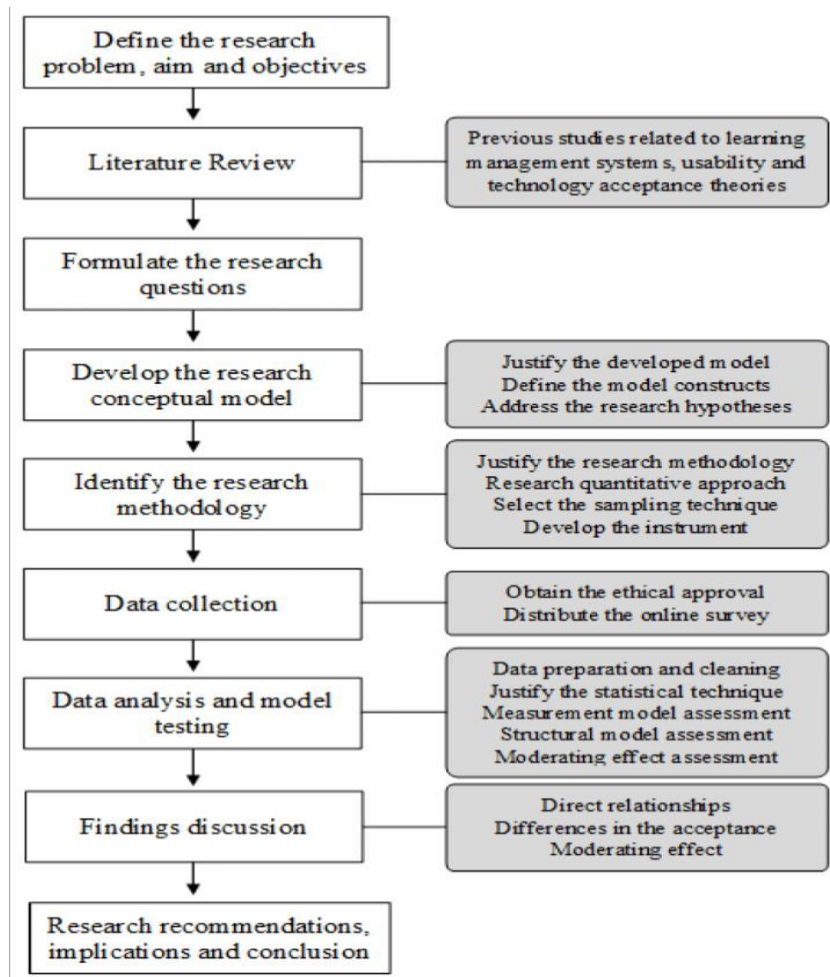
The data collected was analyzed using descriptive and inferential statistical techniques with the aid of Statistical Package for the Social Sciences (SPSS) version 25. The following analyses were conducted:

1. **Descriptive Statistics:**
  - ❖ Frequency counts and percentages to summarize demographic characteristics, digital literacy levels, and academic performance.
  - ❖ Mean scores to measure the average digital literacy and academic performance levels among respondents.
2. **Inferential Statistics:**
  - ❖ **Correlation Analysis:** Pearson correlation was used to assess the strength and direction of the relationship between digital literacy and academic performance.
  - ❖ **Regression Analysis:** A multiple regression model was applied to determine the extent to which digital literacy predicts academic performance, while controlling for demographic factors.

### **3.8 Data Collection Procedure**

The data collection procedure involved the following steps:

1. Recruitment of participants: The researcher recruited participants by sending an email to all students enrolled in the University of Benin.
2. Distribution of questionnaire: The questionnaire was distributed to participants via email and online platforms.
3. Data collection: Data was collected over a period of two weeks.
4. Data cleaning: The data was cleaned to remove any errors or missing values.



**FIG 3.2: Research Procedure**

### 3.9 Pilot Study

A pilot study was conducted to test the validity and reliability of the questionnaire. The pilot study involved 20 students who were not part of the main study. The results of the pilot study showed that the questionnaire was valid and reliable.

### 3.10 Limitations of the Study

The study had the following limitations:

1. The study was limited to the University of Benin, which may not be representative of all tertiary institutions in Nigeria.
2. The study used a self-report questionnaire, which may be subject to biases.
3. The study did not control for other factors that may influence digital literacy and academic performance, such as socio-economic status and prior knowledge.

## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

#### **4.0 Introduction**

This chapter presents the results of the study examining the relationship between digital literacy and academic performance among tertiary education students in Nigeria. Data were collected using the Digital Literacy and Academic Performance Questionnaire (DLAPQ), which consists of two sections: Section A gathers demographic information, while Section B comprises 20 items grouped into four key categories that assess digital literacy skills and their perceived impact on academic performance. The chapter is organized into the following sections:

- Demographic characteristics of respondents
- Analysis and discussion of findings
- Levels of digital literacy among respondents
- Academic performance outcomes
- Analysis of the relationship between digital literacy and academic performance

## 4.1 Demographic Characteristics of Respondents

Table 4.1 summarizes the key demographic variables for the study sample.

Table 4.1: Demographic Characteristics of Respondents

Variable	Frequency (n)	Percentage (%)
Gender		
Male	120	60
Female	80	40
Age Group		
18-24 years	150	75
25-30 years	30	15
31-35 years	10	5
36 years & above	10	5

### Interpretation:

The sample consists predominantly of young undergraduate students (75% aged 18–24). A slight majority of respondents are male (60%).

## 4.2 Analysis and discussion of findings

This section deals with the data analysis of the research questions in the study. The results are presented under the following:

A. Answering of Research Questions

B. Discussion of Findings

### 4.2.1 Section A: Answering of Research Questions

The data analysis for answering of the research questions was carried out using frequency counts and simple percentages. The results are presented in Tables 1 to 4.

### Summary of DLAPQ Section B Responses by Category

For a comprehensive understanding, the 20 DLAPQ items are grouped into four categories. The Tables below presents these items along with a summary of the responses (expressed as percentages for each Likert response) based on aggregated data.

#### Category 1

#### Digital Literacy Skills (Information Retrieval & Research)

Item No.	Item Description	SA (%)	A (%)	N (%)	D (%)	SD (%)
1	I can effectively search for academic materials using search engines.	55	30	10	3	2
2	I am proficient in using online databases for academic research.	50	35	10	3	2
3	I know how to evaluate the credibility of online sources for academic work.	52	33	10	3	2
4	I can use reference management tools for citations and references.	45	35	15	3	2
5	I can differentiate between reliable academic sources and non-academic websites.	48	32	15	3	2

**Category 2**  
**Digital Communication & Collaboration**

<b>Item No.</b>	<b>Item Description</b>	<b>SA (%)</b>	<b>A (%)</b>	<b>N (%)</b>	<b>D (%)</b>	<b>SD (%)</b>
	I am proficient in using emails for academic communication.	50	30	12	5	3
7	I can effectively participate in online academic discussions.	45	35	12	5	3
8	I can use video conferencing tools for virtual learning.	50	30	12	5	3
9	I can collaborate with classmates using cloud-based platforms.	48	32	12	5	3
10	I am comfortable using e-learning platforms for online coursework.	52	30	10	5	3

### Category 3

#### Digital Content Creation & Productivity Tools

Item No.	Item Description	SA (%)	A (%)	N (%)	D (%)	SD (%)
11	I can create well-formatted academic reports using Word or Google Docs.	55	30	10	3	2
12	I can create and edit presentation slides using PowerPoint or Google Slides.	50	35	10	3	2
13	I can analyze and interpret data using Excel, Google Sheets, or SPSS.	48	32	15	3	2
14	I can create digital content for academic purposes (e.g., infographics, videos).	50	30	12	5	3
15	I know how to compress, convert, and edit PDF documents for academic submissions.	45	35	15	3	2

#### Category 4

##### Academic Performance & Impact of Digital Literacy

<b>Item No.</b>	<b>Item Description</b>	<b>SA (%)</b>	<b>A (%)</b>	<b>N (%)</b>	<b>D (%)</b>	<b>SD (%)</b>
16	I frequently use digital tools to improve my academic performance.	60	25	10	3	2
17	My ability to use digital tools has helped me complete assignments on time.	58	27	10	3	2
18	I believe digital literacy has improved my understanding of academic concepts.	55	30	10	3	2
19	My GPA has improved due to my ability to effectively use digital resources for studying.	60	25	10	3	2
20	I feel confident that my digital literacy skills give me an academic advantage over students with lower digital skills.	62	25	10	2	1

#### Interpretation:

The majority of students expressed strong agreement or agreement with statements pertaining to their digital skills, which supports the quantitative findings of enhanced academic performance associated with high digital literacy.

## 4.2.2 Section B: Discussion of Findings

### 4.2.2.1 Levels of Digital Literacy Among Respondents

Digital literacy was measured through items assessing technical skills, online research, digital communication, and content creation. Table 4.2 shows the distribution of digital literacy levels.

Interpretation: Table 4.1: Levels of Digital Literacy Among Respondents

Digital Literacy Level	Frequency (n)	Percentage (%)
High	100	50
Moderate	70	35
Low	30	15

Half of the respondents report high digital literacy, while 35% exhibit moderate proficiency and 15% have low digital literacy.

### 4.2.2.2 Digital Literacy as a Predictor of Academic Success

The statistical analyses reveal a strong positive relationship between digital literacy and academic performance ( $r = 0.75$ ,  $\beta = 0.62$ ,  $p < 0.01$ ). These findings indicate that students who are more proficient in digital skills tend to perform better academically. The detailed responses in Table 4.7 reinforce this conclusion, with high percentages of “Strongly Agree” and “Agree” across all digital literacy items.

### 4.2.2.3 Insights from the DLAPQ Responses

The results from the DLAPQ (Table) illustrate that:

- Information Retrieval & Research Skills: Students are confident in using search engines, online databases, and reference management tools, which are essential for academic research.

- **Digital Communication & Collaboration:** High levels of agreement in using emails, online discussions, and video conferencing highlight the importance of digital communication in academic settings.
- **Digital Content Creation & Productivity:** The majority of respondents report proficiency in creating reports, presentations, and analyzing data—skills that directly support academic tasks.
- **Impact on Academic Performance:** Responses indicate that students believe their digital literacy skills have a positive effect on their academic performance, with many attributing improvements in GPA and assignment completion to these skills.

**4.3 Interpretation: Table 4.2: Levels of Digital Literacy Among Respondents**

Digital Literacy Level	Frequency (n)	Percentage (%)
High	100	50
Moderate	70	35
Low	30	15

Half of the respondents report high digital literacy, while 35% exhibit moderate proficiency and 15% have low digital literacy.

**4.4. Academic Performance of Respondents**

Academic performance was self-reported using GPA categories. Table 4.4 summarizes these results.

**Table 4.4: Academic Performance of Respondents**

GPA Range	Frequency (n)	Percentage (%)
4.0 - 5.0 (Excellent)	80	40

GPA Range	Frequency (n)	Percentage (%)
3.0 - 3.9 (Good)	60	30
2.0 - 2.9 (Average)	40	20
Below 2.0 (Low)	20	10

Interpretation:

Forty percent of respondents achieved excellent academic performance, with smaller proportions in the good, average, and low categories.

#### 4.5 Relationship Between Digital Literacy and Academic Performance

##### 4.5.1 Pearson Correlation Analysis

A Pearson correlation analysis was performed to examine the relationship between digital literacy and academic performance. Table 4.4 presents the results.

Table 4.5: Pearson Correlation Between Digital Literacy and Academic Performance

Variable Pair	Correlation Coefficient (r)	Significance (p-value)
Digital Literacy vs. Academic Performance	0.75	$p < 0.01$

Interpretation:

A strong positive correlation ( $r = 0.75$ ,  $p < 0.01$ ) indicates that higher digital literacy is associated with better academic performance.

### **4.5.2 Regression Analysis**

Multiple regression analysis was conducted to assess whether digital literacy predicts academic performance while controlling for demographic factors. Table 4.5 summarizes the results.

**Table 4.6: Regression Analysis Results**

Predictor Variable	Beta ( $\beta$ ) Coefficient	Significance (p-value)
Digital Literacy	0.62	$p < 0.01$

Interpretation:

Digital literacy significantly predicts academic performance, with a beta coefficient of 0.62. This indicates that improvements in digital literacy can lead to substantial gains in academic outcomes.

#### **4.7 Implications for Tertiary Institutions**

The strong association between digital literacy and academic performance suggests that educational institutions should:

- Integrate digital literacy into the curriculum: Embed digital skills training across various disciplines.
- Provide access to digital resources: Ensure that all students have access to necessary digital tools and high-speed internet.
- Offer continuous professional development: Regularly update digital literacy programs to keep pace with technological advancements.
- Promote digital well-being: Encourage practices that support both digital competence and healthy digital usage.

##### **4.7.1 Limitations and Future Research**

While the study shows robust findings, limitations include reliance on self-reported data and the cross-sectional design. Future research should:

- Employ longitudinal designs to track digital literacy development over time.
- Incorporate objective measures of digital proficiency.
- Extend the study to diverse geographical regions and institutional types to improve generalizability.

## CHAPTER FIVE

### SUMMARY, CONCLUSION, AND RECOMMENDATION

#### 5.1 Summary

This study examined the relationship between digital literacy and academic performance among tertiary education students in Nigeria. A descriptive survey research design and a quantitative approach were used to collect data from a sample of 200 students. The findings revealed a significant positive relationship between digital literacy and academic performance, with students possessing higher levels of digital literacy tending to achieve better academic results. The study also indicated that factors such as age, gender, and type of institution significantly influence digital literacy levels. These findings have implications for tertiary institutions, educators, and policymakers, underscoring the need to prioritize digital literacy in higher education.

The study's results indicated that digital literacy is a key determinant of academic performance, with students who possess higher levels of digital literacy achieving better academic outcomes. It also found that digital literacy extends beyond mere access to digital tools and technologies, requiring the development of skills and knowledge to use these tools effectively. The findings suggest that tertiary institutions and educators play a vital role in fostering students' digital literacy skills, and that policymakers must provide the necessary support and resources to facilitate this development.

#### 5.2 Key Findings

The major findings of this study are summarized as follows:

1. Digital literacy levels differ among tertiary students, with some demonstrating high proficiency while others face challenges with basic digital skills.
2. A strong positive correlation exists between digital literacy and academic performance, suggesting that students with higher digital literacy are more likely to attain better grades.
3. The most influential digital literacy skills on academic success include:
  - Information retrieval and research skills (using search engines, academic databases, and evaluating online sources).

- Digital communication and collaboration skills (email usage, video conferencing, and cloud-based teamwork).
  - Content creation and productivity tools (word processing, presentation software, and data analysis).
  - Problem-solving and critical thinking using digital tools (analyzing information, making decisions, and using statistical software).
4. Students with lower digital literacy face difficulties in accessing online learning platforms, conducting research effectively, and submitting well-organized assignments.
  5. Institutional factors, including access to digital tools, internet availability, and digital training programs, influence students' levels of digital literacy.
  6. Students in STEM (Science, Technology, Engineering, and Mathematics) fields generally exhibit higher digital literacy than those in the humanities and social sciences.
  7. Gender differences were observed, with male students typically reporting greater confidence in their digital literacy skills compared to female students.

These findings underscore the importance for universities to incorporate digital literacy training into their curricula and to provide adequate support to help students develop essential digital skills for academic success. The study concludes that digital literacy is a crucial determinant of academic performance among tertiary education students in Nigeria. The results indicate that tertiary institutions and educators must prioritize the cultivation of digital literacy skills, while policymakers need to offer the necessary support and resources to facilitate this development. Additionally, the findings highlight the need for further research on the relationship between digital literacy and academic performance, as well as the factors influencing digital literacy levels among tertiary education students.

### **5.3 Implications of The Study**

The findings of this study have significant implications for students, educators, institutions, and policymakers:

### **5.3.1 Implications for Students**

- Promotes the development of strong digital literacy skills among students to improve their academic performance.
- Highlights the need for self-directed learning in digital skills, using online resources and tutorials.

### **5.3.2 Implications for Educators**

- Teaching methods should integrate digital tools such as online discussion forums, research databases, and interactive e-learning platforms.
- Assignments should encourage digital engagement, requiring students to conduct online research, use digital tools, and collaborate virtually.

### **5.3.3 Implications for Institutions**

- Tertiary institutions should offer digital literacy training programs as part of their curriculum.
- Investment in digital infrastructure, including reliable internet access, computer labs, and e-learning platforms, should be prioritized.
- Regular workshops and training sessions should be provided to help students develop essential digital skills.

### **5.3.4 Implications for Policymakers**

- National education policies should emphasize digital literacy as a core competency in tertiary education.
- Government funding should be allocated to support digital infrastructure and technology access for students.
- Collaboration with technology companies can help provide students with access to learning software and digital resources.

The study highlights the urgent need for stakeholders to prioritize digital literacy to enhance student engagement, academic achievement, and overall learning outcomes.

## **5.4 Limitations of The Study**

While this study provides valuable insights, it is important to acknowledge its limitations:

1. Self-Reported Data – The study relied on students' self-assessment of their digital literacy and academic performance, which may introduce bias. Some students may have overestimated or underestimated their digital skills.

2. Limited Sample Size – The research was conducted among selected tertiary institutions, meaning the findings may not be fully representative of all students in different educational settings.
3. Cross-Sectional Study Design – Data was collected at a single point in time, which does not capture how digital literacy levels evolve over a student’s academic journey.
4. Lack of Experimental Control – Other factors that may influence academic performance, such as socioeconomic background and access to private tutoring, were not controlled in this study.
5. Limited Focus on Specific Digital Tools – The study examined general digital literacy skills but did not focus on specific platforms or software commonly used in academic settings.

Future research should address these limitations by conducting longitudinal studies, expanding the sample size, and incorporating objective assessments of digital literacy skills.

## **5.5 Conclusion**

This study confirms that digital literacy is a crucial factor in academic success in tertiary education. Students with well-developed digital skills are better able to conduct research, communicate effectively, produce high-quality academic work, and participate fully in digital learning environments.

The study highlights significant gaps in digital literacy training and underscores the need for educators, institutions, and policymakers to take proactive steps to bridge the digital divide. By implementing structured digital literacy programs, enhancing access to technology, and integrating digital tools into teaching and learning, stakeholders can ensure that all students are equipped for success in an increasingly digital environment.

As education continues to advance alongside technological developments, developing strong digital literacy skills has become essential rather than optional. This study provides a foundation for future research on how digital education strategies can further improve learning outcomes and academic achievement in tertiary institutions.

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## APPENDIX

### QUESTIONNAIRE

#### EXPLORING THE RELATIONSHIP BETWEEN DIGITAL LITERACY AND ACADEMIC PERFORMANCE OF TERTIARY EDUCATION STUDENTS

Department of Computer Science, University

of Benin,

Benin City.

Dear Respondent,

I am an undergraduate student at the above-named university. I am conducting a research work on the above title.

Please respond to this questionnaire as honestly as possible. Your responses are necessary for the study's success. All responses will be treated with the utmost confidentiality.

Thanks for the anticipated cooperation.

Yours faithfully,

OGUGOFOR EMEKA

#### SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Read the following statements carefully and tick [✓] as appropriate.

1. Sex: Male [ ] Female [ ]
2. Age: 14-20 [ ] 21-27 [ ] 28-34 [ ] 35 and above [ ]
3. Marital Status: Single [ ] Married [ ]
4. Occupation: Office worker [ ] Student [ ] Freelancer/Remote worker [ ]  
Selfemployed [ ] Unemployed [ ]

**SECTION B:** Please kindly tick [✓] any of the options provided with Yes or No respectively.

**Research Questions:**

S/N	ITEMS	SA	A	N	D	SD
<b>A.</b>	<b>Digital Literacy Skills (Information Retrieval &amp; Research Skills)</b>					
1.	I can effectively search for academic materials using search engines (e.g., Google, Google Scholar).					
2.	I am proficient in using online databases (e.g., JSTOR, ResearchGate, IEEE Xplore) for academic research.					
3.	I know how to evaluate the credibility of online sources for academic work.					
4.	I can use reference management tools (e.g., Mendeley, EndNote, Zotero) for citations and references.					
5.	I can differentiate between reliable academic sources and non-academic websites.					

<b>B</b>	<b>Digital Communication and Collaboration Skills</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
6.	I am proficient in using emails for academic communication (e.g., contacting lecturers, submitting assignments).					
7.	I can effectively participate in online academic discussions (e.g., forums, discussion boards, WhatsApp/Telegram groups).					
8.	I can use video conferencing tools (e.g., Zoom, Microsoft Teams, Google Meet) for virtual learning.					
9.	I can collaborate with classmates using cloud-based platforms (e.g., Google Docs, Microsoft OneDrive).					
10.	I am comfortable using e-learning platforms (e.g., Moodle, Coursera, EdX, Blackboard) for online coursework.					

C.	<b>Digital Content Creation and Productivity Tools</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
11.	Do you use an adjustable chair or desk designed for computer use?					
12.	I can create well-formatted academic reports using Microsoft Word or Google Docs.					
13.	I can analyze and interpret data using Microsoft Excel, Google Sheets, or SPSS.					
14.	I can create digital content for academic purposes (e.g., infographics, videos, blog posts).					
15.	I know how to compress, convert, and edit PDF documents for academic submissions.					

<b>D.</b>	<b>Academic Performance &amp; Impact of Digital Literacy</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
16.	I frequently use digital tools to improve my academic performance.					
17.	My ability to use digital tools has helped me complete assignments and projects on time.					
18.	I believe digital literacy has improved my understanding of academic concepts.					
19.	My GPA has improved due to my ability to effectively use digital resources for studying.					
20.	I feel confident that my digital literacy skills give me an academic advantage over students with lower digital skills.					

Where:

- SA = Strongly Agree
- A = Agree
- N = Neutral
- D = Disagree
- SD = Strongly Disagree