# Chapter One

# Introduction

## 1.1 Background to the Study

As education continues to change swiftly, the use of digital tools is growing, reshaping the ways learners find and interact with knowledge. Not only has the advent of digital learning environments transformed the way education is delivered, but it has also sparked debate regarding how they affect students' academic achievement[1]. Academic achievement in Business Education plays a vital role not only in the success of individual students but also in driving entrepreneurial capacity and socio-economic development. Business education equips learners with the managerial, financial, and digital skills needed to identify and exploit business opportunities, fostering self-employment and reducing unemployment[2]. This is particularly important in Nigeria, where unemployment among tertiary institution graduates remains a significant challenge [3]. It comprises various courses including accounting, office technology, entrepreneurship, business communication and Marketing. In order to improve students' practical comprehension and preparedness for real-world business challenges, Principle of Marketing exposes them to the principles of marketing strategy, customer behaviour, and marketing analysis.

Despite graduating with theoretical knowledge, many students struggle to transit into the labour market due to limited practical exposure and poor digital literacy. Business education students in public universities seem to lack access to adequate digital resources and training, which could impair their capacity to perform competitively in today's technology-driven economy[5]. Academic achievement in this field is therefore a critical determinant of students' employability

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and entrepreneurial readiness [6&7]. Strengthening business education through enhanced digital literacy and the effective use of e-learning technologies is indispensable for improving students' academic achievement and equipping them to contribute meaningfully to national development. Academic achievement reflects the level of success demonstrated by learners or schools in meeting their learning goals, whether short-term or long-term. Education serves as a powerful force driving improvements in social stability, economic growth, quality of life, and general welfare within a country[8].

Academic achievement indicates how far a learner or academic institution has progressed in meeting educational targets set over a brief or extended period[9]. A student's academic achievement holds significance for both the learner and the institution, as it reveals the standard and depth of growth attained over time[10]. Academic achievement is closely linked to the ongoing pursuit of advancing educational quality and scholarly inquiry. It stands as a key marker of how well educational systems and learners perform globally. This progress is often gauged through metrics such as exam results, grade performance, course completion rates, and the strengthening of intellectual abilities. Enhancing academic achievement remains a central focus for educators and decision-makers, given its influence on learners' long-term prospects and its contribution to societal growth[11].

In Nigeria, concerns about academic achievement in higher education have intensified due to inconsistent student performance and systemic limitations within the education[12]. Academic achievement is influenced by a variety of elements, including intelligence, adaptability, self-esteem, self-concept, sense of time, relationships with peers, family, the home and school environments, and motivation for achievement[13]. Other challenges such as overcrowded lecture

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halls, insufficient funding, outdated teaching methods, and limited access to textbooks and learning tools have undermined students' ability to attain high academic outcomes. The shift toward digital education, especially after the COVID-19 pandemic, exposed even more gaps in the system. Although the use of technology holds great potential for improving academic achievement, inconsistent implementation and a lack of digital literacy among students and lecturers have raised concerns about its effectiveness[13]. This digital literacy gap encompasses critical components such as cybersecurity awareness, information literacy, and technical skills, all which are essential to effectively engage with e-learning technologies and academic content. In the context of the principle of marketing, these skills are crucial for understanding digital marketing tools, analysing market data, and adapting to a fast-learning environment.

Technological progress has brought notable changes to many areas of society, with education experiencing some of the most profound shifts. In the current digital age, e-learning has become a key method for delivering and receiving instruction worldwide. This approach has reshaped how learning takes place, particularly within tertiary institutions. In Nigeria, the move toward incorporating e-learning into the academic space has accelerated, especially following the disruptions caused by the COVID-19 pandemic, which necessitated a rapid transition from face-to-face teaching to virtual learning environments[14]. Universities across the country began to adopt different e-learning strategies to ensure academic continuity. While this transition presented opportunities for innovation and flexibility, it also exposed significant challenges related to infrastructure, accessibility, and digital competence [15].

To grasp the development of e-learning, it is essential to trace its development alongside the emergence of the Internet and electronic communication. Over time, e-learning has undergone

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four major periods of development, each influenced by technological advancement and changing learning needs [16]. As a result, e-learning has gained increasing popularity not only in education but also in business and management due to its contributions to productivity and efficiency[17]. E-learning is essentially a web-driven approach that enables learners to gain access to educational content on demand, unhindered by distance or time limitations.[18]. Since its introduction in the late 1990s, it has evolved rapidly, offering students greater flexibility to learn at their own pace, manage their own schedules, and reduce the financial burden associated with traditional classroom learning. These features have made e-learning particularly appealing in educational systems worldwide, including Nigeria. Moreover, it promotes a student-centred approach, requiring active participation and engagement. The adoption of Learning Management Systems (LMS), video conferencing tools, and digital resources has further supported this shift toward e-learning. Despite these advantages, implementing e-learning is a complex process requiring not only information technology but also emotional intelligence, human resources, and systemic support[18]. As such, the process must be approached strategically to avoid negative consequences. While e-learning has emerged as an effective approach to expand educational reach, enhance adaptability, and promote active participation, its success still depends greatly on the digital readiness of both students and educators.[19].

For Business Education students, who are being prepared to operate in an increasingly digital and entrepreneurial world, the use of e-learning technologies should ideally enhance their learning experiences and academic achievement. However, this ideal is far from the reality on the ground. In numerous Nigerian universities, a significant number of business education students lack the skills and resources required to effectively engage in an e-learning

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environment[20]. Developing countries like Nigeria still struggle to maximize the benefits of e-learning because of expensive infrastructure and limited access to internet and ICT. In higher education, e-learning implementation remains difficult due to insufficient ICT facilities and socio-economic barriers. Many universities and colleges lack enough computers and specialized equipment for students, and most have yet to adopt advanced technologies like video conferencing[20].

The growing importance of e-learning in higher education underscores the need for strong digital literacy among students. While many Business Education students may be comfortable using digital tools for social interaction, their ability to utilize these tools for academic or professional purposes remains limited. This brings digital literacy into sharper focus as a core component of effective e-learning. Digital literacy involves more than just familiarity with gadgets; it includes Skill to effectively use and evaluate digital platforms, manage information efficiently, solve problems using technology, and protect personal data online[17].

For Business Education students, digital literacy is essential not just for academic success but also as a key skill needed for future careers in business, administration, and entrepreneurship. Yet, in many Nigerian public universities, students including those in business education continue to struggle with digital competence due to systemic inadequacies[21]. Issues such as poor internet connectivity, irregular power supply, high data costs, and limited access to devices continue to hinder meaningful engagement with e-learning platforms[22]. This digital divide has created disparities in academic performance, as students who lack access to essential resources are often left behind. Additionally, many institutions have failed to offer sufficient support or

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digital training for students, further exacerbating the challenges associated with online learning[23]. Inconsistent e-learning adoption across institutions, some embracing innovation while others remain stagnant only deepens the gap. Business Education, being a practical and dynamic field, especially suffers from this lack of uniform digital integration, as it requires interactive, hands-on, and collaborative learning experiences.

Despite the global shift toward digital education, there remains a noticeable gap in literature focusing specifically on how e-learning technologies and digital literacy affect academic achievement in Business Education programmes within Nigerian universities. Much of the existing research explores general education or focuses on other disciplines, leaving a void regarding Business Education. Understanding the relationship between these factors is essential in assessing the effectiveness of digital education for this field. Digital literacy has become a necessary skill not just for academic engagement but also for communication, collaboration, and future employability[18]. Advanced technologies are reshaping educational settings, and students today are engaging in various tech-enabled learning activities, using LMS platforms, accessing online resources, collaborating in digital spaces, and participating in online forums. As digital tools become central to the learning experience, research increasingly supports the view that digital literacy is fundamental for academic success[1].

This study therefore investigated two critical and interconnected factors e-learning technologies and digital literacy and their influence on academic achievement among Business Education students in public universities in Southwest Nigeria. While it is acknowledged that multiple variables contribute to academic achievement, this research narrows its focus to these two variables due to their increasing relevance in contemporary higher education.

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## 1.2 Statement of the Problem

Teaching and learning methods have been drastically changed by the incorporation of technology into education, and e-learning with its technologies has emerged as a crucial instrument for the delivery of instruction, especially in higher education. The COVID-19 pandemic in Nigeria hastened this change, leading universities to quickly switch from in-person to online learning. However, many structural issues were brought to light by this shift, particularly in public universities. These issues are especially troubling for business education, a field that aims to prepare students for jobs in the information-based and technologically advanced economy of today. Students studying business education are expected to have fundamental digital skills, such as the ability to communicate online, collaborate virtually, and use business-related technology including databases, spreadsheets, and presentation software. Many students encounter obstacles that prevent them from fully utilizing e-learning technology in spite of these expectations. These include inadequate digital literacy, restricted access to digital gadgets, and inadequate internet infrastructure. These difficulties impair their ability to acquire vital practical skills that are essential to both their academic achievement and employment in a technologically-driven global workforce.

Although the importance of digital competency in business education is becoming more widely acknowledged, students in Nigerian public universities still struggle with a persistent digital divide and insufficient institutional assistance. This presents significant questions regarding the calibre and applicability of business education in Nigeria's changing educational and economic environment. Success in school is still mostly determined by academic achievement. However, there is no adequate empirical data on the precise effects of e-learning technologies and digital

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literacy on business education students' academic achievement, especially in core courses like principles of marketing. Although previous studies have examined these issues in general education settings, few have focused on Business Education, a field that depends heavily on interactive and applied learning methods. This dearth of focused study creates a substantial knowledge gap.

This study addressed that gap by investigating how e-learning technologies and digital literacy influence the academic achievement in Principles of Marketing among Business Education students in Public Universities in Southwest, Nigeria. The research focused on practical indicators such as technologies usage, digital competence, and measurable student outcomes, with the goal of informing strategies that enhance the effectiveness and relevance of Business Education in the digital age.

### 1.3 Aim and Objectives of the Study

The Aim of this study was to investigate the influence of e-learning technologies and digital literacy on academic achievement of Business Education students in principle of marketing in Public Universities in Southwest, Nigeria. The objectives are to:

i. determine the level of academic achievement in Principles of Marketing among Business Education students in Public Universities in Southwest Nigeria
ii. determine the level of e-learning technologies of Business Education students with regards to academic achievement in Principles of Marketing in Public Universities in Southwest Nigeria.
iii. ascertain the level of digital literacy of Business Education students with regards to academic achievement in principles of marketing in Public Universities in Southwest Nigeria.

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iv. examine how e-learning technologies and digital literacy jointly influence the academic achievement of business education students in Public Universities in Southwest Nigeria.

v. assess how e-learning technologies and digital literacy relatively influence the academic achievement of business education students in Public Universities in Southwest Nigeria.

## 1.4 Research Questions

1. What is the level of academic achievement of Business Education students in Principles of Marketing in Public Universities in Southwest Nigeria?
2. What is the level of e-learning technologies among Business Education students in relation to their academic achievement in Principles of Marketing in Public Universities in Southwest Nigeria?
3. What is the level of digital literacy among Business Education students in relation to their academic achievement in Principles of Marketing in Public Universities Southwest Nigeria?

## 1.5 Hypotheses

$H_{01}$: There will be no significant combined influence of e-learning technologies and digital literacy on the Academic Achievement of Business Education students.

$H_{02}$: There will be no significant relative influence of e-learning technologies and digital literacy on the Academic Achievement of Business Education students.

## 1.6 Significance of the Study

This study holds significant relevance for various educational stakeholders, as it addresses the integration of e-learning technologies and digital literacy in Business Education. Specifically, it

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seeks to inform, guide and support key actors in the academic space navigating digital transformation effectively. For the Educational policy makers, it offers data-driven findings on the current level of digital readiness. This can guide policy development on digital inclusion, teacher training, and investment in educational technology. For University Administrators and School management, the study helps them understand what infrastructure, support, and resources are needed to promote effective use of e-learning technologies, it will also show the areas where institutions are falling short in digital literacy.

Curriculum designers benefits from this study by gaining a better understanding of how to redesign the Business Education curriculum to include digital skills, online collaboration, and technology-based teaching methods that meet global standards. For lecturers, the study provides practical ways to improve teaching using digital tools. It identifies the challenges they face in using technology and offers solutions to help them teach more effectively in a digital environment. Students benefits by gaining better access to digital tools that improve their learning. The study showed how digital literacy can help them become independent learners, improve their academic achievement, and prepare them for careers in a technology-driven economy. Finally, the study served as a valuable reference for future researchers interested in digital learning and Business Education. It adds to existing knowledge and opens up new areas for further research, especially within the Nigerian education context.

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### 1.7 Scope of the Study

This study focused on examining the relationship between e-learning technologies, digital literacy, and Academic Achievement among Business Education students in selected public universities in Southwest, Nigeria. It covers students enrolled in Business Education

programmed at both federal and state universities, assessing the availability, access to and use of e-learning technologies, their level of digital literacy, and how these factors influence their academic outcomes. The study was limited to undergraduate students and does not include postgraduate students or those from other academic disciplines. It primarily captured students' perspectives while referencing institutional conditions only where relevant to interpreting their experiences.

## 1.8 Limitation of the Study

The study encountered several challenges related to data collection through e-questionnaire. Due to limited access to participants, repeated follow ups with representatives were necessary which slowed down the data gathering process. Additionally, the study adopted a generalized framework to describe e-learning technologies and digital literacy practices, which may not capture the specific nuances of each institution. Despite these limitations, the findings deliver meaningful perspective into the overall influence of e-learning technologies and digital literacy on academic achievement of business education students in public universities, Southwest Nigeria.

## 1.9 Operational Definition of Terms

**E-learning technologies:** This means specific tools and platforms including Moodle, google classroom, educational apps that business education students in selected public universities report using or academic purposes.

**Availability of E-learning technologies:** This means business education students' responses to items assessing the presence of e-learning platforms and tools in the selected public universities.

**Accessibility of E-learning technologies:** This means business education students' reported ease of use and access to e-learning tools and platforms from the selected public universities.

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**Utilization of E-learning technologies:** This involves how effectively and frequently business education students in the selected public universities engage with the provided e-learning tools to support their academic achievement in principles of marketing.

**Digital Literacy:** This is business education student's ability in selected public universities to use digital tools, like smartphones, computers, or apps, for learning to find information online, use educational websites, and stay safe while using the internet.

**Technical skills**: This is the ability of business education students in the selected public universities to operate digital tools.

**Information Literacy**: This is the capacity of business education students in the selected public universities to find, evaluate, and use digital contents.

**Cybersecurity Awareness**: This refers to the knowledge business education students in the selected public universities have of safe practices in online space.

**Academic Achievement:** This is the business education students' scores in the principle of marketing course obtained from the Principle of Marketing Achievement Test.

**Business Education Students:** These are students enrolled in Business Education programme who have completed the principles of marketing course in selected public universities for this study.

**Principle of Marketing**: A required course in the Business Education programme that prepares business education students with essential skills for making business decisions and developing entrepreneurship.

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## Endnotes


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# Chapter Two

## Literature Review

This chapter presents different literature review of previous studies related to this study.

**2.1 Conceptual Review**

2.1.1 Business Education

2.1.2 Students Academic Achievement

2.1.3 E-learning Technologies

2.1.4 Digital Literacy

**2.2 Theoretical Review**

2.2.1 Self Efficacy Theory

2.2 2 The Technology Acceptance Model

**2.3 Empirical Review**

2.3.1 E-learning Technologies and Academic Achievement

2.3.1.1 Availability of E-learning Technologies and Academic Achievement

2.3.1.2 Accessibility to E-learning Technologies and Academic Achievement

2.3.1.3 Utilization of E-learning Technologies and Academic Achievement

2.3.2 Digital Literacy and Academic Achievement

2.3.2.1 Technical Skills and Academic Achievement

2.3.2.2 Information Literacy and Academic Achievement

2.3.2.3 Cybersecurity and Academic Achievement

**2.4 Conceptual Model**

**2.5 Summary of Reviewed Literature**

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### 2.1.1 Business Education

Business education is a field of study designed to equip learners with practical skills and competencies essential for navigating real-life challenges after graduation. As technology continues to reshape the world, business education programmes must evolve to incorporate new advancements, ensuring they prepare capable, skilled, and adaptable professionals such as business educators, office managers, and entrepreneurs ready to succeed in a competitive work environment[1]. Business education students are young individuals enrolled in higher institutions such as universities or colleges of education to study business education programmes. They aim to earn a certificate upon graduation and gain the skills necessary to secure a livelihood using the knowledge acquired during their course of study[2]. Business education is one of the most important components of technical and vocational education and training in Nigeria. In Nigeria, the discipline is taught at the secondary and tertiary levels of education.

Business education as any academic programme that prepares recipients for career advancement in various occupations and professions, equips recipients with the necessary knowledge and skills for an entrepreneurial career, and provides recipients with the skills and knowledge needed for business ventures[3&4]. Business education has a substantial positive impact on productivity, economic growth, and human resource development; hence it is increasingly being integrated into many countries' national development policies[5]. Business education is the cornerstone of human resource development, equipping individuals with the knowledge, skills, and insights needed to operate effectively in the business world, whether as consumers or producers of goods and services[6].

Information Technology (IT) experts and policymakers are concerned about the digital literacy of Nigerian business education graduates. This concern has been exacerbated by a lack of work

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possibilities and shifting labour market conditions. To solve the high rate of unemployment among graduates, it is critical to use the potential of the digital economy. However, attaining this demands the active participation of business education programmes in providing students with critical digital skills[7] Business education embodies the vocational knowledge and skills required for employment and success in a diverse range of business vocations[8]. Many graduates from various fields are suffering a slump in the labour market, and business education graduates are no exception. The necessity to educate business education students the required skills to help them deal with economic constraints arises. One approach to accomplish this is to engage and inspire their participation in digital skill acquisition, tutorials, and webinars to learn new digital abilities and keep current with evolving technologies[9]. The business education programme covers a wide range of economic activities in every culture, as well as all desirable business competences required for self-employment and self-reliance[10]. Ensure that all of her graduates have complete employment, especially during the current economic downturn, by providing them with life skills for self-employment.

Business Education is an extensive field of study that aims to provide learners with the practical skills, abilities, and knowledge necessary to successfully run personal businesses and contribute to the economy. One of the programme's notable features is that its graduates are capable of operating independently as business owners and entrepreneurs. As a result, graduates of Business Education have diverse job opportunities, including careers in vocational trades, education, and office settings, available at different educational levels from junior secondary through to university graduation[11]. Business Education is a course offered in Nigerian tertiary institutions that equips students with business-related skills for both paid employment and self-

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employment[12]. The National Policy on Education describes Business Education as a component of Vocational and Technical Education provided in Nigerian tertiary institutions, aimed at equipping individuals with essential skills for economic self-reliance. It focuses on imparting knowledge, skills, competencies, and attitudes required for a successful business career and the sustainable growth and development of the economy[13].

**Objectives of Business Education**

The stated objectives of business education are to give students thorough information about many facets of company and to assist them in developing transferable skills like communication and leadership[14]. Business Education is essential for students today because it builds life skills that lead to economic success and fosters the skills and mindset required for a successful career[15]. The general aim and objective of business education are as follows[16]: providing all students with opportunities to explore the world of business, discover potential interests, and learn about various career paths it offers. It aims to develop students' ability to make informed choices and effectively utilize the goods and services available in the business sector.

The programme seeks to cultivate an interest in the diverse opportunities within the business world and help students gain a practical understanding and appreciation of how the economic system functions. Additionally, it equips students to enter and excel in business jobs by teaching them the fundamental skills they need to start in these fields. Training students to carry out routine business duties related to professional, industrial, agricultural, service, and homemaking domains is another goal of business education. Finally, it readies students for further education and advanced studies in business beyond the secondary school level.

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**Curriculum structure of Business Education**

Curriculum includes the organized and intentional actions and processes that guide and support effective learning experiences[17]. The Business Education Curriculum in Universities typically features courses such as Office Practice, Business Communication, Financial Accounting, Principles of Marketing, Keyboarding, Business Law, Entrepreneurship, Human Resource Development, Computer Applications, Business Development and Management, and Office Technology. In alignment with the National Universities Commission (NUC) and Benchmark Minimum Academics Standards (BMAS), Business Education also integrates Teaching Practice (TP) and Students' Industrial Work Experience Scheme (SIWES) to bridge theory with workplace experience. Through practical experience, business education equips students to use office equipment and technology efficiently in the rapidly evolving digital world of today[18]. Business education emphasizes experiential learning, fostering the development of hands-on, real-world skills that can be directly applied in professional settings[19].

It is a vocational programme that is taught in universities and educational institutions with the goal of giving students the information, abilities, and mindset needed to launch prosperous business careers[18]. The curriculum offered at the university level integrates key elements designed to equip graduates with the competencies needed to excel professionally and pursue self-employment. In the public and private sectors, graduates are also equipped to assume administrative positions. Giving people the information, skills, and talents necessary for entrepreneurship so they may effectively manage resources for maximum output is the ultimate goal. Furthermore, the programme fosters self-reliance and independent problem-solving skills[18]. Business education supports self-employment by equipping students with relevant skills and helps reduce unemployment and poverty. Though it aims to prepare students for careers,

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entrepreneurship, and digital competence, the curriculum remains mostly theoretical, limiting practical skill acquisition needed for self-reliance and job creation. The Business Education curriculum is designed to educate students in both business-related fields and education disciplines. Its philosophy centres on developing knowledgeable, skilled, and ethical individuals who can contribute meaningfully to the business world and society[20].

The philosophy of the Business Education curriculum is built on several core objectives. First, it aims to equip students with valuable and marketable skills that not only help them secure and retain employment but also empower them to become self-employed and create job opportunities for others. It also prepares students for advanced and higher studies in the field of Business Education by providing foundational knowledge and competencies. The curriculum ensures that learners acquire the essential skills required for office-related occupations and are able to apply what they've learned to contribute meaningfully to national development. Additionally, it focuses on developing pedagogical skills necessary for teaching business subjects and provides orientation for the world of work, especially for those who may not continue with formal education after their initial training[20]

The philosophy of the Business Education curriculum is centred on building upon the foundational training received at the NCE level, particularly in pedagogical and educational development. It aims to equip learners with saleable skills that enable them to secure, sustain, and grow in their chosen careers. These skills also empower individuals to become self-employed, create job opportunities for others, and make informed decisions as consumers.

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Additionally, the curriculum is designed to prepare students for advanced studies in Business Education, ensuring continuous academic and professional growth.[21].

Business education prepares individuals for entry-level office or sales roles and for managing their own businesses. It also provides broad knowledge applicable to people from diverse backgrounds. The curriculum, particularly at the tertiary level, incorporates elements of 21st-century skills through interdisciplinary courses in areas like sociology, psychology, and law. Ongoing improvements in curriculum delivery and practical training will enhance graduates' ability to meet workforce demands and successfully apply their skills in various professional settings[21].

**Skills in Business Education**

In order to give graduates, the employability skills required for the job market, the Business Education curriculum is skill-focused. Skill is the ability to perform job-related tasks effectively and efficiently, meeting the standards expected by employers[22]. Skill is the application of knowledge into practical actions[23]. From the definitions above, it can be understood that acquiring knowledge should enable a person to apply it in producing goods or providing valuable services for society. Employers today look for graduates of business schools to possess the following essential competencies: knowledge of accounting information, office technology, management, communication, and information and communication technology (ICT)[22].

**1. Technological Skills in Business Education**

Technological skills form a critical foundation in Business Education, particularly as the digital economy reshapes the workplace. These skills encompass the capacity to operate tools such as Microsoft Office, spreadsheets, desktop publishing software, accounting packages, and learning

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management systems. In the Nigerian context, where digital transformation is ongoing, Business Education students must be equipped with relevant technological competencies to function effectively in virtual offices, digital marketing, and e-commerce environments. Mastery of tools like Zoom, Google Workspace, and QuickBooks empowers students to complete business tasks more efficiently and adapt to technology-driven roles. Moreover, technological skills support the implementation of e-learning, a key element of modern instructional methods. Without these competencies, Business Education graduates may struggle in employment or entrepreneurial ventures. Therefore, integrating structured technological training into the curriculum is key to fulfilling the programme's goal of producing job-ready, self-reliant, and digitally literate graduates.

**2. Entrepreneurial and Business Management Skills**

Entrepreneurial and business management skills are central to the philosophy of Business Education, especially in developing economies like Nigeria where unemployment rates are high. These skills include the ability to generate business ideas, write business plans, manage finances, and engage in product or service promotion. Business Education strives to develop graduates who become both job seekers and job creators. Students are taught to take calculated risks, lead teams, manage operations, and make strategic decisions. In today's economy, having entrepreneurial knowledge especially with digital business models such as drop shipping, social media marketing, and online sales gives graduates a competitive edge. Business management skills ensure that students understand how organizations function, from planning to staffing and controlling. Without these skills, the goals of self-reliance and national development tied to Business Education will remain unmet. Therefore, these competencies must be fully embedded into the Business Education curriculum.

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**3. Communication and Interpersonal Skills**

Communication and interpersonal skills are essential for effective participation in business environments. Business Education develops students' proficiency in writing professional documents such as letters, reports, memos, and emails. It also cultivates verbal communication skills, including public speaking, business presentations, and negotiation. These skills are necessary for teamwork, customer relations, conflict resolution, and networking especially in managerial or entrepreneurial settings. In the digital age, communication extends to virtual platforms, requiring students to master online etiquette and remote collaboration tools like Microsoft Teams or Google Meet. Interpersonal competence is particularly valuable in office settings where collaboration, leadership, and emotional intelligence influence organizational productivity. The Business Education curriculum must therefore prioritize training in both in-person and digital communication methods. Without this, students may lack the confidence and clarity to thrive in modern business environments. Strong communication skills directly impact employability, leadership, and business success, making them indispensable to Business Education objectives.

**4. Office Administration and Secretarial Skills**

Office administration and secretarial skills equip Business Education students with the ability to handle routine but essential tasks in a modern workplace. These include document preparation, record keeping, file management, data entry, minutes writing, and the use of office equipment such as scanners, printers, and copiers. These skills form the backbone of effective office operations in both public and private sectors. With increased digitalization, administrative roles now also involve using scheduling tools, email platforms, and online filing systems. Business

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Education programmes aim to develop professionals who can efficiently manage office tasks using both manual and digital tools. In Nigeria, where many graduates find opportunities in administrative positions, these skills directly affect employability and job performance. A lack of practical training in these areas often results in graduates who are theoretically sound but functionally limited. As such, secretarial and office management skills remain integral to the goals of Business Education.

**5. Analytical and Problem-Solving Skills**

Analytical and problem-solving skills enable Business Education students to critically evaluate business situations, make informed decisions, and develop workable solutions. These skills are cultivated through exposure to business case studies, financial analysis, budgeting exercises, and research-based assignments. Students learn to apply logical thinking and data interpretation in areas like market analysis, SWOT assessments, and risk evaluation. In a complex business environment where decision-making can determine an organization's survival, these competencies are vital. For example, a student trained in spreadsheet analysis can forecast financial outcomes or detect errors in company budgets. Moreover, problem-solving fosters innovation, an essential trait for entrepreneurs and managers. In Nigeria's dynamic economic landscape, graduates with strong analytical abilities are better positioned to respond to business challenges with creativity and precision. Therefore, Business Education must go beyond content delivery to include active learning strategies that sharpen students' critical thinking and decision-making abilities.

**Challenges to Acquisition of Business Education Skills**

Gaining practical skills through Business Education is vital because it enables young people and adults to secure and keep jobs, even as economic and social conditions shift. This discipline

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specializes in teaching essential business skills that support a well-functioning economy. The role of skill development in Business Education as a foundation for lasting national progress is extremely important. Despite this, there are obstacles that limit the effective learning of these skills[24&25];

1. **Unsatisfactory Instructional Facilities**

Essential teaching resources like classrooms, storage areas, open spaces for practical business exercises, computers, updated accounting tools, internet access, and other learning materials are insufficiently available for effective skill training. Instructional aids such as multimedia projectors, which help educators deliver structured knowledge, skills, and attitudes needed for skill acquisition, are either missing or provided in very limited quantities.

2. **Ineffective Educators/Instructors**

The quality of an education system depends largely on the quality of its teachers. However, there is a significant shortage of qualified Business educators in both numbers and expertise. The rise of ICT-based courses demands mastery of various practical skills, including computer operation and classroom technology management, which many teachers struggle with. Teachers need opportunities to engage with and become comfortable using these technologies; however, most have not allocated time to develop these competencies. Those who have often face challenges such as lack of personal computers, unreliable internet access in their offices, and frequent power outages during working hours. Nevertheless, as teachers build confidence and proficiency in computer use, they become better equipped to apply and support technology-driven teaching methods.

3. **Students' Attitudes towards Skill Acquisition**

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Educators cannot anticipate every challenge student will face, but vocational and technical programmes should provide skills that help students navigate life's obstacles. Ideally, students should actively engage in their learning to reach desired outcomes. For example, while learning to type, students are expected to use all their fingers, though some rely on just two, thinking it will help them type faster.

4. **Lack of Clear Career Path**

For various personal reasons, many business educators are reluctant to pursue further training. Those interested in continuing their education encounter challenges because only a few universities, mainly abroad, offer business education up to the doctoral level. As a result, business educators often end up enrolling in programmes that are accessible but do not provide a well-defined career progression.

5. **Inadequate Funding**

The Business Education programme, especially in Office Technology, is costly to run. With the addition of ICT-focused courses, the financial demands have grown, making it essential to boost funding to properly support and fulfil the objectives of Business Education.

### 2.1.2 Students Academic Achievement

Student academic achievement is a complex topic that has drawn considerable focus in education research. Identifying the factors that affect academic success is important for educators, policymakers, and parents, especially in business education, where the need for skilled and knowledgeable professionals continues to grow.[26]. Academic achievement is an observable or measurable behaviour demonstrated by a student in a given context. It also reflects the quality of work, showing how effectively a student completes their coursework and studies[27]. Academic achievement, encompassing students' abilities and success, is complex and closely connected to

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their overall growth, including cognitive, emotional, social, and physical development. It represents each individual student and extends across different stages and settings, from public schools to higher education and the workforce.[28]. Academic achievement is a primary goal of the education system, and reaching these objectives greatly supports societal advancement and improved wellbeing[29]. It refers to the amount of knowledge a student acquires while working toward short- or long-term educational targets. Academic achievement, which is usually assessed by standardized assessments and reflected in grades, also refers to the abilities or information acquired through school assignments[30]. An essential metric for evaluating the quality of education is student achievement. Specifically, anticipating accomplishment enables teachers to modify their approaches in order to enhance student outcomes and the general quality of education[31]. Nonetheless, Higher education institutions continue to face the issue of gleaning useful insights from big educational datasets in order to create efficient techniques for assessing student performance.

**2.1 3 E-learning Technologies**

Understanding E-learning as a broad concept is essential to appreciating the role of e-learning technologies. E-learning involves various digital methods and platforms that facilitate learning, extending beyond just the technological tools. Since e-learning technologies are specific tools and platforms that make e-learning possible, it is necessary to first grasp the idea of e-learning. Focusing solely on technologies without this foundation may limit the depth of the discussion in this study.

Utilizing information and communication technology (ICT) across a variety of platforms, including websites, PCs, tablets, smartphones, learning management systems, televisions, radios,

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and other channels, e-learning aims to improve the teaching and learning process[32]. The term broadly covers internet-based education, web training, and technological innovations in education[33]. Today, e-learning includes all forms of electronically delivered educational activities, enabling knowledge transfer in an engaging and effective way[34]. The emergence of e-learning has significantly transformed education, with many higher education institutions expanding their offerings and partnering with similar organizations. Institutions and other stakeholders, including teachers, students, instructional strategies, administrators, and technical assistance personnel, have all been significantly impacted by this shift.

E-learning, which stands for electronic learning, is the term used to describe the delivery of instruction and training through the World Wide Web or the internet[35]. Because e-learning is flexible and allows for the use of visuals and videos, it provides access to a great amount of information that was previously unknown to individual professionals. Additionally, it allows for links to websites that focus on particular topics, which furthers the spread of knowledge. The core idea behind e-learning is connectivity, which is the process of connecting individuals and sharing knowledge over computer networks. This is provided via what is referred to as the e-learning landscape or architecture, which includes the network, software, and hardware elements necessary to enable learning[36]. A broad range of programmes and practices that provide instruction and training using all accessible electronic media are included in e-learning, which is a part of flexible learning[37]. It decreases learning prices, offers learning-on-demand possibilities, and allows people to study in a flexible and customized way.

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Using digital communication, and collaboration satellite, transmitting, CD-ROMs, audio and video conferencing, mobile technology, interactive television, and Web-based technologies to enhance learning is known as e-learning[38]. With the help of e-learning tools and platforms, students can customize their experience to meet their unique learning goals by having control over the content, order, pace, time, and media. Global knowledge sharing opportunities are facilitated by e-learning technologies. It can assist teachers and students in having access to current information, which is essential for efficient instruction and learning[39].

ICT use in education enhances teaching and learning efficacy and works as a supplement in traditional classroom environments. Using e-learning technology makes it easier to learn at your own pace and from a distance, which boosts motivation, helps students remember what they've learned in the past, and gives them new learning opportunities[40]. E-learning uses various information processing and electronic technologies like computers, the internet, email, software, satellites, mobile devices, and other related tools to share knowledge and information[41]. E-learning technologies enhance and add value to traditional instructional technologies that have long been used in classrooms. While earlier tools like projectors, slides, and radio-based teaching laid the groundwork for tech enabled learning, modern e-learning technologies go further by integrating interactivity, real time feedback and digital flexibility.

These technologies facilitate modern teaching approaches such as technology-supported learning (TEL), computer-assisted instruction (CAI), computer-based interaction (CBI), virtual education, online learning, virtual learning environments (VLEs), digital educational collaboration (DEC), and computer-based training (CBT). E-learning technologies aids students, teachers, and other

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stakeholders by providing access to knowledge using cutting-edge technology and encouraging student participation in acquiring knowledge and building practical skills.

Despite its importance, few Nigerian tertiary institutions seem to have embraced e-learning technologies as integral tools for teaching or learning purposes. This is due to a lack of research on the topic of using e-learning resources in research. Furthermore, limited computer proficiency among Business Education Students in Public tertiary institutions hinders the adoption of emerging technologies[42]. Inadequate access to computers and poor digital literacy complicates the effective use of e-learning technologies in the classroom. The integration of e-learning technologies into Business Education arises from the need to enhance the effectiveness and efficiency of curriculum delivery.

**Evolution of E-learning and Its Technologies**

The concept of e-learning finds its roots in the development of distance education, which began in Europe as "correspondence study." By the late 18th century, the availability of affordable postal systems facilitated remote instruction through mailed course materials and returned assignments for evaluation. In developing regions, this model involved distributing printed learning content to students at regular intervals, who would then study, complete assignments, and return them to tutors[43&44]. During the late 1960s and early 1970s, open universities expanded this form of instruction using media such as radio and television broadcasts, audio tapes, and postal tuition services. The introduction of computers, the internet, and multimedia tools transformed communication and instructional delivery. These advancements reshaped distance education, offering closer interaction between instructors and learners and improving the quality of learning materials beyond traditional print.

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Further extending the reach of ICT, formal education began surpassing classroom boundaries to serve unreached populations through e-learning systems[44]. The adoption of digital learning environments also met the increasing need for flexible, accessible, and cost-effective education, allowing for individualized learning choices and faster knowledge dissemination[43]. Earlier literature supports the view that these systems encouraged independent learning and study[44]. The integration of digital tools into education became essential, influencing teaching, management, and research activities[45]. As a result, digital innovations transitioned distance education into online learning, which gained rapid momentum in the 20th century[43].

Various terms have been interchangeably used with online learning to describe e-learning modalities. These include electronic learning, internet-assisted instruction, web-based training (WBT), internet-delivered education, distributed and advanced distributed learning, mobile or nomadic learning, remote access education, and flexible models such as "anytime-anyplace-anywhere" learning[46].

With technological innovation evolving rapidly, digital learning is positioned to become a cornerstone of Nigeria's educational landscape. It provides an avenue for millions of Nigerians, who may encounter obstacles in accessing traditional classroom settings, to participate in learning. A major enabler for this progress is the growing reach of internet connectivity. Data from the Nigerian Communications Commission (NCC) shows that by December 2021, over 154 million Nigerians were connected to the internet, representing an 80.9% penetration rate. This growth significantly enhances the feasibility of accessing digital learning resources. As

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broadband services become more accessible and affordable, more citizens are expected to participate in e-learning.

Another vital influence is the progressive digitalization of the educational system. The government's commitment to this transformation is evident in infrastructural investments and promotion of digital education models. A notable example is the National Open University of Nigeria (NOUN), which offers a wide range of flexible online learning programmes. Similarly, the deployment of the Integrated Payroll and Personnel Information System (IPPIS) has helped stabilize the remuneration of public university lecturers, indirectly supporting e-learning by reducing financial bottlenecks[47]. This reflects how digital platforms and administrative reforms are helping to reshape academic delivery in Nigeria. Ongoing investment in educational technologies and systems will continue to redefine access, efficiency, and learning flexibility nationwide.

**Roles of E-learning Technologies in Higher Education**

Recently, the pace of digital transformation in higher education has accelerated dramatically, impacting teaching methods, technological adoption, and other factors aimed at enhancing educational quality[48]. This digital transition has prompted institutions to revise their instructional frameworks, exploring innovative pedagogical designs that uphold excellence, while also questioning the best methods to attain such standards[49]. The emergence of the COVID-19 pandemic accelerated this process, compelling universities to immediately adopt ICT tools for instruction. Despite ongoing research into effective virtual learning models and strategies, uncertainties still surround how higher education will evolve within this digital landscape. E-learning technologies, by nature, involve collaborative input and require both students and instructors to possess relevant digital competencies[50]. Key to this are technological tools like

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mobile applications and Learning Management Systems (LMS) which empower learners with flexibility, control over their study routines, and remote access to diverse content. These tools allow learners to engage with educational materials on their own terms, regardless of physical distance, promoting educational inclusivity and self-paced learning[51]. Thus, digital learning technologies have redefined how learners interact and access knowledge in virtual classrooms, introducing dynamic platforms that can elevate instructional value.

Despite these benefits, transitioning from conventional classrooms to digital spaces poses notable challenges for educators. The demand to master unfamiliar technologies and teaching frameworks may cause discomfort or reduce instructional effectiveness[52,53]. To address this, institutions must invest in capacity-building efforts, providing both technical and pedagogical support tailored to educator needs. This ensures that the integration of e-learning technologies not only enhances student engagement but also supports meaningful teaching experiences for academic staff.

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**E-learning Technologies Suitable for Business Education**

E-learning technologies is the use of digital tools, platforms and media to facilitate, support, and enhance teaching and learning processes. These technologies enable the delivery of education contents, activities, and experiences through electronic means often via the internet or other digital networks. E-learning technologies programmes and software that help people study, communicate, and administer educational information in digital contexts. In business education, these tools are critical for imitating real-world office chores, conveying theoretical knowledge, facilitating collaborative projects, and improving digital literacy.

**1. Learning Management Systems (LMS)**

Learning Management Systems (LMS) such as Moodle, Canvas, and Schoology, Google Classroom offer centralized platforms for organizing course content, assignments, communication, and assessment. They provide the digital foundation for mixed and completely online learning experiences in business courses[54]. LMS technologies enable teachers to submit lesson notes, host discussion forums, generate quizzes, and monitor student progress.

**2. Presentation and Content Creation Tools**

Microsoft PowerPoint, Google Slides, Prezi, and Canva are popular tools used in business Education to educate business communication, marketing, and proposal preparation. These tools help with visual learning and presenting abilities, both of which are essential in business [55].

**3. Office Productivity Tools**

Microsoft Excel, Word, Access, and Google Workspace (Docs, Sheets, Forms) are essential tools for business education courses. These technologies are vital for teaching data analysis, report writing, budgeting, and digital documentation, which are critical skills in office technology and business operations[56].

**4. Video Conferencing and Virtual Collaboration Platforms**

Synchronous learning, virtual lectures, student presentations, and group projects may all be facilitated by tools like Zoom, Microsoft Teams, and Google Meet. These platforms also promote digital cooperation, communication, and teamwork, which are crucial soft skills in corporate situations[57].

**5. Simulation Software**

Business simulation programmes such as QuickBooks (for accounting), SAP (for enterprise resource planning), and Sim Venture (for entrepreneurship training) enable students to interact

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with real-life business settings. These simulations help improve decision-making, financial analysis, and operational management abilities[58].

**6. Assessment and Feedback Tools**

E-learning platforms frequently include facilities for producing automated quizzes, online polls, and assignments. Tools like Google Forms, Kahoot, and Socrative allow educators to test student knowledge in real-time and offer immediate feedback[59].

**7. Cloud Storage and File Sharing Services**

Cloud-based technologies like Google Drive, Dropbox, and OneDrive are commonly used in Business Education for securely and conveniently sharing group projects, collaborative document editing, and storing massive files[60].

**8. Multimedia Tools**

Business-related media production courses employ video editing tools including Adobe Premiere, Animoto, and Screencast-O-Matic. These technologies can also help students create explainer movies or marketing content as part of their education.

**Digital Technologies in E-learning**

E-learning can take various forms powered by digital technologies. These tools and platforms enhance learning by making it more interactive and accessible[61].

1. **Online Courses:** Online courses are full-length educational programmes that are only available online. A range of multimedia learning elements, including video lectures, digital readings, discussion boards, automated tests, and instructor-assessed assignments, are incorporated into the design of these courses. They give students the freedom to learn at their own speed and on their own timetable, which is particularly advantageous for

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adult learners, working professionals, and distance learners. Reputable universities offer a variety of online courses, from short-term certificates of completion to whole degrees. Students can access programmes in finance, marketing, entrepreneurship, and information technology through online courses in the context of business education without having to be physically present on campus. By providing high-quality online learning opportunities, they also aid in closing the educational gap in underprivileged communities. Anyone with internet connection can now access a wide variety of specialized knowledge thanks to platforms like Coursera, edX, and Udemy, which have completely changed education.

2. **Virtual Classrooms:** Digital technology is used in virtual classrooms to replicate the atmosphere of a real classroom. By use of video conferencing, chat features, digital whiteboards, screen sharing, and collaborative applications like Google Docs, they facilitate instantaneous communication between educators and learners. This format supports synchronous learning, meaning students and instructors participate at the same time, which encourages immediate feedback, active discussions, and personalized support. In Business Education, virtual classrooms are ideal for delivering lectures in areas such as business communication, management principles, or entrepreneurship development. They also foster teamwork through group assignments and presentations. One key advantage is the ability to connect learners from diverse locations, promoting cross-cultural exchange and broader perspectives on business practices. Virtual classrooms support inclusivity and continuity of learning, especially during disruptions like pandemics or conflicts, making them a critical component of modern e-learning frameworks in higher education.

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3. **Educational Apps and Games:** Educational apps and games are engaging digital tools designed to enhance learning by incorporating interactivity, gamification, and multimedia features. These tools are especially effective in capturing the attention of learners and making abstract concepts more tangible. In the context of Business Education, apps such as QuickBooks for accounting practice, or simulation-based games that teach entrepreneurship, financial management, and marketing strategies, can make complex business principles easier to grasp. They cater to a wide range of learners. from children to adults, and support self-paced, informal learning outside the traditional classroom. Many of these apps include progress tracking, quizzes, and real-world challenges that stimulate critical thinking and decision-making skills. By integrating fun and functionality, educational apps and games provide a practical and immersive way for students to acquire knowledge and develop relevant skills, especially in today's technology-driven educational landscape.
4. **Simulations and Virtual Labs:** Simulations and virtual labs are advanced e-learning tools that replicate real-world processes or experiments in a digital environment. These tools are particularly valuable in technical and scientific disciplines where hands-on experience is critical but often limited by resources or safety concerns. In Business Education, simulations can be used to mimic business scenarios such as supply chain operations, stock market trading, and strategic management decisions. They allow students to apply theoretical knowledge in practical settings, make decisions, analyse outcomes, and learn from mistakes without real-world risks. Virtual labs can also provide exercises in data analysis or digital marketing campaigns, giving learners a sense of operational dynamics. These immersive experiences enhance problem-solving, critical

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thinking, and analytical skills. By simulating workplace environments and real-time reactions, simulations and virtual labs contribute to experiential learning, which is essential for preparing students for the dynamic nature of the modern business world.

5. **Mobile Learning:** Mobile learning also known as m-learning, is the practice of utilizing smartphones, tablets, and other mobile devices to engage with educational content at any time and from any place. With the increasing penetration of mobile technology, many e-learning platforms now optimize their content for mobile use, including apps, responsive websites, and downloadable resources. This form of learning supports flexibility and personalization, making it easier for students to fit education into their daily routines. For Business Education students, mobile learning offers on-the-go access to lecture videos, e-books, discussion forums, and digital assignments. It also supports microlearning, where content is broken into small, easily digestible segments for quick learning. Additionally, business apps like LinkedIn Learning or Khan Academy Business courses enable learners to update their skills and stay current with industry trends. Mobile learning democratizes access to education, especially for students in remote or under-resourced areas, and encourages continuous professional development outside traditional academic settings.

**Benefits of E-learning Technologies**

E-learning technologies have greatly increased access to education and training options, allowing students to constantly improve through refresher training and personal growth[62]. It also improves the cost-effectiveness of education, reinforces current learning institutions, and increases long-term capability. A fundamental asset of e-learning technologies is its ease; most tools and platforms are easily accessible from home, allowing for learning regardless of location. Students gain from the option to engage independently and at their own speed, which enhances flexibility

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and accommodates a variety of learning styles. Furthermore, e-learning supported by advanced e-learning technologies is incredibly affordable when compared to traditional ways and accommodates to diverse tastes, whether students learn better through images, audio information, or interactive tools[63].

These benefits are particularly impactful in Business Education, where students must not only grasp theoretical knowledge but also develop practical skills. The following points outline how e-learning technologies specifically enhances Business Education:

**1. Flexibility and Accessibility**

E-learning technologies enables students to access learning materials at any time and from any location. This flexibility is ideal for Business Education students who may be managing other responsibilities alongside their studies, enabling them to learn at a pace that suits their needs.

**2. Enhanced Digital Literacy**

Engaging with e-learning platforms builds students' proficiency in essential digital tools such as Microsoft Excel, PowerPoint, Google Workspace, and business-specific software. These skills are critical for success in the digital business environment.

**3. Improved Engagement and Interactivity**

By using multimedia content like videos, simulations, animations, and interactive quizzes, e-learning makes business concepts more engaging and easier to understand. Features like discussion forums and virtual group work encourage collaboration and mimic real-world business settings.

**4. Cost-Effectiveness**

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E-learning helps reduce the financial burden on students by eliminating costs tied to transportation, accommodation, and physical learning materials. This makes Business Education more accessible, especially for those in remote or economically challenged areas.

**5. Access to Global Resources**

Students can explore a broad range of global content, including international case studies, scholarly articles, expert webinars, and business simulations. This exposure enriches their learning and helps them understand global trends in business.

**6. Personalized Learning Experience**

Many e-learning platforms use data to offer customized learning paths based on individual progress and interests. This personalization allows Business Education students to focus on areas where they need improvement, maximizing learning efficiency.

**7. Skill Development for the Digital Economy**

As students navigate e-learning tools, they develop critical 21st-century skills such as virtual communication, project management, and remote teamwork-skills that are vital in today's digital and globalized business world.

**8. Assessment and Feedback**

E-learning platforms provide immediate feedback through automated assessments. This helps students track their performance, identify areas of weakness early, and continuously improve their academic outcomes.

**9. Enhancement of Skills**

e-learning significantly enhances the acquisition of practical and professional skills in Business Education. Through interactive platforms, students can access simulations, software tutorials, recorded lectures, and case studies that reinforces learning. For example, tools like Excel, Quick

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books, Power point, and Google Workspace can be taught via video demonstrations and virtual labs. This exposure allows students to develop technological, analytical and communication skills at their own pace.

**10. Accuracy in Performance**

e-learning supports greater accuracy in academic and technical performances by offering students tools for repetition, practice, and immediate feedback. For instance, automated quizzes, digital assessments and accounting simulations help students master key concepts and reduce errors. In business education, this is especially important for precision-based tasks like spreadsheet calculation, data entry, and document formatting. Through recorded lessons and practice exercises, students can review mistakes, correct themselves, and build mastery overtime.

**Limitations of E-learning Technologies**

E-learning offers many advantages but also comes with certain limitations. These challenges are not only related to teaching methods but often stem from the technologies that support e-learning. Problems like system errors, outdated software, slow internet connections, or poorly designed interfaces can negatively impact both teaching and learning. Successful e-learning requires careful planning, and both instructors and students must occasionally make sacrifices to meet deadlines. It also demands strong self-motivation and effective time management skills[62]. A lack of motivation is a major reason why some students fail to complete online courses. Unlike traditional classrooms, where face-to-face interaction with teachers, peer activities, and fixed schedules help keep students focused, e-learning offers less immediate feedback. In-person settings allow teachers to provide instant, personalized feedback, helping students address difficulties quickly and making learning more engaging and motivating[64].

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Extended time spent online by students and teachers can lead to feelings of social isolation due to reduced face-to-face communication, which may cause anxiety and negative thinking. Compared to traditional teaching, e-learning requires instructors to invest much more effort, not only in delivering lessons but also in providing ongoing student support and preparation. Issues with accreditation and quality assurance persist, and while many employers accept e-learning qualifications, some remain hesitant[65]. Moreover, e-learning limits direct interaction between students and teachers. It is also often confined to specific subjects, with instructors frequently focusing more on theory than hands-on practice[66].

E-learning can lead to feelings of isolation and reduced interaction, requiring strong motivation and effective time management to overcome these challenges[67]. It may also be less effective than traditional methods for clarifications and explanations, as face-to-face learning offers easier communication. Even students with strong academic knowledge might struggle to demonstrate their abilities fully. Additionally, assessments in e-learning are prone to cheating, piracy, and plagiarism due to weak monitoring and easy access to copy-paste functions, which hinders critical thinking[68]. E-learning can also weaken the socialization role of institutions and the guidance role of instructors. Furthermore, not all disciplines suit e-learning; practical fields like medical science require hands-on experience, whereas e-learning fits better in social sciences and humanities, including business education[69]. Heavy use of some websites can cause congestion, leading to unexpected time and financial costs. These limitations are more pronounced in developing countries like Nigeria, where cost and technical expertise pose significant barriers to effective e-learning adoption[70].

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**Benefits of the Effective Utilization of E-Learning Technologies**

E-learning platforms help students improve their time management abilities, which leads to a general improvement in academic achievement as they devote more time to accessing course materials, additional examples, notes, and references online[71]. These cumulative learning exercises considerably improve their academic performance. The use of e-learning technology, such as tools and platforms, provides several benefits that have a direct impact on teaching effectiveness and student academic accomplishment, especially in Business Education.

**1. Flexibility and Accessibility**

E-learning platforms offer students the ability to access educational materials at preferred time and from desired location. This flexibility supports individualized learning paces and makes education more inclusive for students with varying schedules or geographic limitations[72]. Tools like Learning Management Systems (LMS), mobile-based applications, and Google Classroom ensure 24/7 access to lectures, notes, and assignments.

**2. Enhanced Student Engagement and Interaction**

Interactive features such as multimedia content, discussion forums, quizzes, and live chats improve student Interaction/engagement and foster collaborative learning environments. The integration of these tools keeps students actively involved and allows instructors to track participation and comprehension[73].

**3. Improved Time Management and Learning Autonomy**

Utilizing e-learning technologies helps students develop stronger time management skills. With access to organized course materials and scheduled reminders, students learn to plan their study time efficiently. This self-regulated learning approach contributes to higher academic achievement[71].

**4. Immediate Feedback and Performance Tracking**

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Digital tools provide immediate feedback on assessments, enabling learners to understand their mistakes and improve quickly. Instructors also benefit from automated grading and analytics that highlight individual and class-wide learning trends[59].

**5. Cost-Effectiveness**

E-learning reduces the cost associated with physical learning environments, such as printed materials, transportation, and infrastructure. Institutions also save on resources while providing scalable and sustainable education[74].

**6. Supports Skill Development and Digital Literacy**

The consistent use of e-learning tools fosters the development of essential digital literacy and 21st-century skills, including research proficiency, digital communication, and information evaluation. These competencies are vital for success in both academic and professional environments[75].

**7. Personalized and Adaptive Learning**

Some platforms use artificial intelligence to adapt content based on student learning patterns, offering personalized learning paths. This increases the efficiency of content delivery and improves retention[76].

**Distractors of E-learning Technologies**

E-learning technologies, while widely embraced for their flexibility and accessibility, can also introduce several **distractors** that negatively impact students' academic achievement particularly in business education programmes where focus and application of skills are essential.

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**1. Digital Distractions and Multitasking**

One major issue is the prevalence of digital distractions. When students access e-learning platforms through internet-enabled devices, they are frequently exposed to non-academic content such as social media, instant messaging, video streaming, and gaming apps. This encourages multitasking, which reduces cognitive focus and memory retention, leading to decreased academic performance. Students reported difficulty concentrating during online lectures due to competing digital stimuli on their devices[77].

2. **Lack of Supervision and External Accountability**

In a traditional classroom, the physical presence of a teacher and peers helps students stay engaged. In contrast, e-learning environments often suffer from low supervision, which can lead to procrastination, incomplete assignments, or even absenteeism in virtual classes. Many students struggled to maintain motivation and discipline in self-paced e-learning formats, resulting in poor performance[78].

3. **Technological Glitches and Access Barriers**

Frequent system crashes, login difficulties, and poor internet connectivity disrupt the flow of learning and frustrate students. These technical interruptions not only waste instructional time but also demoralize learners, especially during assessments or collaborative tasks. Inadequate technical support further discourages consistent participation, which has a cumulative negative effect on academic outcomes[79].

4. **Cognitive Overload from Poor Platform Design**

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E-learning interfaces that are cluttered, non-intuitive, or filled with redundant resources can cause cognitive overload, making it difficult for students to locate and process key content. Students spend more time navigating platforms than engaging with learning material. This hampers knowledge acquisition and reduces achievement, especially for students with low digital literacy.

5. **Social Isolation and Reduced Peer Interaction**

Virtual learning spaces lack the spontaneous peer-to-peer engagement that is natural in physical classrooms. This can lead to having isolation feelings and a decline in academic motivation. The absence of collaborative learning environments, group discussions, and peer competition affects overall learning outcomes.

### 2.1.4 Digital Literacy

Digital literacy means having critical knowledge, intelligent attitudes, and creative skills in using digital media[80]. Digital literacy is described as the skills and knowledge required to use digital media, communication tools, or networks to discover, assess, use, create, and utilize information in a healthy, wise, highly intelligent, careful, precise, and lawful manner in order to foster communication and interaction in everyday life. The success of digital literacy programmes in higher education institutions is heavily dependent on the availability of resources and institutional support. Investment is required in teaching staff training, relevant curriculum creation, and facilities and infrastructure that facilitate the use of technology in education.

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Traditional curricula in tertiary institutions may not adequately address digital literacy issues. Improved integration of digital literacy abilities with existing learning materials is required to ensure that students have a holistic experience in learning. Digital literacy encompasses both technical and soft abilities like teamwork, creativity, and critical thinking. The development of digital literacy in higher education institutions must also prioritize the development of these abilities. Cultural and social settings also affect the development of digital literacy in higher education institutions[80].

Educational background, technology usage patterns, and each institution's academic culture can all have an impact on the adequate implementation of the digital literacy programmes. Digital literacy has a big impact on students' employment paths following graduation. Students possessing digital literacy skills in an excellent manner are better able to adapt to an increasingly digitally connected workplace. Therefore, enhancing digital literacy in higher education institutions can be seen as a valuable investment in students' career prospects. Digital literacy refers to a set of abilities and competences required to successfully explore, assess, create, and transmit information in digital contexts. Information literacy, media literacy, technological proficiency, critical thinking, and ethical considerations are usually defined when using digital tools[81]. According to research, those with greater knowledge of digital literacy perform better academically, are more employable, and engage in more civic activities.

Digital literacy has become an essential ability for students in postsecondary institutions around the world, and Sub-Saharan Africa is no exception. As the world's reliance on digital technology for communication, education, and work grows, students' ability to properly navigate and use these tools is critical to their academic achievement and future professional opportunities[82].

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Digital literacy entails reading and writing digitally in a range of media, including text, visual pictures, photographs, audio, video, and other forms. Individuals who have excellent digital literacy are better able to comprehend information offered through technology[83]. As a result, digital literacy is critical for enhancing productivity, decision-making, and managerial effectiveness in many domains, particularly in the corporate world[84]. The technical side of digital literacy is frequently discussed, but it encompasses much more. Digital skills involve knowing how to operate different hardware and software; however, digital literacy encompasses much more. Being digitally literate means not only understanding information management, copyright laws, ethics, and technical abilities but also knowing how to select and use the appropriate digital tools for tasks like collaboration, communication, and self-expression[85]. In the educational environment. While students Favor online learning, they also want to be trained in using digital tools before tackling assignments. Digital literacy programmes offered in many colleges mainly focus on enhancing students' technical skills, including software usage, accessing digital resources, and utilizing various learning tool[86]. Most students who underwent digital literacy training felt more confident using technology for academic tasks. Many reported feelings better prepared to navigate online learning platforms and collaboration tools like Google Classroom and Zoom for group work and class discussion[80].

**Technical skills**

Technical skills in digital literacy are the practical talents needed to engage successfully with digital devices, platforms, and applications. These include the capacity to use digital gear and software, popular educational applications, digital file and workflow management, and basic technical troubleshooting. These abilities are essential for Business Education students who want to interact meaningfully with e-learning. Students must have basic technical capabilities in order

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to interact effectively with e-learning settings. These abilities enable individuals to access, manage, and use digital platforms and resources autonomously. These skills are especially important for Business Education students at Nigerian colleges as they navigate course materials, submit assignments, and interact with virtual classes. The key technical skills include:

**1. Basic Computer Operations:** This includes the ability to switch on/off computers, use a mouse or touchpad, open and navigate software applications, and perform basic functions such as saving, printing, and creating folders.

**2. File Management Skills:** This involves organizing files and folders, converting file formats (e.g., Word to PDF), compressing documents, and uploading or downloading materials from e-learning platforms.

**3. Software Application Proficiency:** The ability to use Microsoft Word, Excel, PowerPoint, and educational tools such as Google Docs, Zoom, or Microsoft Teams. It also includes formatting documents, analysing data in spreadsheets, and preparing digital presentations.

**4. Internet Navigation and Browsing:** This refers to using search engines effectively, bookmarking useful resources, accessing online libraries, and downloading learning materials from reliable sources.

**5. Troubleshooting and Problem-Solving:** Students must be able to handle basic technical issues such as slow internet, frozen screens, or unresponsive applications without always needing external assistance.

**6. Platform Navigation Skills**: This involves the ability to log in, navigate, and interact with Learning Management Systems (LMS) like Moodle, Canvas, or Google Classroom to complete assignments, take quizzes, and access lecture notes.

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**7. Device Connectivity and Multimedia Use:** Knowing how to connect to the internet via Wi-Fi or mobile data, use webcams or microphones for virtual meetings, and engage in screen sharing or video conferencing.

These technical skills are quantifiable and may be evaluated by survey items that ask students to score their ability to complete each activity. Strong performance in these areas is closely related to a student's ability to use e-learning and succeed academically. Studies have demonstrated that insufficient technological abilities impede participation in virtual classrooms and prevent the timely submission of work[87& 88].

The technical side of digital literacy is frequently discussed, but it encompasses much more. Knowing how to utilize various hardware and software constitutes digital skills; nevertheless, digital literacy is more diversified. Being digitally literate involves more than just grasping information handling, copyright rules, ethical issues, and technical know-how; it also requires the ability to select and apply the appropriate digital tools for specific tasks like collaboration, interaction, and creative expression[89]. In the educational environment, while students prefer online learning, they also want to be educated in utilizing digital tools prior to assignments[86].

Recent research has stressed the value of technical digital skills in higher education. For example, study found that while vocational students demonstrated competence in basic digital communication, their technical proficiency in managing educational platforms and digital workflows was moderate, particularly in software installation and file management[87]. Similarly, another study discovered that students in Sub-Saharan African institutions struggled to gain enough technical digital literacy owing to infrastructure restrictions and insufficient training opportunities, which had a detrimental influence on their academic performance[88].

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In the context of Business Education, the academic achievement of learners is heavily influenced by their ability to efficiently use e-learning platforms, upload and download assignments, access materials, and manage technological issues without external assistance. Even when digital tools are readily available, a lack of technical skill can cause delays, lost motivation, and poor performance. As a result, technical abilities have a substantial impact on how successfully students accept and profit from e-learning technology.

**Information Literacy**

Information literacy refers to an individual's ability to critically evaluate and analyse various types of digital information, which can have a significant influence on pupils' entrepreneurial tendencies. Students with greater levels of media literacy may be better able to identify entrepreneurial possibilities and navigate the complex digital environment by understanding the effect of media messages, detecting biases, and engaging with media in a discriminating manner[7]. Information literacy is the ability to recognize the need for information as well as seek, appraise, and use it effectively. It extends beyond just retrieving information and includes the capacity to assess its correctness, importance, and dependability. Information literacy is an important aspect of digital literacy since it includes not just the ability to locate digital resources, but also the ability to critically analyse and correctly apply such information in academic and professional settings. This ability entails recognizing when information is required, successfully looking for and collecting resources, determining the authenticity of sources, synthesizing pertinent material, and ethically incorporating it into academic work.

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Information literacy is a critical component of digital literacy that includes identifying when digital information is required, understanding where to acquire it, assessing its reliability, and using it responsibly. It goes beyond the technological capacity to access information and instead focuses on how students interact with, evaluate, and ethically use information for academic and professional goals. Students with greater assessment and use information literacy skills are more likely to interact meaningfully with digital academic content[90]. Also, there is significant link between higher literacy levels and increased resource use among students [91]. Students who are more literate in obtaining and assessing information have better levels of engagement with digital learning tools and platforms and they have the capacity to critically analyse and utilize information directly correlates to academic outcomes[92]. Similarly, information literacy competency and the use of electronic information resources found that students with good literacy skills are more likely to successfully use digital resources, hence improving their learning experience[93].

Information literacy includes; learners' capacity to determine when information is needed, Identify suitable sources using search methods, assess sources' trustworthiness, relevancy, and authority, Synthesizing and applying the knowledge in an ethical and suitable manner, Use of material to help with academic duties such as assignments and research. As part of digital literacy, information literacy has a substantial impact on students' academic attainment. It allows Business Education students to not only access digital content, but also engage with it intelligently, making educated decisions, gaining relevant insights, and incorporating trustworthy knowledge into their learning process.

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**Cyber Security Awareness**

Cybersecurity awareness is a critical component of digital literacy, which emphasizes the safe, responsible, and informed use of digital technology. It includes the knowledge and behaviours necessary to secure personal and institutional data, prevent cyber dangers, and navigate online settings safely. As students rely more on digital platforms for learning, cybersecurity knowledge is crucial in preparing them to utilize these resources efficiently and safely. Password and account security, recognizing phishing and malware risks, safe surfing habits, data privacy and ethical online conduct, and responding appropriately to security events are all important components of cybersecurity knowledge. These competences guarantee that students not only have access to digital platforms, but also use them in a secure and informed manner.

Cybersecurity awareness is widely acknowledged as a critical component of digital competence in academic contexts. A study found that focused cybersecurity awareness training increased learners' abilities to recognize phishing, handle personal data, and take protective measures when utilizing online learning platforms[94]. In Nigeria, efforts such as Junior Achievement Nigeria's Meta Safe Online project have aimed to improve tertiary students' digital safety by raising knowledge about password hygiene, identity protection, and responsible internet use[95]. Similarly, the Cyber Security Experts Association of Nigeria (CSEAN) stressed the need of cybersecurity education in decreasing cyber hazards among students and teachers[96].

Students with strong cybersecurity knowledge are more likely to confidently use e-learning systems, reduce interruptions caused by intrusions, and assure continuous access to learning resources. As a result, cybersecurity awareness is more than a technical skill; it is a behavioural

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and attitudinal part of digital literacy that directly enhances students' academic engagement and accomplishment in digitally connected learning settings.

**Benefits of Digital Literacy**

Embedding digital fluency within academic programmes is pivotal in equipping learners to excel in a technology-driven world. As digital innovation evolves rapidly, having a solid foundation in digital competence becomes crucial for continuous personal and professional growth. Within educational contexts, digital fluency allows learners to explore vast online resources, collaborate beyond geographic boundaries, and immerse themselves in dynamic, tech-enabled learning activities. It also strengthens analytical thinking by teaching students how to scrutinize and interpret digital material with discernment. From a workforce perspective, digital aptitude is increasingly regarded as a core requirement across sectors. Today's employers not only expect familiarity with digital tools but also value individuals who can think creatively, solve problems using digital solutions, and remain agile amid constant technological shifts. Thus, integrating digital skills into formal education sharpens students' professional edge and supports long-term career development[94]. Additionally, digital fluency plays a key role in shaping responsible global citizens. By guiding learners on how to use online platforms ethically and thoughtfully, educators help cultivate digitally conscious individuals capable of contributing meaningfully to civic life. This includes engaging in online debates, promoting social initiatives, and leveraging digital media to influence positive societal transformation.

The digital world is constantly being reshaped by rapid technological advancement. As new tools emerge and existing platforms are updated, the ways individuals engage with technology also shift. Because of this, the concept of digital literacy must be continually redefined to include

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current technologies and evolving modes of digital interaction[95]. One major task for educators is to remain informed about these changes and find effective ways to incorporate the relevant digital competencies into their instructional strategies.

Digital literacy should be understood as a flexible, developing skill set rather than a fixed body of knowledge. For students to adapt effectively, they must be given consistent opportunities to build digital expertise over time. This involves embedding digital learning across various subjects, encouraging connections between disciplines, and designing hands-on, technology-rich learning experiences. Ultimately, digital literacy plays a central role in modern education, equipping learners with the abilities needed to succeed in a tech-driven, globally connected environment. By fostering not only technical know-how but also analytical thinking, ethical behaviour, and responsible online engagement, educators help students become competent digital citizens. This section lays the groundwork for exploring how digital literacy can be meaningfully implemented in educational contexts, highlighting practical strategies, existing challenges, and future pathways for effective digital instruction.

**Trends in Digital Literacy Development in Higher Education**

Digital Literacy is evolving rapidly, driven by technological advancements and changing workforce demand. In higher landing including universities, emerging trends are transforming teaching, learning and student development.

**1. Immersive Technologies: VR & AR Integration**

Higher education is rapidly using virtual reality (VR) and augmented reality (AR) to boost experiential learning. By simulating real-world environments, these immersive technologies give students the opportunity to interact with complicated scenarios in a secure online context.

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Virtual simulations for financial planning, entrepreneurial management, and marketing strategy have emerged in business education as a result of this trend. By involving students in actual tasks that would otherwise be unavailable or expensive in typical classroom settings, virtual reality and augmented reality aid in the development of practical digital competencies. Business simulations, for instance, help students develop their problem-solving and decision-making abilities by allowing them to run virtual firms or participate in virtual market assessments. In an effort to close the gap connecting theory and practice, more educational institutions are incorporating these technologies into their curricula as they become more accessible and reasonably priced. Recent research indicates that immersive technologies enhance student engagement and motivation while also promoting long-term memory retention and practical use of digital skills[97]. As a result, they are a major trend in the advancement of digital literacy.

**2. Microlearning and Lifelong Learning**

Microlearning, which involves the delivery of content in small, focused chunks, is gaining traction in higher education due to its effectiveness in promoting retention and flexibility. This trend supports lifelong learning by enabling students to access digital skills training on-demand, which is especially beneficial for adult learners and working professionals. Business education programmes are now incorporating microlearning modules on topics such as digital marketing, spreadsheet management, and data analytics. These bite-sized lessons are often delivered through mobile-friendly platforms, enabling learners to study at their convenience and pace. Lifelong learning is further promoted through online platforms and MOOCs that offer certifications and digital badges in various digital literacy areas. The flexibility of microlearning aligns well with the dynamic nature of the digital economy, where skills need to be frequently updated. Research has shown that microlearning significantly enhances learner engagement and achievement,

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especially when paired with interactive and gamified content[98]. In business education, microlearning not only builds technical digital skills but also fosters a mindset of continuous improvement and adaptability among students.

**3. AI-Powered Personalization and Adaptive Systems**

Artificial Intelligence (AI) is transforming education through adaptive learning systems that tailor content to individual learning styles and progress. These intelligent platforms use data analytics to recommend personalized learning paths, provide immediate feedback, and identify areas where students struggle. In the context of digital literacy, AI-driven tools help learners build competence at their own pace by adjusting complexity and content delivery to their needs. For business education students, this means receiving customized instruction in tools like Excel, QuickBooks, or social media analytics based on their proficiency level. Adaptive systems also support instructors by offering insights into class performance and guiding differentiated instruction. A study by [99] noted that AI-enhanced learning environments improve student outcomes by fostering autonomy and engagement. These systems are especially useful in large or remote classes where individual attention is limited. By integrating AI-powered platforms into business education, institutions can ensure that students not only meet digital literacy benchmarks but also gain deeper, more personalized learning experiences that prepare them for the complexities of modern business environments.

**4. Skills-Based Learning and Micro-Credentials**

The shift toward skills-based learning in higher education emphasizes practical competencies over theoretical knowledge. In this model, students are assessed based on their ability to perform tasks, such as using productivity software, analysing data, or creating digital content. Micro-credentials, including badges, certificates, and nano-degrees, are used to validate these skills in

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specific areas of digital literacy. Business education programmes are increasingly adopting this approach to ensure that graduates are equipped with job-relevant digital competencies. Platforms such as LinkedIn Learning and Coursera offer industry-aligned micro-credentials in business analytics, digital marketing, and entrepreneurship, which are now recognized by employers. This trend supports employability and aligns educational outcomes with labour market needs. Students can stack micro-credentials to build comprehensive portfolios that demonstrate their digital proficiency. According to [100], micro-credentials encourage self-paced, modular learning and enhance student motivation. In business education, this approach allows students to tailor their learning journey to career goals, ensuring they graduate with verifiable and marketable digital skills.

**5. Datafication and Learning Analytics**

Datafication refers to the growing use of data analytics in educational environments to inform decision-making and personalize learning. Learning management systems (LMS) now track student engagement, performance, and progress across digital platforms. Educators use these insights to identify learning gaps, optimize instructional strategies, and improve student outcomes. In business education, learning analytics can assess how effectively students are acquiring digital competencies such as spreadsheet modelling, online collaboration, or digital communication. These tools provide real-time dashboards for both instructors and students, enhancing transparency and accountability. Furthermore, predictive analytics can flag students at risk of falling behind and trigger timely interventions. According to [101], learning analytics supports adaptive feedback loops that refine learning experiences continuously. As digital tools become more integrated into business education, the ability to interpret and act on learning data

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becomes a critical digital literacy skill in itself. This trend empowers educators to make data-driven decisions while helping students understand and leverage analytics in their own entrepreneurial and managerial contexts.

**6. Virtual Communities and Digital Collaboration**

The rise of virtual learning communities and collaborative platforms marks a significant trend in digital literacy development. These environments foster peer interaction, teamwork, and knowledge-sharing beyond traditional classroom boundaries. Tools such as Microsoft Teams, Slack, Trello, and Google Workspace enable students to work collaboratively on projects in real time, irrespective of geographical location. In business education, students frequently use these tools for group assignments, virtual internships, and entrepreneurial simulations. These experiences build both technical and soft skills, such as digital communication, leadership, and project management. Virtual communities also support peer mentoring and social learning, which enhance motivation and retention. According to a study by [102], effective online collaboration contributes to deeper learning and student satisfaction. By engaging in digital collaboration, students develop competencies that are essential for the modern workplace. This trend reflects the shift from isolated learning to networked learning environments where digital interaction is central to educational and professional success.

**7. Emphasis on Digital Accessibility and Inclusive Design**

Inclusivity in digital education is gaining prominence as institutions recognize the need to make learning accessible to all students, including those with disabilities. Digital accessibility involves designing content and platforms that accommodate diverse learning needs such as providing screen reader compatibility, captions, and adjustable text sizes. Inclusive design also considers varying levels of digital literacy and provides scaffolding to support learners at different skill

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levels. In business education, this ensures that every student can engage with digital tools used in accounting, marketing, or data analysis courses. Institutions are adopting standards like the Web Content Accessibility Guidelines (WCAG) to ensure compliance and equity. Accessibility tools such as immersive readers, text-to-speech, and alternative input devices are being incorporated into LMS platforms. According to [103], inclusive digital learning environments not only support equity but also improve the quality of education for all learners. As digital literacy becomes a prerequisite for academic and professional success, ensuring accessibility is not just a legal or ethical imperative, it is essential for maximizing the impact of digital education initiatives.

**Challenges to Digital Literacy Development**

As the world transitions into a technology-driven era, the integration of digital literacy into educational systems has become increasingly vital[104]. For business education in particular, where the curriculum is expected to prepare students for modern workplaces and entrepreneurial ventures, digital literacy is no longer optional, it is essential. While the benefits of digital literacy are widely acknowledged, including improved access to global information, enhanced problem-solving skills, and increased employability, the journey toward embedding these competencies within the curriculum is fraught with challenges. These obstacles range from issues of technological inequality to concerns over educator preparedness and student well-being. Understanding these challenges is crucial in designing and implementing digital literacy programmes that are equitable, effective, and sustainable.

One of the most significant barriers to digital literacy integration is the digital divide - a gap that exists between individuals who have adequate access to digital tools and the internet, and those who do not. In many Nigerian institutions, particularly public universities, this divide is

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pronounced. Students from low-income households or rural areas often lack access to personal computers, reliable internet connectivity, or even electricity. This imbalance severely limits their ability to participate in digital learning activities, thereby placing them at a disadvantage compared to their more privileged peers. In a study, it was reported that limited infrastructure, including inadequate internet facilities and outdated computer labs, contributes significantly to the digital divide in Nigerian tertiary institutions[105]. The implication of this divide is that even when digital literacy is embedded in the curriculum, not all students can benefit equally, which undermines the goal of inclusive education. For digital literacy to be effectively implemented in business education, schools and policymakers must invest in technological infrastructure and provide subsidies or loan schemes for digital devices to support underprivileged students.

Closely linked to this challenge is the issue of teacher training and professional development. The effectiveness of any educational reform hinges significantly on the competence of its implementers, in this case, the educators. Many teachers and lecturers in Nigerian institutions, particularly those trained under traditional pedagogical models, may lack the requisite skills or confidence to teach digital literacy. Even where resources are available, the absence of adequate training means that instructors may either underutilize digital tools or misuse them, thereby failing to meet the learning objectives. As digital technologies continue to evolve, staying updated requires continuous professional development. A large proportion of lecturers in education faculties in Nigeria report insufficient training opportunities in the use of e-learning platforms, online collaboration tools, and digital content creation software. This gap not only limits the quality of instruction but also reduces the likelihood that students will develop critical digital competencies.

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Therefore, there is a pressing need for institutional investment in ongoing training and support for teachers, including workshops, certifications, and access to online resources. More importantly, digital pedagogy should be incorporated into the initial training of business education teachers to build competence from the foundational level.

A third but equally pressing concern relates to digital safety and the social-emotional well-being of students. As educational settings become increasingly digitized, students are exposed to a range of risks including cyberbullying, identity theft, exposure to inappropriate content, and screen fatigue. Educators and school administrators must take a proactive role in promoting digital citizenship, the ability to use digital technology responsibly, ethically, and safely. This responsibility includes teaching students how to safeguard personal information, critically evaluate online content, and interact respectfully in digital spaces. Business education students, who are likely to engage with online marketplaces, financial platforms, and social media for marketing and branding, need to be especially aware of digital ethics and security protocols. The Dig Comp 2.2 framework emphasized "safety" as a core domain of digital competence, covering areas such as protecting devices, managing online identity, and promoting health and well-being in digital environments[106]. However, implementing this aspect of digital literacy requires well-structured policies, content filters, monitoring systems, and most importantly student guidance. Unfortunately, many institutions still lack comprehensive policies and instructional content on these aspects, leaving students vulnerable.

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Moreover, educators often find themselves struggling to strike a balance between leveraging digital tools and preserving students' mental and emotional health. Excessive screen time, social comparison on digital platforms, and academic pressure associated with digital learning can lead to increased anxiety and burnout among students. This is especially pertinent in business education, where performance-driven learning environments can exacerbate stress. Schools must therefore adopt a holistic approach that integrates digital well-being into the curriculum, ensures manageable digital workloads, and provides counselling support when necessary.

An additional challenge lies in the lack of curriculum alignment. While digital literacy is often mentioned in educational policy documents, its implementation is inconsistent and poorly structured across different institutions and departments. In business education, for instance, digital skills are sometimes relegated to standalone ICT courses rather than being infused throughout core business subjects like marketing, accounting, and entrepreneurship. As a result, students may not see the relevance or application of digital tools within their fields of study. This fragmentation hinders students' ability to transfer digital skills across domains, thereby limiting their practical utility in real-world scenarios. A more effective strategy would be to embed digital literacy holistically into every aspect of the business education curriculum from assignments and presentations to internships and final-year projects.

Finally, institutional resistance to change and limited policy enforcement can also obstruct progress. In many academic environments, curriculum reviews are slow, hierarchical, and bureaucratic, making it difficult to respond quickly to technological advancements. Without clear national and institutional mandates, schools may not prioritize digital literacy or allocate the necessary resources for its implementation. This inertia further widens the gap between

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educational outcomes and labour market expectations, especially in a fast-evolving digital economy.

**Strategies to improve digital literacy**

Enhancing digital Literacy is crucial for business education students to navigate the modern workplace. Effective strategies can bridge a gap between theoretical knowledge and practical application[107].

**1. Institutional Integration of Digital Literacy Frameworks**

To systematically improve digital literacy, higher education institutions must integrate digital competence frameworks into their academic policies and curricula. Frameworks like the European Union's Dig Comp or UNESCO's Digital Literacy Global Framework provide comprehensive guidelines on key digital competencies for students and educators. By aligning curriculum content, assessments, and learning objectives with such frameworks, institutions can ensure that digital literacy becomes an intentional and measurable part of business education. This approach promotes consistency, coherence, and quality assurance in how digital skills are taught and evaluated.

**2. Faculty Development and Continuous Training**

A major challenge in improving digital literacy is the limited capacity of educators to teach and model digital competencies. Institutions should invest in ongoing professional development programmes that equip faculty members with practical digital teaching strategies, such as integrating data analytics tools, collaborative technologies, and cybersecurity principles into their courses. These trainings should also include pedagogical approaches for blended and online learning environments. Empowering lecturers with up-to-date skills not only enhances their

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teaching effectiveness but also models best practices for students. Incentives, certifications, and peer mentoring can further motivate continuous development.

**3. Equitable Access to Digital Infrastructure and Tools**

Improving digital literacy must begin with addressing the digital divide. Institutions should provide reliable internet connectivity, adequate computer labs, and access to essential software and learning management systems for all students. Loan programmes for laptops or tablets and partnerships with telecom providers for affordable internet can bridge access gaps. Additionally, institutions should standardize the use of educational platforms and tools across courses, helping students develop fluency in essential digital environments without repeated relearning. Accessible design must also be prioritized to support students with disabilities.

**4. Curriculum Redesign to Include Practical Digital Skill Application**

Business education curricula should be restructured to promote hands-on digital literacy development. This involves embedding real-life digital tools into assessments and classroom instruction such as teaching data analysis with Excel, content creation with Canva, or financial forecasting with business simulation software. Digital project-based learning and capstone projects aligned with industry demands can help students develop both confidence and competence in applying digital tools to solve business problems. Interdisciplinary collaboration can also provide varied digital exposure.

**5. Peer Learning and Digital Mentorship Programmes**

Creating structured peer learning groups and mentorship programmes fosters collaborative learning of digital skills. Digital-savvy students can mentor others through digital literacy boot camps, workshops, or online support forums. This peer-based approach not only enhances learning outcomes but also builds a culture of shared responsibility and digital citizenship.

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Student-led initiatives like tech clubs or digital literacy ambassadors can further support institutional goals.

**6. Embedding Digital Ethics, Safety, and Citizenship Education**

Beyond technical know-how, improving digital literacy requires embedding digital ethics and safety into business education. Courses should cover topics such as data privacy, cyberbullying, misinformation, and responsible digital communication. These components prepare students to navigate digital environments ethically and safely while fostering respect and integrity in their online behaviour. Including discussions on digital rights, global citizenship, and equity in access also aligns with broader educational goals.

**7. Leveraging Industry Partnerships and Certification Opportunities**

Institutions can collaborate with tech companies and certification providers to offer students opportunities for recognized digital literacy credentials. Partnerships with platforms like Google, Microsoft, LinkedIn Learning, or IBM allow students to gain industry-relevant certifications in areas such as cloud computing, digital marketing, or cybersecurity. These partnerships not only enhance employability but also ensure that students remain competitive in the evolving digital economy.

**Challenges of Optimal Adoption of E-Learning Technologies and Digital Literacy**

In numerous e-learning initiatives, students often encounter negative experiences during their studies, including ineffective teaching approaches, weak curricular frameworks, limited learning resources, and a lack of engaging, user-friendly interfaces on digital platforms[108]. Additionally, many online learners face difficulties concentrating at home due to competing domestic responsibilities like childcare and household chores[109]. Furthermore, some teachers lack coaching and multimedia tool expertise, as well as tele coaching skills[110]. In his own contribution,

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[111]stated that the desire to pursue e-learning remains a pipe dream due to a lack of ICT infrastructure, an insensitive citizenry, and a technophobic workforce. A noticeable disparity exists between the advanced skills of ICT experts who create e-learning systems and the cautious pace of instructional designers in the education sector. This misalignment often slows down effective integration.

Furthermore, the lack of adequate access to devices like computers and modems, coupled with the high cost of internet usage, significantly hampers the development and accessibility of e-learning platforms[111]. Unreliable, slow, or restricted internet access often disrupts the learning process, causing delays in accessing essential materials and hindering academic success. These limitations can result in learner dissatisfaction and reduced educational effectiveness. Additionally, digital platforms currently fall short of replicating the rich, interactive, and personalized engagement typically expected in business education's tutor-student dynamic. Compounding these issues are the prohibitive costs of acquiring necessary tools such as laptops, software, internet subscriptions, and technical services. Power outages in urban centres and lack of network coverage in rural communities further obstruct the effective deployment of e-learning within tertiary institutions and business education settings. Insufficient computer literacy among teachers and students, along with limited ownership of personal computers, continues to hinder the effective adoption of e-learning technologies. Most teacher training programmes fail to include structured digital skills education, leaving educators without the competence to utilize these tools confidently.

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Consequently, many lack the proficiency needed to engage with digital platforms. Unless technological systems become consistently dependable and accessible, the broad application of e-learning technologies will remain difficult, despite growing emphasis on their importance[112,113]. Many e-learning programmes do not contain sufficient information to ensure a thorough comprehension of the subject[112]. Certain platforms, for instance, simply provide lecture slides in PowerPoint format along with an online discussion board, which falls short of offering learners a comprehensive understanding of the course content. Such limitations, among others, hinder the widespread implementation of e-learning technologies within Nigeria's educational institutions.

To mitigate these challenges, business education educators need to continuously enhance their proficiency in areas such as computer literacy, networking, multimedia, and communication skills. This ongoing professional development will equip them to effectively navigate emerging ICT advancements and address future global challenges.

## 2.2 Theoretical Review

### 2.2 1 Self Efficacy Theory

Self-efficacy is described as the utmost individual belief in one's ability to plan and take actions necessary in handling future conditions and achieve certain goals [114]. It is a key component of Bandura's Social Cognitive Theory, influencing how individuals think, behave, and feel in settings of different kinds, including academic achievement and learning[115,116]. This theory assumes that people with self-efficacy on the high level are more likely to put in sustained effort and persevere through challenges, increasing their chances of success, whereas people with low self-efficacy are more likely to withdraw or avoid tasks they perceive as difficult, resulting in poor performance or failure[114].

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Self-efficacy is context-dependent and influenced by four major factors: active mastery experiences, vicarious experiences, social persuasion, and physiological or emotional states[114]. Bandura's notion of four types of efficacies; physiological/emotional states, vicarious experiences, verbal persuasion, and mastery experiences, - has found diverse uses in educational and psychiatric settings. Self-efficacy theory has influenced social, developmental, and clinical psychology, resulting in new experiments, measuring methods, intervention programmes, and theoretical modifications[117]. Mastery experiences and direct personal accomplishment are seen to be the most influential in the development of strong self-efficacy beliefs. Vicarious experiences, such as seeing others successfully complete a task, can increase efficacy if the observer sees the model as comparable to themselves. Social persuasion entails verbal encouragement or feedback from others, whereas physiological and emotional indicators, such as stress or exhaustion, can either positively or negatively influence self-efficacy evaluations, depending on how individuals interpret these situations[114]. It was proposed that the impact of previous experiences on self-efficacy is determined by how individuals interpret the causes of their performance outcomes[118].

The contrast between efficacy expectations and outcome expectancies is central to the idea. Efficacy expectations are ideas about one's ability to do an activity, whereas outcome expectancies are beliefs that a specific behaviour will generate the intended result[114]. These beliefs influence not only conduct but also emotional responses, making them crucial for academic success, particularly in technology-mediated situations. Self-efficacy is extremely important in this study, which looks at the impact of digital literacy and e-learning on academic accomplishment among Business Education students. Digital self-efficacy refers to an

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individual's confidence in their capability to proficiently utilize digital tools and platforms for educational purposes. For students to engage successfully in e-learning technologies, they need not only digital literacy but also assurance in their competence to apply these skills effectively. Without this confidence, students may avoid using learning technologies or fail to persevere through challenges, resulting in lower academic achievement.

Empirical research demonstrates the relationship between self-efficacy and academic achievement. A study of university students revealed that digital self-efficacy significantly predicted involvement with e-learning technologies, digital cooperation, and eventual academic performance[119]. Another study of medical students in Pakistan found that digital literacy increased academic self-efficacy, which reduced academic procrastination and improved performance in e-learning environments [120]. In Nigeria, research has shown that self-efficacy is a key predictor of students' readiness for e-learning and academic engagement.

Research of students at the National Open University of Nigeria found that self-efficacy is a strong predictor of e-learning readiness, implying that confidence in one's abilities encourages proactive usage of digital learning platforms[121]. Furthermore, in Ogun State, digital self-efficacy was linked to greater willingness to use digital platforms successfully and complete learning activities despite infrastructure and environmental obstacles [122].

Self-efficacy also has an impact on metacognitive strategies, emotional engagement, and persistence, all of which are important factors in e-learning environments where students must frequently manage their own learning. A structural model from a medical education study found that students with higher self-efficacy used more metacognitive strategies, felt fewer negative

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emotions, and performed better academically[123]. These dynamics are important for Business Education students who are expected to work in blended or fully online learning environments at public universities throughout Southwest Nigeria.

Self-Efficacy Theory, with its significant predictive potential and explanatory value, offers an excellent theoretical framework for this study. It describes the psychological and behavioural factors that govern students' interactions with digital tools and learning platforms. By concentrating on learners' perceptions of their abilities, the theory provides insights into how digital literacy and e-learning platforms may be used to improve academic accomplishment, given that students have the confidence to use their talents effectively. Self-efficacy over the years has generally been acknowledged as a key process of human agency, impacting the decisions people make, the effort they invest, and their perseverance in the face of adversity. It is especially significant in academic settings, as students' perceptions about their potential to succeed influence their motivation, learning tactics, and final accomplishment. Self-efficacy is an important internal motivational process that is controlled by both personal and contextual factors, eventually shaping motivational outcomes including effort, perseverance, and accomplishment[124].

**2.2 2 The Technology Acceptance Model**

The Technology Acceptance Model (TAM) is a theory designed to explain how people come to accept and use new technologies. Created by Fred Davis in the late 1980s, TAM builds on an earlier theory called the Theory of Reasoned Action (TRA) by Fishbein and Ajzen, but simplifies it to focus specifically on technology use. The model highlights two important factors that shape a person’s attitude toward adopting a technology: perceived usefulness and perceived ease of use[125]. TAM explains the factors influencing computer acceptance through five key components:

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Actual Use (A), Attitudes Towards Using (A), Behavioural Intention (I), Perceived Ease of Use (PEAU), and Perceived Usefulness (PU)[126]. Adapted from the Theory of Reasoned Action (TRA), TAM focuses on two primary beliefs, PU and PEOU, which serve as the main drivers shaping users' attitudes toward technology use and their intentions to adopt it[127]. Researchers often employ TAM to analyse behaviour and intention related to information technology usage because both perceived usefulness and perceived ease of use play critical roles in predicting how users accept and engage with new technologies[128].

Perceived usefulness refers to how much someone believes that using a particular technology will improve their performance, such as helping students achieve better results in business education through digital tools or e-learning platforms. Perceived ease of use, on the other hand, relates to how effortless a person thinks it will be to use the technology. If digital platforms are straightforward and simple to navigate, users are more likely to embrace them. These two perceptions work together to influence a person's overall attitude toward the technology, which then shapes their intention to use it. This intention usually predicts whether they will actually use the system. Essentially, TAM explains that technology adoption starts with what individuals think about the technology's usefulness and ease, which then drives their decision to engage with it. This makes TAM a valuable framework for understanding how digital innovations spread in fields like education, business, and healthcare.

The Technology Acceptance Model (TAM) emphasizes the role of two main perceptions, Perceived Usefulness and Perceived Ease of Use, in shaping how individuals adopt information technologies[129]. Perceived Usefulness refers to the belief that utilizing a given system will boost

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one's job efficiency or performance, while Perceived Ease of Use indicates the extent to which a person expects the system to require minimal effort to operate. TAM accounts for about 40% of the differences observed in people's attitudes and behaviours towards using information systems, making it a widely accepted framework for understanding technology adoption. It is frequently applied to predict how users will accept new technological tools[130]. Perceived Usefulness is defined as an individual's conviction that employing a particular system will enhance their work output, whereas Perceived Ease of Use reflects the anticipated simplicity in using the technology.

The model argues that a user's intention to engage with technology is influenced by their overall attitude towards it, which is itself shaped by these two core beliefs about usefulness and ease. Thus, TAM links behavioural intentions directly to attitudes and perceived system characteristics, explaining why and how users decide to embrace or reject technology.

The Technology Acceptance Model (TAM) was developed to clearly explain the key factors that influence how users adopt information technology. Grounded in psychological principles, TAM examines users' beliefs, attitudes, motivations, and behaviours to understand their interaction with technology. The model suggests that a person's decision to use a technology is largely shaped by their attitude toward it. Among the factors in TAM, Perceived Ease of Use is important because it directly impacts Perceived Usefulness. TAM has become a widely accepted framework for predicting the acceptance and usage of new information technologies in organizations. Studies have shown that TAM explains user intentions more effectively than the Theory of Reasoned Action (TRA). In particular, Perceived Usefulness stands out as a stronger factor influencing an individual's intention to adopt technology compared to TRA[131].

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Applying the TAM model to the study offers a strong theoretical basis. It provides a structured lens through which students' attitudes toward e-learning and digital literacy can be examined. Business education students must interact with digital tools not just to consume knowledge but to create content, collaborate with peers, and engage in digital entrepreneurship. Therefore, their perceived usefulness of digital tools such as for accessing lecture materials, submitting assignments, or conducting research and their perceived ease of use such as ease of navigation or system responsiveness are expected to influence their academic achievement and willingness to integrate these tools into daily learning.

Furthermore, incorporating digital literacy skills like evaluating online information, digital communication, and safe internet practices which aligns well with the principles of the Technology Acceptance Model (TAM). As digital learning becomes more integrated into business education, it is crucial to consider not only students' access to technology but also their willingness and motivation to use it effectively. The TAM framework helps identify obstacles and enablers in technology use, providing valuable insights for curriculum designers, educators, and policymakers to enhance the digital learning environment.

The Technology Acceptance Model serves as a strong, evidence-based framework to explore the connection between e-learning technologies, digital literacy, and academic performance. It illustrates how students' beliefs and attitudes influence their acceptance of digital tools, which subsequently impacts their educational outcomes. Grasping these relationships is vital for advancing teaching and learning methods in Nigerian public universities, particularly in business

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education, where digital competence is essential for both academic achievement and career readiness.

## 2.3 Review of Empirical Studies

### 2.3.1 E-learning Technologies and Academic Achievement

#### 2.3.1.1 Availability of E-learning Technologies and Academic Achievement

Research conducted a descriptive survey to assess how e-learning technologies affect the learning of Business Education courses in Public Universities in South-South Nigeria. The study involved 275 final year Business Education students, select. The findings indicated that tools such as digital libraries, video conferencing platforms, and search engines positively influence students learning experience. The study concluded that integrating e-learning technologies enhances the learning of Business Education courses[132]. A study examines the use of e-learning tools for teaching Business Education topics. The study identified several challenges related to availability, including a lack of trained personnel, inadequate government funding, inadequate infrastructure for e-learning, insufficient computer laboratory rooms, high costs of ICT resources, poor maintenance culture, and unstable power supplies. Inadequate infrastructure for e-learning was seen as a serious worry, with a mean value of 3.20 and a standard deviation of 0.70. These findings illustrate how the availability of e-learning technologies is hampered not just by hardware scarcity but also by systemic challenges such as inadequate support, maintenance, and legislative backing, all of which impede effective implementation and access for Business Education students[133].

The absence of physical equipment like computers, computer labs, internet and electronic mail access, wireless apps, fax machines, videophones and teleconferencing equipment, virtual

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libraries, digital classrooms, multi-media systems, and the challenge of creating multimedia courseware are some of the issues that hinder e-learning in developing nations like Nigeria. With the mean scores ranging from 2.32 to 2.47 and standard deviations between 1.141 and 1.284, research of the availability of e-learning tools in Business Education courses at tertiary institutions revealed a very low degree of availability. These figures indicate that essential e-learning technologies are not sufficiently available, thereby limiting students' ability to fully benefit from digital learning environments[134].

The availability and utilization of e-learning resources at Enugu State's public universities were reviewed in a study[135]. The research, which surveyed 306 students and 26 instructors in Business Education, found that some resources, such as Learning Management Systems (LMS), multimedia aids, and e-journals, were widely available and used. However, it emphasized the importance of encouraging more lecturers to create and distribute digital learning tools in order to improve learning outcomes.

In more recent research, a study evaluated 150 instructors from Oyo State's colleges of education[136]. The data revealed that only around 51.5% of e-learning facilities were operational. While 60-62% of participants reported having access to the internet and using multimedia projectors, other important tools were either missing or outmoded. To improve the availability and effect of e-learning tools, the research highly advocated the establishment of specialized e-learning classrooms, reliable power supplies, and digital libraries. Similarly, a study surveyed 100 business and management academics in Kwara State to determine the availability and use of e-learning materials[137]. Their findings revealed that e-learning facilities were "moderately

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available" (mean score: 96.64) and "occasionally used" (mean = 98.16). The study found no major differences between universities and suggested that universities and business collaborate to increase access to current digital learning tools.

A study assessed the availability and use of e-learning tools among 300 students and 60 instructors in scientific education programmes at three public institutions[138]. The study discovered that users had high levels of technological skill and a limited availability of e-learning resources. However, students stressed the need of unrestricted access to academic content on institutional platforms, as well as continuous training for both staff and students, in order to optimize utilization. Although significantly older, useful baseline data were supplied from Covenant University[139]. Among the 511 undergraduate students polled, 61.8% mostly utilized Moodle to download course materials. While the platform was apparently available, around 54% of the students identified limited internet connectivity as a key barrier. The study concluded that, notwithstanding tool availability, infrastructural constraints hampered broad adoption.

According to the papers evaluated, e-learning technologies are typically available in Nigerian public universities, but they vary by institution. While popular technology such as Learning Management Systems (LMS), multimedia projectors, and internet services are available in many schools, their accessibility is sometimes hampered by infrastructure issues such as unpredictable energy, low bandwidth, and inadequate technical assistance. These constraints not only limit the frequency and efficacy of e-learning tool use, but they also have an impact on students' academic attainment levels. When students do not have constant access to digital learning tools, they are less likely to fully engage with course material, participate in interactive learning activities, or receive timely academic feedback. All of these are required for optimal performance. As a result,

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guaranteeing the availability and effectiveness of e-learning infrastructure is crucial to fostering an encouraging learning atmosphere that supports academic achievement among Business Education students at Nigerian public institutions.

#### 2.3.1.2 Access to E-learning Technologies and Academic Achievement

The availability, accessibility, and utilization of material resources for business education instruction in North-West Nigerian educational institutions were examined in a study[140]. Bertalanffy's system theory served as the basis for the investigation. Additionally, the study was guided by six specific goals, six research questions, and six null hypotheses. A descriptive research methodology was employed in the study. The study gathered 303 respondents, all of who were business education lecturers from nine academic institutions in Nigeria's northwestern region. The study also showed no significant difference in the mean ratings of male and female business education professors concerning the amount to which lecturers used equipment and supplies for teaching business education courses ($t123 = 0.643$, $P>0.05$). It was determined that sufficient material resources were not properly provided for colleges of education, affecting the efficient teaching of business education courses. It was suggested that in order to meet the NCCE (2020) minimum standards, the government should supply the much-needed physical amenities, equipment, and resources for business education. Additionally, the NCCE should regularly monitor and supervise the use of the physical facilities and equipment that are available.

A survey of 740 Education undergraduates at the National Open University of Nigeria (NOUN) found a significant positive relationship ($r \approx 0.65$, $p < 0.01$) between the availability of e-learning platforms such as LMS, e-libraries, and assignment portals and their level of usage for academic

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activities. The study stressed the importance of better orientation and platform integration in order to improve learning results[141].

Similarly, quantitative research was carried out with 101 undergraduates from five public institutions in Nigeria[142]. The data revealed that almost 95% of the students possessed the fundamental digital literacy necessary for e-learning. However, more than 70% of them encountered accessibility difficulties such as unpredictable energy supply and expensive internet charges, limiting their capacity to use e-learning platforms successfully. A researched internet access and its influence on academic activities among 120 NOUN students in Lagos. According to the research, 85% of people used personal cell phones and mobile data to access e-learning, however 68% said bad network connectivity hampered their academic efforts. The author observed that, while device access was widespread, infrastructure obstacles hampered meaningful involvement[143].

A study investigated technical gaps in open and remote learning with data from 360 NOUN students in Enugu. According to the survey, 78% of respondents faced considerable barriers to using technology (mean score = 3.5/5), and 69% assessed the quality of accessible tools as bad. These findings highlight a clear correlation between accessibility issues and decreased utilization of e-learning systems[144]. Another investigated the usage of electronic learning tools by 285 adult students at NOUN's Kwara study centre. According to the findings, 54% of pupils seldom used computer-aided education due to low power supply (62% indicated) and a lack of digital abilities (58%). The authors advised that institutions work to eliminate these access gaps in order to provide more inclusive e-learning delivery[145]. Research evaluated 697 distance learners' opinions

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towards Learning Management Systems (LMS). The results revealed a statistically significant gender difference ($t(695) = 2.45$, $p < 0.05$) in LMS attitudes, but no difference across fields. The study revealed that, even when positive sentiments existed, poor access and unfamiliarity with the technologies hampered real platform use[146].

These studies shows that, while the majority of students in Nigerian public institutions are digitally literate and have access to mobile devices, their capacity to successfully access and use e-learning platforms is limited by a number of infrastructural and socioeconomic barriers. These include fluctuating power, expensive internet fees, poor access, and a lack of institutional support. Despite widespread knowledge and desire to utilize these platforms, their actual accessibility remains restricted, stressing the importance of focused interventions to improve infrastructure, training, and blended learning adoption techniques.

**2.3.1.3 Utilization of E-learning Technologies and Academic Achievement**

A researcher examined the utilization and perception of e-learning technologies in business education courses at Kwara State University[147]. Four objectives guided the investigation, prompting the development of four research questions and four hypotheses. The investigator used a descriptive research design. There were 300 professors and pupils in the entire population. Because the population was small, no sampling was done. The "Awareness and Utilization of E-Learning Technologies in Teaching and Learning Questionnaire" (AUETTLQ), a standardized questionnaire, was used to collect data. To meet the research objectives, the study's data were statistically assessed using mean, standard deviation, frequencies, and percentages for respondents' personal information. Applying an independent t-test, the null hypotheses were examined at the 0.05 level of significance. One of the study's other findings was that

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synchronous e-learning technologies are employed in business school courses, and both instructors and students are aware of them. The study revealed that although both instructors and students are familiar with synchronous and asynchronous e-learning technologies, they show a preference for synchronous tools when teaching and learning business education courses. Additionally, it was recommended that seminars and workshops be organized to raise awareness among teachers and students about the importance of effectively using the available e-learning technologies.

### 2.3.2 Digital Literacy and Students' Academic Achievement

#### 2.3.2.1 Technical Skills and Students' Academic Achievement

A study assessed the digital abilities of 660 distance-learning students at the University of Lagos (354 female and 306 male) [148]. According to the study, 64.4% of respondents said they used digital tools regularly for coursework. However, there was a considerable disparity between the perceived value of digital abilities and their actual degree of ability. The researchers concluded that, while students recognized the need of digital literacy, many lacked the necessary expertise to operate e-learning systems efficiently thereby affecting their academic achievement[148]. A study investigated the role of digital literacy in enhancing academic achievement and entrepreneurial competence among Business Education Students at Delta State University, Abraka. Engaging a descriptive survey design and 175 sampled students, the study concluded that business education students with higher level of digital proficiency perform better academically[149]. A study investigated 306 undergraduate students from several Nigerian colleges. The findings suggested that digital literacy had a substantial impact on the utilization of digital learning materials. Students with stronger digital abilities engaged more often and productively with e-learning platforms, which improved their academic performance[150]. A study investigated

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the influence of digital literacy on academic achievement and communication skill acquisition among Business Education students in tertiary institutions in Kaduna state, Nigeria[151]. Employing a descriptive survey design, sampled 290 respondents concluded that digital literacy significantly influences academic achievement of business education students[151]. Another study explored the effect of digital literacy on Nigerian university students' ability to use digital resources, finding that students with stronger digital skills were better at leveraging these resources, which contributed positively to their academic success.

**2.3.2.2 Information Literacy and Students' Academic Achievement**

In a related study involving 272 senior secondary school students in Chikun Local Government Area, Kaduna State, Nigeria, researchers examined the relationship between digital literacy, student engagement, and academic performance. The findings revealed a significant positive correlation between digital literacy and academic achievement ($r = 0.622$, $p = 0.04$), as well as between digital literacy and student participation ($r = 0.323$, $p = 0.01$). This indicates that students with higher digital literacy including research abilities are more engaged in their learning and perform better academically[153].

A different study surveyed 321 university students and found that their information literacy in online learning environments had a positive influence on their academic achievement. Similarly, research involving 258 Spanish middle school students assessed their digital skills through questionnaires and revealed a strong positive relationship between these skills and academic success[155]. Another longitudinal study tracked Internet use, digital literacy, and academic outcomes in 101 American families, investigating whether early childhood digital literacy (around age 5) would enhance academic achievement by middle childhood (around age 11). The

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findings showed a notable positive link between children's digital literacy and their school performance[156]. However, some research presents contrasting results. For instance, a study using questionnaires and interviews with 800 college students found that while digital literacy significantly improved communication, research abilities, and self-confidence, it had minimal impact on their overall GPA[157]. A logistic regression model was used to assess collected data, which included the performance of 43 undergraduates in an introductory management course, their digital literacy, and their student characteristics. According to research findings, student attributes and digital literacy did not significantly affect student accomplishment in blended learning[158].

A desk study revealed a positive correlation between students' information literacy skills and their academic achievements, suggesting that students proficient in locating, evaluating, and utilizing information tend to perform better academically[159]. A survey study was conducted at Bowen University, Iwo, Osun State, assessing undergraduates' information literacy skills. The findings indicated limited exposure to structured information literacy programs, leading to inadequate skills in effectively sourcing and applying information. They recommended integrating comprehensive information literacy training into the university curriculum to bolster students' academic success[160]. In another study, the link between information literacy and creativity among undergraduates in federal universities in Southwestern Nigeria was explored. Their correlational research found that higher levels of information literacy significantly predicted greater creativity among students, which is closely associated with improved academic performance[161].

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During the COVID-19 pandemic lockdown, a study examined how information literacy skills influenced the use of electronic resources among undergraduates in selected public universities in Lagos State. Using a descriptive survey design, the study revealed that students with higher information literacy competencies were more adept at utilizing electronic resources, thereby maintaining academic performance during remote learning periods[162].

Furthermore, the information literacy skills of Library and Information Science students at Delta State University and Ambrose Alli University was assessed. The survey-based study found that while students possessed basic information literacy skills, there was a pressing need for enhanced training programs to further develop these skills, which are essential for academic research and overall academic achievement[163].

These studies highlight the relevance of information literacy in academic attainment. Students that are digitally proficient not only have easier access to and usage of academic materials, but they also engage more successfully with digital learning platforms, which adds to higher learning outcomes and academic achievement.

**2.3.2.3 Cybersecurity Awareness and Students' Academic Achievement**

A study explored the global significance of enhancing cybersecurity awareness within educational institutions. The study underscores that improved cybersecurity knowledge among students leads to better protection of sensitive information and supports a more secure learning environment, indirectly benefitting academic achievement[164] . Another study conducted in Ebonyi state, Nigeria, revealed a significant negative correlation between exposure to cybersecurity threats such as students' academic achievement, unauthorized access, phishing and malware[165] .

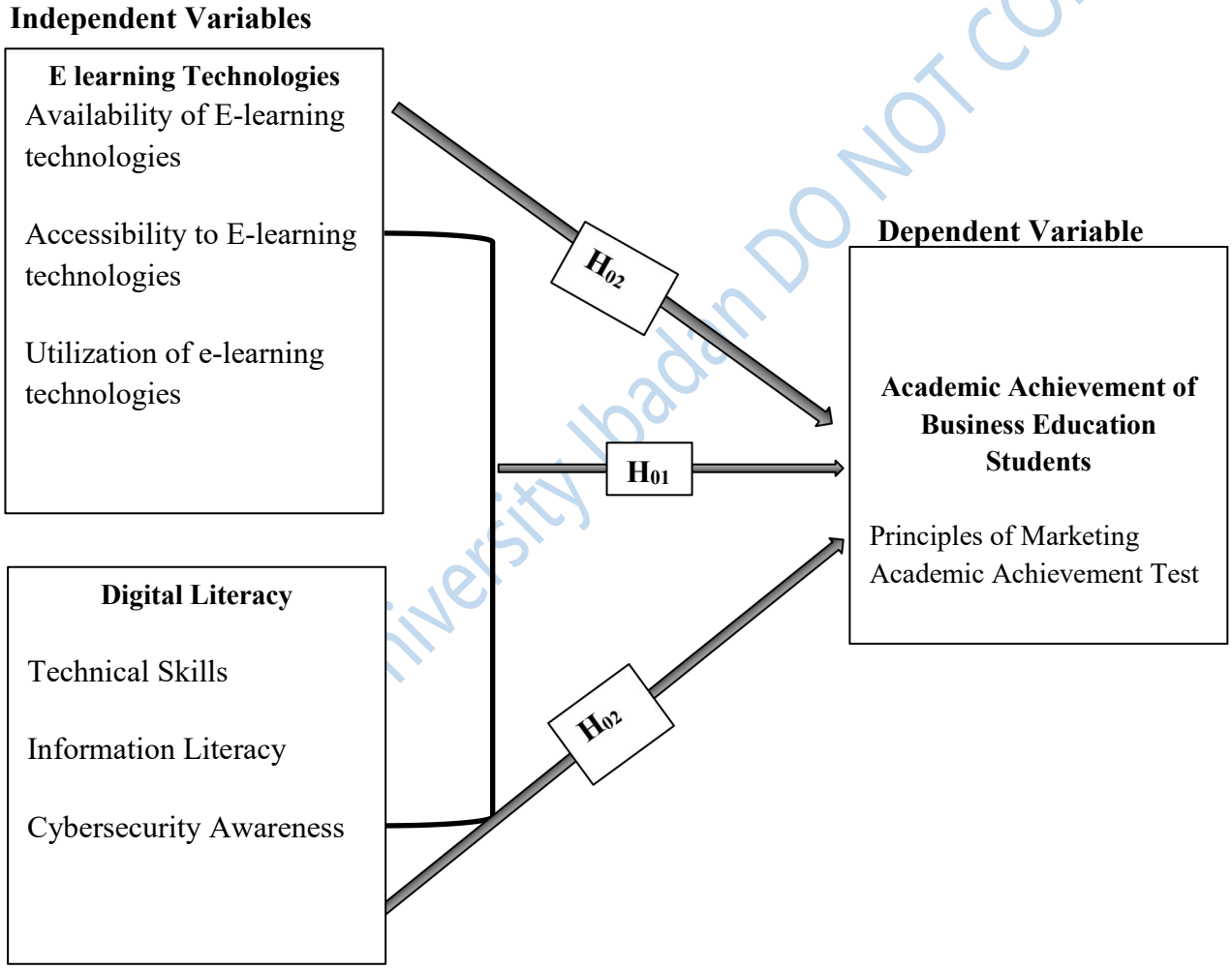
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The study emphasized the need for enhanced cybersecurity measures to safeguard academic integrity[166]. A study published analysed the cybersecurity awareness levels among university students in Nigeria, the result indicated that while students have basic knowledge in some areas, there is need for cybersecurity education to enhance academic experiences[167].

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## 2.4 Conceptual Model

This study is anchored on the premise that E-learning and Digital Literacy play significant roles in determining the Academic Achievement in Principles of Marketing among Business Education students. The conceptual framework below shows the relationship between the independent variables (e-learning and digital literacy) and the dependent variable (academic achievement).




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**Figure 2. 1:** Conceptual Model

**Source:** Researcher, 2025

The conceptual framework illustrated above presents the assumed relationship between e-learning, digital literacy, and academic achievement in Principles of Marketing among Business

Education students in public universities in Southwest Nigeria. In this study, e-learning is examined using three dimensions: availability of technologies, accessibility to technologies, and utilization of technologies. These indicators represent the extent to which students are equipped with and able to engage meaningfully with digital learning environments.

Digital literacy is explored through technical skills (students' ability to operate digital tools), information literacy (the capacity to find, evaluate, and use digital content), and cybersecurity awareness (knowledge of safe practices in online spaces). These skills are increasingly important in a digitally driven academic environment, especially for Business Education students who are expected to be digitally competent. Academic achievement serves as the dependent variable and refers to students' achievement in their academic tasks and evaluations within the Business Education programme. This model does not presume a direct effect but rather proposes that the relationship among these variables be examined. Guided by Self-Efficacy Theory and Technology Acceptance Model, which emphasizes the role of confidence and perceived competence in learning success as well as readiness or willingness to adopt new technologies, the framework supports the formulation of research questions and hypotheses.

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**2.5 Summary of Reviewed Literature**

The studied research emphasizes the critical role that e-learning, its technologies and digital literacy play in improving students' academic attainment, particularly in Business Education. According to the conceptual analysis, academic accomplishment is influenced by cognitive, emotional, and social development and is measured using a variety of educational measures. In contrast, e-learning has altered instructional delivery by making it more accessible, adaptable, and engaging for both learners and educators. Digital literacy goes beyond technical knowledge

to include critical thinking, ethical use of digital technologies, and the capacity to evaluate and synthesize information. It includes technological, information, and cybersecurity components, all of which have a direct impact on students' ability to participate effectively with e-learning systems. The studies reviewed in this chapter repeatedly demonstrate the relationship between digital proficiency and academic performance. Students with greater digital literacy skills participate more actively in academic work and achieve better learning results.

Bandura's Self-Efficacy Theory and Technology Acceptance Model serves as a theoretical foundation for understanding the psychological and behavioural factors that influence students' utilization of e-learning. Students' confidence in their abilities to use digital technologies has a substantial impact on their motivation and persistence. Empirical research conducted throughout Nigerian colleges demonstrate that access to and use of e-learning technologies is generally limited by infrastructure deficiencies such as low electrical supply, limited internet connectivity, and a lack of training opportunities for both staff and students. Low computer proficiency among instructors and students, high digital infrastructure expenses, and limited government assistance all pose challenges to successful e-learning technologies deployment. However, the examined research demonstrates the enormous potential of combining digital literacy with accessible and well-supported e-learning frameworks to improve academic achievements in Business Education programmes. In the future, strategic investments in infrastructure, training, and digital curriculum creation will be important to closing current gaps and capitalizing on the benefits of e-learning tey7chnology in Nigerian public institutions.

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# Chapter Three

## Methodology

This chapter is concerned with the presentation of the method that was used in carrying out the study and it is presented under the following sub-headings:

3.1 Research Design

3.2 Population of the Study

3.3 Sample and Sampling Techniques

3.4 Description of Research Instruments

3.5 Validity of the Instruments

3.6 Reliability of the Instruments

3.7 Data Collection

3.8 Data Analysis

3.9 Ethical Approval

### 3.1 Research Design

This study adopted a descriptive survey research design, which is appropriate for investigating the existing conditions, practices, and relationships among variables without manipulating any part of the environment. The design enabled the researcher to collect detailed information from a defined population and describe the phenomena under study as they exist in real time. The design allowed exploration of perceptions, usage patterns and academic outcome in a non-intrusive manner, thereby maintaining the natural integrity of the educational environment.

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### 3.2 Population of the Study

The population for this study constituted Undergraduate Business Education students in Public Universities in Southwest Nigeria. As at the time of the study, there were eleven public universities that offer Business Education as a course of study and that makes the total population of the study 4607.

**Table 3.1 Populations of the study**

| S/N | Name of Universities | Total Number of Business Education Students |
|---|---|---|
| 1. | Ekiti State University, Ado-Ekiti | 325 |
| 2. | Federal University Oye Ekiti, Ekiti State | 340 |
| 3. | Lagos State University, Ojo | 336 |
| 4. | University of Lagos, Akoka | 423 |
| 5. | Olabisi Onabanjo University, Ago-Iwoye | 846 |
| 6. | Tai Solarin University of Education, Ijagun, Ijebu-ode | 1825 |
| 7. | Emmanuel Alayande University of Education, Oyo | 178 |
| 8. | University of Ibadan, Ibadan | 88 |
| 9. | Osun State University, Ipetu-Ijesha | 98 |
| 10. | Adekunle Ajasin University, Akungba-Akoko | 120 |
| 11. | Adeyemi Federal University of Education, Ondo | 26 |
| | **Total** | **4607** |

**Source:** Head of Departments

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### 3.3 Sample and Sampling Techniques

The sample for the study was three hundred and sixty-three (363) Business Education students drawn from selected public universities in Ekiti, Lagos, and Oyo states in Southwest Nigeria. This size was chosen based on established conventions in educational research where a sample size between 300 – 400 is considered adequate for descriptive survey designs. The research adopted a multi-stage sampling procedure to select respondents.

In the first stage, the six states were grouped based on geographical proximity, cultural similarities, and linguistic commonalities as follows: Oyo/Osun, Lagos/Ogun, Ekiti/Ondo. In stage two, simple random technique was used to select one state from each group to represent its cluster. This resulted in the selection of Oyo, Lagos, and Ekiti states. In stage three, purposive sampling technique was used to select one public university of the two available in each state. This purposive selection was based on ownership representation, accessibility, and population size. In stage four, stratified random sampling technique was used to select respondents proportionally from the participating public universities to ensure representation across the strata. In the final stage, purposive sampling technique was used to select 200level Business Education students in the selected universities. The focus is on 200level because they are expected to have recently completed the Principles of Marketing course in 100level, thus retaining fresh knowledge, making their experience fresh and relevant for this study. The sample number of the business education students for the study is shown in table 3.2:

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**Table 3.2 Sample Size of the Study**

| S/N | Selected Institution | Number of Business Education students | Sample Number of Business Education Students |
|---|---|---|---|
| 1. | Federal University Oye Ekiti, Ekiti state | 340 | 145 |
| 2. | Lagos state University, Ojo | 336 | 143 |
| 3. | Emmanuel Alayande University of Education, Oyo | 178 | 75 |
| | **Total** | **854** | **363** |

### 3.4 Description of Research Instruments

The research Instruments used for data collection were structured questionnaire titled "E-learning technologies, Digital Literacy, and Academic Achievement Questionnaire (EDLAAQ)" which is made up of 18 items statement and standardized test titled "Principles of Marketing Achievement Test (PMAT)" made up of 20 items statement multiple choice questions, designed by the researcher. To ensure a content validity and a balanced cognitive assessment, a table of specification guided the distribution of 20questions across the cognitive levels of Bloom's taxonomy. The breakdown is presented in the table below;

**Table 3.3 Table of Specification (TOS)**

| Content Area | Knowledge | Comprehension | Application | Analysis | Synthesis | Evaluation |
|---|---|---|---|---|---|---|
| Basic Concepts & Definition | 2 | 1 | 0 | 1 | 0 | 0 |
| Marketing Mix (4Ps) | 1 | 1 | 1 | 0 | 1 | 0 |
| Marketing Segmentation & Targeting | 1 | 1 | 1 | 0 | 0 | 0 |
| Marketing Research & Strategy | 1 | 1 | 1 | 0 | 0 | 0 |
| Promotion, Branding, & CRM | 1 | 2 | 1 | 0 | 0 | 0 |
| Digital Marketing & Feedback | 0 | 1 | 0 | 0 | 1 | 2 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| **Total Items** | **6** | **7** | **4** | **1** | **2** | **2** |

This table shows a balanced distribution of test items across the cognitive level, with 30% focusing on knowledge recall, 35% on comprehension, 20% on application, 5% on analysis, 10% on synthesis, and 10% on evaluation.

### 3.5 Validity of the Instruments

The instruments were subjected to face and content validation through input from the researcher's supervisor and academic experts in the Faculty of Education at Lead City University, Ibadan. Their judgment helped determine how well the items aligned with the content being assessed and their relevance for measuring the variables before receiving the supervisor's final approval.

### 3.6 Reliability of the Instrument

To assess the reliability of the instrument, a pilot test was carried out with 20 Business Education students from University of Ibadan, which is part of the population but excluded from the sample. The reliability analysis was performed using the Cronbach's Alpha method, yielding a coefficient of 0.73 and 0.82. This result indicates that the instruments are both reliable and internally consistent.

### 3.7 Data Collection

Data was collected through a google form-based questionnaire distributed electronically. To enhance response rate and ensure proper coverage, class WhatsApp platforms was used as primary medium of dissemination. Each selected university had a class representative/departmental leader who served as a liaison for the study. These representatives assisted in sharing the online form directly with their classmates and encouraging participation

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by clarifying the purpose of the research and assuring them of confidentiality and voluntary participation.

### 3.8 Data Analysis

The data collected from the respondents were analysed using both descriptive and inferential statistical methods. Descriptive statistics including frequencies, percentages, means, and standard deviations were used to analyse the research questions while the inferential statistics including multiple regression was employed to analyse the hypotheses. All hypothesis were tested at 0.05 level of significance.

### 3.9 Ethical Approval

The Ethical approval for this study was obtained from the Research Ethics Committee of Lead City University, Ibadan. All participants were informed about the purpose of the study, and their participation was entirely voluntary. Informed consent was obtained from the respondents and confidentiality of responses was ensured. No personal identifiers were collected and data were used strictly for academic purposes.

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# Chapter Four

## Results and Discussion of Findings

This chapter presents, analyse, and interpreted the data retrieved from the respondents in other to achieve the objectives and test the hypotheses formulated in the study. Three institutions in Southwest Nigeria were selected for the study. From the sample of 363 business education students, 301 valid responses were gathered through the google form-based questionnaire, thus accounting for 82.9% retrieval rate.

### 4.1 Demographic Data Analysis

**Table 4.1 Frequency table showing the institution of the Respondents**

| Demographic Variables | Frequencies (F) | Percentage (%) |
|---|---|---|
| **School** | | |
| Federal Universities Oye Ekiti, Ekiti State | 130 | 43.2 |
| Lagos State University, Ojo | 121 | 40.2 |
| Emmanuel Alayande University of Education, Oyo | 50 | 16.6 |
| **Total** | **301** | **100** |

***Source: Fieldwork, 2025***

Table 4.1 showed the respondents name of institution, where 43.2% (130 respondents) are from Federal University Oye Ekiti, 40.2% (121 respondents) are from Lagos State University, and 16.6% (50 respondents) are from Emmanuel Alayande University of Education. This indicates that majority of respondents were drawn from Federal University Oye-Ekiti, a federal institution, followed by Lagos State University, a state university while Emmanuel Alayande University of Education, a state-owned university, had the lowest number of respondents. This spread across

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both federal and state public universities in Southwest Nigeria ensuring diversity in perspectives and supports the generalizability of the study's findings.

**Table 4.2: Frequency Table showing gender distribution of the Respondents**

| Gender | Frequency | Percentage(%) |
|---|---|---|
| Female | 159 | 52.8 |
| Male | 142 | 47.2 |
| **Total** | **301** | **100** |

***Source: Fieldwork, 2025***

Table 4.2 showed that 159 respondents in the study representing 52.8 are female business education students while 142 respondents representing 47.2% are males. This indicates a skewed gender distribution among the respondents, providing insight into how both male and female students engage with e-learning technologies and digital literacy in relation to their academic achievement in Principles of Marketing and Business Education.

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## 4.2. Research Questions

**Research Question One:** What is the level of academic achievement of Business Education Students in Principle of Marketing in Public Universities in Southwest Nigeria?

**Table 4.3 Frequency Distribution Table showing the level of academic achievement of Business Education Students in Principle of Marketing in Southwest Nigeria**

| Academic Level | Frequency | Percentage (%) | Cumulative Percentage (%) |
|---|---|---|---|
| **0-39% (Poor)** | - | - | - |
| **(0-5)** | | | |
| **40-59% (Fair)** | 147 | 48.8 | 48.8 |
| **(6-10)** | | | |
| **60-79% (Good)** | 85 | 28.2 | 77.0 |
| **(11-15)** | | | |
| **80% - 100 (Excellent)** | 69 | 22.9 | 100.0 |
| **(16-20)** | 301 | 100.0 | |
| **Total** | | | |
| **Mean = 2.74** | **Standard Deviation = .809** | | |

***Source: Fieldwork, 2025***

Table 4.3 presents the academic achievement levels of Business Education Students in Principles of Marketing across public universities in Southwest Nigeria.

Out of the 301 respondents, 147 students (48.8%) fell within the fair category having scored between 6 and 10 marks (40 -59%). 85 students (28.2%) scored between 11 and 15marks (60-79%), placing them in good category. 69 students (22.9%) achieved between 16 and 20 marks (80 – 100%), categorized as Excellent. Notably, no student was recorded in the poor category (0-5 marks, 0-39%), suggesting a minimum level of competence among all respondents.

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The mean score of 2.74 (on a 1-4scale) and standard deviation of 0.809 reflect that most students clustered around the "Good" performance level. This distribution shows that while the significant portion (48.8%) of students is only achieving a Fair level, a combined 51.1% (Good + Excellent) performed above average, indicating a moderate academic achievement overall.

**Research Question Two:** What is the level of e-learning technologies (availability, accessibility, and utilization) among Business Education students in relation to their academic achievement in Principles of Marketing in Public Universities in Southwest Nigeria?

**Table 4.4 Level of E-learning Technologies among Business Education Students**

| S/N | E-learning Technologies | SA | A | D | SD | Mean | Std Dev. |
|---|---|---|---|---|---|---|---|
| | **Availability of E-learning Technologies** | | | | | | |
| 1. | My university provides internet access like campus Wi-Fi, ICT centres for Students | 44 (14.6%) | 48 (15.9%) | 65 (21.6%) | 144 (47.8%) | 1.97 | 1.107 |
| 2. | My university has e-learning platforms such as Moodle, google classroom, telegram or WhatsApp learning groups | 24 (8.0%) | 110 (36.5%) | 94 (31.2%) | 73 (24.3%) | 2.28 | 0.922 |
| 3. | E-resources like online handouts, recorded lectures, and e-textbooks are made available by lecturers | 22 (7.3%) | 111 (36.9%) | 74 (24.6%) | 94 (31.2%) | 2.20 | 0.967 |
| | **Grand Average Mean = 2.15** | **Decision = Low level** | | | | **6.45** | **2.996** |

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| Accessibility of E-learning technologies | SA | A | D | SD | Mean | Std Dev. |
|---|---|---|---|---|---|---|
| 4. I can easily access e-learning platforms on my phone or laptop without much difficulty | 22 (7.3%) | 140 (46.5%) | 58 (19.3%) | 81 (26.9%) | 2.34 | 0.955 |
| 5. The school or department provides orientation or support on how to use e-learning platforms | 59 (19.6%) | 67 (22.3%) | 111 (36.9%) | 64 (21.3%) | 2.55 | 1.034 |
| 6. I can afford data or internet subscriptions needed for e-learning activities | 29 (9.6%) | 173 (57.5%) | 21 (7.0%) | 78 (25.9%) | 2.51 | 0.982 |
| **Grand Average Mean = 2.47** | | **Decision = Low level** | | | **7.4** | **2.971** |
| **Utilization of E-learning Technologies** | **SA** | **A** | **D** | **SD** | **Mean** | **Std Dev.** |
| 7. I use online platforms to attend classes when physical lectures are not held | 78 (25.9%) | 112(37.2%) | 50 (16.6%) | 61 (20.3%) | 2.69 | 1.069 |
| 8. I complete assignments or tests using digital platforms like google forms or Learning Management System | 46 (15.3%) | 110 (36.5%) | 84 (27.9%) | 61 (20.3%) | 2.47 | 0.981 |
| 9. I participate in WhatsApp, telegram or google meet class discussions as part of my academic work | 130 (43.2%) | 169 (56.1%) | 2 (0.7%) | - | 3.43 | 0.508 |
| **Grand Average Mean = 2.86** | | **Decision = Moderate level** | | | **8.59** | **2.558** |
| **Weighted Mean (x) = 2.49** | | **Decision = Low level** | | | | |

***Source: Fieldwork, 2025***

**Decision Rule/Threshold for mean interpretation:**

1.0 – 1.75 = very low; 1.76 – 2.50 = low level; 2.51 – 3.25 = Moderate level; 3.26 – 4.00 = High Level

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Table 4.4 presents a descriptive analysis of the level of e-learning technologies among business education students based on three major indicators: availability, accessibility, and utilization. The analysis of items under availability revealed that students reported a low level of e-learning technologies. The average mean score for availability was 2.15, which falls below the threshold of 2.50 for moderate level. For instance, internet access such as campus Wi-Fi, and ICT Centres (Mean =1.97) was rated lowest, indicating that a significant proportionate of students do not have reliable internet access. Also, availability of e-learning platforms like Moodle, Google Classroom, or WhatsApp group (Mean 2.28), and e-resources like online handouts and recorded lectures (Mean – 2.20) were below the expected moderate level.

This suggest that public universities in southwest may not have adequately provided foundational infrastructure required for effective e-learning among Business Education students, which can negatively influence their academic engagement and achievement in courses like Principles of Marketing.

The average mean score for accessibility was 2.47, also indicating a low level of accessibility. While close to the moderate threshold, it still reflects significant limitations. Items such as the ability to access e-learning platforms on personal devices (Mean 2.34) orientation or support usage (Mean = 2.55) and affordability of data subscriptions (Mean 2.51) reveal that students face challenges accessing e-learning resources even when they are available. This limited accessibility could further constrain their participation in digital academic activities and affect their academic achievement.

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In contrast, utilization of available e-learning tools showed a moderate level with an average mean of 2.86. students appear to make use of online platforms to attend classes when physical lectures are not held (Mean = 2.69), complete assessments via digital platforms (Mean = 2.47), and engage in class discussions through platforms like WhatsApp and Google meet (Mean 3.43). The relatively high utilization despite low availability and accessibility indicates a high level of resilience among students and a willingness to adapt to digital learning, using whatever tools are within their reach

Combining the three indicators, the overall weighted mean is approximately 2.49, which falls within the low-level category. This means that, overall, the level of e-learning technologies – considering availability, accessibility and utilization among business education students is not sufficient to support high academic achievement in Principles of Marketing. This limited infrastructure and access could hinder the effectiveness of e-learning, although students show a moderate tendency to utilize what is available.

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**Research Question Three:** What is the level of digital literacy among Business Education students in relation to their academic achievement in Principles of Marketing in Public Universities Southwest Nigeria?

**Table 4.5 Level of Digital Literacy among Business Education Students**

| S/N | Digital Literacy | | | | | | |
|---|---|---|---|---|---|---|---|
| **Technical Skills** | | **SA** | **A** | **D** | **SD** | **Mean** | **Std Dev.** |
| 1. | I can use basic computer tools like Microsoft word, Excel, or Power point for my school work | 98 (32.6%) | 112 (37.2%) | 72 (23.9%) | 19 (6.3%) | 2.96 | .905 |
| 2. | I know how to log in and use online learning platforms like google classroom, Zoom, Telegram, WhatsApp or school portal | 101 (33.6%) | 156 (51.8%) | 19 (6.3%) | 25 (8.3%) | 3.11 | .850 |
| 3. | I can fix small problems like poor audio or video during online classes or while using my phone/laptop for school | 92 (30.6%) | 142 (47.2%) | 19 (6.3%) | 48 (15.9%) | 2.92 | 1.002 |
| | **Grand** | | | | | **8.99** | **1.8552** |
| **Average Mean = 3.00** | | **Decision = Moderate Level** | | | | | |
| **Information Literacy** | | **SA** | **A** | **D** | **SD** | **Mean** | **Std Dev.** |
| 4. | I can search reliable information online for my assignments and research projects | 78 (25.9%) | 134 (44.5%) | 36 (12.0%) | 53 (17.6%) | 2.79 | 1.020 |
| 5. | I know how to check if the Information I find online is useful and correct | 68 (22.6%) | 198 (65.8%) | 2 (0.7%) | 33 (11.0%) | 3.0 | .821 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6. | I can compare different online sources and pick the one that makes the most sense | 103 (34.2%) | 154 (51.2%) | 44 (14.6%) | - | 3.20 | .672 |
| **Grand** | | | | | | **8.99** | **2.513** |
| **Average Mean = 3.00** | | **Decision = Moderate level** | | | | | |
| **Cybersecurity Awareness** | | **SA** | **A** | **D** | **SD** | **Mean** | **Std Dev.** |
| 7. | I know how to protect my personal information like passwords while using the internet | 73 (24.3%) | 188 (62.5%) | 40 (13.3%) | - | 3.11 | .604 |
| 8. | I am careful not to click on suspicious links or messages online | 124 (41.2%) | 107 (35.5%) | 51 (16.9%) | 19 (6.3%) | 3.12 | .907 |
| 9. | I can tell when a website or email address might be fake or harmful | 88 (29.2%) | 133 (44.2%) | 21 (7.0%) | 59 (19.6%) | 2.83 | 1.059 |
| **Grand** | | | | | | **9.06** | **2.57** |
| **Weighted Mean (x) = 3.00** | | **Decision = Moderate level** | | | | | |

***Source: Fieldwork, 2025***

**Decision Rule/Threshold for mean interpretation:**

– 1.75 = very low; 1.76 – 2.50 = low level; 2.51 – 3.25 = Moderate level; 3.26 – 4.00 = High Level

Table 4.5 presents a descriptive analysis of the level of digital literacy among business education students based on three major indicators: technical skills, information literacy, and cybersecurity awareness. The findings revealed that business education students possess moderate level of digital literacy across the three key indices with an overall average mean of 3.00.

The students indicated moderate proficiency in using basic computer applications such as Microsoft Word, Excel and PowerPoint for academic purposes (Mean = 2.96). They also reported a slightly higher level of competence in logging in and navigating online learning platforms like Google Classroom, Zoom, WhatsApp, and school portals (Mean = 3.11). however,

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their ability to troubleshoot minor issues such as poor audio or video during online classes was the lowest among the items (Mean = 2.92), though still within the moderate range.

These findings suggest that students possess essential technical skills needed to engage with digital learning tools but may face limitations in independently resolving technical disruptions. This moderate level of digital literacy is sufficient for basic academic tasks and online participation, yet it may not fully support advanced digital engagement required for optimal academic achievement particularly in courses like principles of marketing that demand independent information handling, presentation, and communication using digital platforms. Enhancing these skills could therefore contribute to improved academic outcomes.

The analysis of items under information literacy revealed that students generally demonstrated a moderate level of competence in evaluating and using online information for academic work. The average mean score of 3.00 which falls within the moderate range based on the decision threshold. Specifically, students reported highest ability in comparing online sources and selecting the most reasonable option (Mean = 3.20), while their ability to search for reliable academic information online had the lowest rating (Mean = 2.79), indicating some difficulty in identifying trustworthy academic sources. Their ability to check the correctness and usefulness of online information is also moderate (Mean = 3.00).

This suggests that while students are reasonably capable of navigating digital transformation, their skills in critically evaluating the quality and reliability of sources, crucial for effective academic research in subjects like principles of marketing, still need strengthening. Without

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improvement, gaps in these skills may affect the depth and credibility of their academic outcomes.

The analysis of student's cybersecurity awareness also showed a moderate level of digital safety skills, with an average mean of 3.02. Students demonstrated the strongest awareness in avoiding suspicious links or messages online (Mean = 3.12), followed closed by protecting personal information while using the internet (Mean = 3.11). however, their ability to identify fake or harmful websites and emails was slightly lower (Mean = 2.83), though still within the moderate category.

This reflects that while students generally understand basic cybersecurity practices, their ability to recognize sophisticated threats may be limited. For a course like principles of marketing where students might engage with digital platforms, emails, research tools, and search engines, strengthening cybersecurity awareness is essential to avoid disruptions and ensure safe access to learning resources.

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### 4.3 Hypotheses

$H_{01}$: There will be no significant combined influence of e-learning technologies and digital literacy on the Academic Achievement of Business Education students.

**Table 4.6 Multiple Regression Analysis and Model Summary on the combined influence of E-learning Technologies and Digital Literacy on Academic Achievement in relation to principles of marketing among business education students in public universities in Southwest, Nigeria**

**R= .657a**
**R2=.432**
**Adj.R2=.428**
**Std. Error Est.= 2.776**

| Models | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| 1 Regression | 1744.217 | 2 | 872.108 | 113.148 | .000 |
| Residual | 2296.893 | 298 | 7.708 | | |
| **Total** | | **300** | | | |

Dependent Variable: Academic Achievement of Business Education Students in Principle of Marketing

***Source: Fieldwork, 2025***

Table 4.6 presents that the combined influence of e-learning technologies and digital literacy on the academic achievement of Business Education students in public universities in Southwest Nigeria is statistically significant, (F (2, 298) = 113.148, p = .000), which is less than the 0.05 alpha level of significance. The result yielded an R-value of 0.657, indicating a strong positive

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relationship between the independent variables (e-learning technologies and digital literacy) and students' academic achievement. The $R^2$ value of 0.432 implies that 43.2% of the variation in students' academic achievement is explained by the combined effect of the two predictor variables.

The Adjusted $R^2$ of 0.428 suggests a slightly reduced explanatory power after adjusting for the number of predictors in the model. This indicates that the model reliably predicts students' academic achievement based on their use of e-learning technologies and level of digital literacy.

Therefore, the null hypothesis which states that there will be no significant combined influence of e-learning technologies and digital literacy on the academic achievement of Business Education students is hereby rejected. It is thus concluded that e-learning technologies and digital literacy significantly influence the academic achievement of Business Education students in public universities in Southwest Nigeria.

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**$H_{02}$:** There will be no significant relative influence of e-learning technologies and digital literacy on the Academic Achievement of Business Education students.

**Table 4.7 Multiple Regression Analysis and Model Summary on the relative influence of E-learning Technologies and Digital Literacy on Academic Achievement in relation to principles of marketing among business education students in public universities in Southwest, Nigeria**

| Model | Unstandardized Coefficients | | Standardized Co-efficient | | |
|---|---|---|---|---|---|
| | B | Standard Error | Beta | t | Sig (p-value) |
| **Constant** | -3.721 | 1.130 | | -3.294 | .001 |
| **E-learning** | 2.941 | .322 | .425 | 9.134 | .000 |
| **Digital Literacy** | 2.967 | .367 | .376 | 8.090 | .000 |

Dependent Variable: Academic Achievement of Business Education Students in Principle of Marketing

***Source: Fieldwork, 2025***

The result of the multiple regression analysis in Table 4.7 shows the relative influence of e-learning technologies and digital literacy on the academic achievement of business education students in principles of marketing. The findings reveal that both e-learning technologies and digital literacy significantly contribute to students' academic achievement. Specifically, e-learning technologies have a standardized beta coefficient of 0.425 with a t-value of 9.134 and a

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p-value of 0.000. This indicates that e-learning technologies have a significant and positive influence on academic achievement, and the influence is statistically significant at $p < 0.05$. Digital literacy also shows a significant positive influence with a standardized beta coefficient of 0.376, a t-value of 8.090, and a p-value of 0.000. Between the two predictors, e-learning technologies exert a relatively greater influence on academic achievement compared to digital literacy, as indicated by the higher beta value. Therefore, the null hypothesis which stated that there would be no significant relative influence of e-learning technologies and digital literacy on academic achievement is rejected.

### 4.4 Discussion of Findings

The findings on the first objective of the study revealed that Business Education students in Public Universities in Southwest Nigeria demonstrated a moderate level of academic achievement in Principles of Marketing. While a portion of the students performed above average, falling into the good and excellent categories, a large percentage remained within the fair performance range. This pattern suggests although there is evidence of academic competence among the students, there is still room for significant improvement. The results are consistent with previous studies that point to infrastructural challenges, ineffective teaching methods, and limited student engagement as key factors influencing performance in business related courses[1,2,3].

The findings on the second objective revealed that the level of e-learning technologies among business education students is generally low. This is evident from the responses gathered across the dimensions of availability, accessibility, and utilization. The availability and accessibility of e-learning technologies among business education students in public universities is low. This is

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likely to constrain their ability of the students to engage effectively with digital learning resources, which can negatively influence their academic achievement in principles of marketing. When essential e-learning technologies such as internet access, e-learning platforms, and digital resources are insufficient or difficult to reach, students face challenges in participating fully in online lectures, accessing course materials, and completing assignment efficiently.

However, the moderate level of e-learning platforms despite these limitations suggests that students are making best use of available resources, engaging actively in class discussion and completing assignments through digital means. This proactive utilization can mitigate some negative effects of limited availability and accessibility, supporting moderate academic achievement. Nonetheless, without improved provision and easier access to these technologies, students' academic achievement in Principles of Marketing may be hindered, as consistent and seamless engagement with learning materials is critical for understanding and applying the course contents.

These findings corroborate with previous studies indicating that inadequate e-learning infrastructure correlates with lower student academic achievement, emphasizing the need for institutional support to enhance both resource availability and access[4,5,6].

The finding on the third research question revealed that students possessed a moderate level of digital literacy, including technical skills, information literacy, and awareness of cybersecurity practices. Under the technical skills, many students are moderately comfortable with basic digital tools and tasks, such as using computer tools, logging into platforms, and navigating basic troubleshooting. However, this may indicate a noticeable gap in more advanced technical

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independence which could influence their academic achievement in business education courses like principles of marketing. In the sense that, limited technical problem-solving skills could affect their ability to fully utilize digital learning environments for their academic work.

In terms of information literacy, students show a fair ability to search for, verify, and compare digital information. This indicates a growing awareness of how to find and evaluate learning materials, a skill essential in business education courses like principles of marketing. However, some students still face challenges in critically analysing online content, which could influence the depth and accuracy of their academic work. Principle of marketing demands a certain level of independent inquiry and engagement with information. Students are expected to search for and evaluate marketing trends, strategies and draw insights from real-world examples to ensure what is learnt is not just theoretical. These academic tasks rely heavily on information literacy, especially the ability to locate, assess, and apply reliable and relevant digital sources. Where students are unable to effectively assess the usefulness of online content, their coursework such as assignments, group presentation and discussion may be hindered.

Cybersecurity awareness appears moderately developed. Students are generally cautious about protecting personal information and avoiding suspicious messages or websites. However, a small percentage still lack skills to recognize phishing attempts or fake sites, which could lead to security risks or distractions in the digital learning space. In essence, while students are not entirely lacking digital literacy, there is a clear need for targeted interventions to help them move beyond basic competence toward advanced digital fluency. Such improvements could enhance

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their confidence, engagement, and ultimately, their achievement in business education courses like principles of marketing.

These findings align with existing literature that noted that students with stronger technical skills are more engaged academically, leading to better academic achievement and another that emphasized that digital literacy significantly enhances student academic achievement, especially in contexts where digital learning is involved[7,3]. These affirm that a students' ability to access, evaluate and apply digital tools meaningfully contributes to academic achievement.

Finally, the Hypothesis one tested confirmed a significant combined influence of e-learning technologies and digital literacy on academic achievement. This implies that academic achievement of business education students in the digital era is not solely dependent on availability, access, and utilization of e-learning technologies but rather on the intersection of both. This implication is that when students access and utilize reliable e-learning technologies and the digital literacy needed to navigate those platforms effectively, they are more equipped to achieve better academically. These findings support earlier studies that emphasize a synergetic relationship between digital competence and digital infrastructure[9,10]. It aligns with literature indicating that students achieve better outcomes academically when digital tools are supported by adequate training, orientation, and consistent integration into teaching and learning processes.

The analysis of second hypothesis, relative influence showed that both e-learning technologies and digital literacy significantly predicted students' academic achievement, with e-learning technologies exerting a relatively stronger influence. This implies that the presence, integration,

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and usage of digital learning tools, platforms, and resources play a more decisive role in enhancing students' achievement other than digital literacy skills alone.

However, this doesn't downplay the importance of digital literacy. The significant influence of digital literacy suggests that students still need to possess the skills to navigate and make meaningful use of digital tools and platforms (e-learning technologies). But ultimately, even well-developed digital skills may not translate to academic achievement if the technological infrastructure itself is weak or unavailable.

These findings echo prior research that emphasizes the role of functional digital literacy and accessible e-learning technologies in shaping academic achievement[8,6,3]. It underscores the importance of prioritizing both technological investment and capacity building to improve students' academic achievement in a digitally mediated learning context.

In essence, public universities seeking to enhance academic achievement among business education students should not view technological investment and student's training in isolation. Rather, a dual focus approach that enhance both access to technologies and development of digital competencies is necessary to create a meaningful learning experience that leads to measurable academic improvement.

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# Chapter Five

# Conclusion

## 5.1 Summary of Findings

The findings of the study revealed important insights into the academic achievement of Business Education students in Principles of Marketing course in Southwest, Nigeria, and how it is influenced by e-learning technologies and digital literacy. The results from the first research question revealed the level of academic achievement among the students was found to be moderate (mean = 2.74). The second research question study revealed a generally low level of e-learning technologies across the board (mean = 2.49). With result of the third research question students demonstrated a moderate level of digital literacy across three domains - technical skills, information literacy, and cybersecurity awareness (mean = 3.00).

The study also tested the combined and relative influence of the two independent variables, e-learning technologies and digital literacy, on students' academic achievement. The results from multiple regression analysis indicated that both variables jointly had a statistically significant influence on academic achievement ($F(2,2298) = 113.148$, $R^2 = 0.428$, $p < 0,05$). Further analysis of their relative influence showed that e-learning technologies had a stronger predictive power on academic achievement ($\beta = 0.425$, $t = 9.134$, $p < 0.05$), followed by digital literacy ($\beta = 0.376$, $t = 8.090$, $p < 0.05$).

## 5.2 Conclusion

Based on the findings, the study concludes that both e-learning technologies and digital literacy have a significant influence on the academic achievement of Business Education students in Principles of Marketing across public universities in Southwest Nigeria. Specifically, the

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availability, accessibility, and utilization of e-learning technologies were found to moderately support students' academic achievement, though notable gaps remain in infrastructure and consistent usage. Likewise, students' levels of digital literacy including technical skills, information literacy, and cybersecurity awareness were moderately developed, indicating their ability to engage with digital learning tools but also revealing areas for further improvement. These competencies directly contributed to students' ability to access, process, and apply academic content effectively.

Also, there is a need for a dual approach of e-learning technologies and digital literacy that strengthens the access to digital infrastructure and digital competencies to enhance better learning outcome based on the findings indicated that the combined influence of e-learning technologies and digital literacy produced a statistically significant impact on academic achievement where e-learning demonstrated a slightly stronger relative influence, though both were essential. The results underscore the importance of institutional investment in digital capacity building and structured support for technology integration in pedagogy. Educators and policymakers must prioritize both technological access and digital competency development to foster improved academic achievement and future-readiness among Business Education students.

### 5.3 Recommendation

1. Public universities in Southwest Nigeria should invest in the availability and accessibility of modern e-learning technologies such as high-speed internet (Wi-Fi), functional ICT centres, and learning management systems (e.g., Moodle, Google Classroom). This will bridge the infrastructural gap and enhance digital engagement among Business Education students.

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2. Institutions should organize regular digital literacy workshops for students to strengthen their technical skills, information literacy, and cybersecurity awareness. This will equip them with the necessary competencies to navigate online academic resources and platforms confidently.
3. Lecturers and academic staff should be encouraged and trained to constantly incorporate e-learning tools into the delivery of business education courses like Principles of Marketing. This will increase the utilization rate of available technologies and improve student interaction with course content.
4. Institutions should promote the establishment of digital literacy clubs or peer mentoring systems where students with strong digital competencies can support others. This encourages collaborative learning and reinforces practical application of digital skills.
5. Helpdesks or digital support centres should be established in faculties to assist students facing challenges with e-learning platforms or digital tools, ensuring inclusive learning experiences for all.

### 5.4 Contribution to Knowledge

This study makes several important contributions to knowledge. It provides up-to-date empirical insight into the availability, accessibility, and utilization of e-learning technologies among Business Education students in public universities in Southwest Nigeria, highlighting specific infrastructural and platform gaps faced by these institutions. By incorporating digital literacy as a multidimensional construct including technical skills, information literacy, and cybersecurity awareness, the research advances understanding of how students' digital competence influences academic achievement in business education courses such as Principles of Marketing. The study further establishes a statistically significant relationship between e-learning technologies, digital

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literacy skills and academic achievement, reinforcing theoretical perspectives while offering practical evidence for enhancing learning outcomes through digital tools and skills. Uniquely, the research offers context-specific findings tailored to the educational environment of Nigerian public universities, providing policymakers and educators with culturally relevant data to guide digital integration efforts. Finally, the combined use of achievement tests and structured questionnaires sets a methodological precedent that can inform and guide future investigations in the field of business education and student achievement.

### 5.5 Suggestion for Further Studies

Future research could explore the long-term impact of enhanced e-learning technologies and digital literacy interventions on students' academic achievement across various disciplines beyond Business Education. Additionally, qualitative studies may provide deeper insights into the personal and institutional barriers affecting e-learning adoption and digital competence. Investigating the role of socio-economic factors, student motivation, and faculty readiness in relation to digital learning outcomes would also enrich understanding. Expanding the geographic scope to include other regions of Nigeria or comparative studies between public and private universities could offer broader perspectives and inform more inclusive educational policies.

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## Appendix I

**Questionnaire on E-learning technologies and Digital Literacy**

Dear Respondents,

This questionnaire is a part of a research thesis on the study of E-learning Technologies, Digital Literacy and Academic Achievement of Business Education Students in Public Universities in Southwest Nigeria. All information given shall be strictly used for research purposes. Therefore, your cooperation in filling the questionnaire unbiased is humbly solicited for. Thank you.

Yours sincerely,

_____

Fadun Toluwawumi A.
Research Student

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**Section A – Demographic Information of the Respondents**

**Instructions:** Please respond to the questions below by ticking (✓) as appropriate.

Name of Institution: _____

Gender: Male [ ]; Female [ ]

**Section B: E-learning Technologies**

**Instruction (s):** Kindly tick (✓) the box that represents the accurate answer as appropriate. Note: SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree.

| **Availability of E-learning Technologies** | | | | | |
|---|---|---|---|---|---|
| **S/N** | **Items** | **SA** | **A** | **D** | **SD** |
| 1. | My university provides internet access like campus Wi-Fi, ICT centres for Students | | | | |
| 2. | My university has e-learning platforms such as Moodle, google classroom, telegram or WhatsApp learning groups | | | | |
| 3. | E-resources like online handouts, recorded lectures, and e-textbooks are made available by lecturers | | | | |
| **Accessibility of E-learning Technologies** | | | | | |
| 4. | I can easily access e-learning platforms on my phone or laptop without much difficulty | | | | |
| 5. | The school or department provides orientation or support on how to use e-learning platforms | | | | |
| 6. | I can afford data or internet subscriptions needed for e-learning activities | | | | |
| **Utilization of E-learning Technologies** | | | | | |
| 7. | I use online platforms to attend classes when physical lectures are not held | | | | |
| 8. | I complete assignments or tests using digital platforms like google forms or Learning Management System | | | | |
| 9. | I participate in WhatsApp, telegram or google meet class discussions as part of my academic work | | | | |

**Section C: Digital Literacy**

| **Technical Skills** | | | | | |
|---|---|---|---|---|---|
| 10. | I can use basic computer tools like Microsoft word, Excel, or Power point for my school work | | | | |
| 11. | I know how to log in and use online learning platforms like google classroom, Zoom, Telegram, WhatsApp or school portal | | | | |
| 12. | I can fix small problems like poor audio or video during online classes or while using my phone/laptop | | | | |

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| | | | | | |
|---|---|---|---|---|---|
| | for school | | | | |
| **Information Literacy** | | | | | |
| 13. | I can search reliable information online for my assignments and research projects | | | | |
| 14. | I know how to check if the Information I find online is useful and correct | | | | |
| 15. | I can compare different online sources and pick the one that makes the most sense | | | | |
| **Cybersecurity Awareness** | | | | | |
| 16. | I know how to protect my personal information like passwords while using the internet | | | | |
| 17. | I am careful not to click on suspicious links or messages online | | | | |
| 18 | I can tell when a website or email address might be fake or harmful | | | | |

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## Appendix II

**Questionnaire on PMAT**

**Instruction:** Choose the correct answer from the options provided

1. What is the primary goal of marketing? (a) to sell products (b) to produce goods (c) to satisfy customers' needs (d) to maximize profit
2. Which of the following best defines 'market'? (a) a place for shopping (b) group of buyers and sellers (c) advertising channel (d) sales department
3. How does marketing differ from selling? (a) marketing focuses on customer's needs, selling focus on products (b) marketing is short term, selling is long term (c) marketing involves price only, selling involves product (d) marketing is cheaper than selling
4. Why is marketing important for a business (a) it improves production (b) it helps identify customer's needs (c) it reduces costs (d) it increases taxes
5. What are the 4Ps of marketing mix (a) product, price, place, promotion (b) people, process, price, product (c) price, promotion, people, packaging (d) product, place, price, packaging
6. Which element of the marketing mix focuses on distribution channels? (a) price (b) place (c) product (d) promotion
7. A company offers discounts during the holidays to increase sales. Which marketing mix element is this? (a) product (b) price (c) promotion (d) place
8. If a company opens new stores in different cities to reach more customers, this is an example of which marketing mix (a) product (b) price (c) place (d) promotion
9. What does market segmentation mean? (a) dividing the market into groups of buyers (b) increasing sales through ads (c) reducing production costs (d) to avoid competitors
10. Why do companies use market segmentation (a) to focus marketing efforts of specific groups (b) to increase prices (c) to avoid competitors (d) to reduce product quality
11. A company targets customers based on age and income. Which segmentation type is this? (a) behavioural (b) demographic (c) geographic (d) psychographic
12. If a business promotes eco-friendly products to environmentally conscious buyers, which segmentation is this? (a) geographic (b) demographic (c) behavioural (d) psychographic
13. What is marketing research (a) a method to design products (b) collecting data to make marketing decisions (c) advertising a product (d) selling to customers
14. How does marketing research benefit businesses? (a) help understand customer preferences (b) reduces employees' numbers (c) increases advertising budget (d) decreases, product quality
15. What is the main goal of promotion in marketing? (a) to inform and persuade customers (b) to lower prices (c) to improve production (d) to build factories
16. How does branding benefit a company? (a) builds customer loyalty (b) reduces costs (c) increases taxes (d) limits product availability
17. Sending personalized emails to customers to encourage repeat purchases is an example of which marketing strategy? (a) branding (b) customer relationship management (c) advertising (d) pricing
18. What is digital marketing (a) advertising using the internet and digital technologies (b) selling products door to door (c) printing flyers (d) making phone calls
19. Why is feedback important in marketing (a) helps improve products and services (b) increases production costs (c) reduces sales (d) limits customer reach

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20. A company uses social media polls to learn customer opinions. Which digital marketing tools are they using? (a) email marketing (b) online surveys (c) television ads (d) radio jingles

**Correct answers to the Principles of Marketing Achievement Test (20 multiple-choice questions):**

1. C – to satisfy customer's needs
2. B – a group of buyers and sellers
3. A – marketing focus on customer's needs, selling focus on products
4. B – it helps to identify customers' needs
5. A – Product, price, place, promotion
6. B- Place
7. B – price
8. C – Place
9. A- dividing the market into groups of buyers
10. A – to focus marketing efforts on specific groups
11. B- demographic
12. C – Demographic
13. B – collecting data for marketing decisions
14. A – help understand customer preferences
15. A – to inform and persuade customers
16. A - build customer loyalty
17. B – Customer relationship Management
18. A – advertising using the internet and digital technologies
19. A – helps improve products and services
20. B – Online survey

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## Bio-data

**A. Personal Data**

| | |
|---|---|
| Full Name: | Toluwawumi Adesewa FADUN |
| E-mail: | toluwawumifadun@gmail.com |
| Phone Number: | +2348106547815 |
| Date and Place of Birth: | 23rd October, 1998 |
| Name and Address of Next of Kin: | Toluwanisegun Fadun – First Baptist Mission House, Oke Ejigbo, Ila Orangun, Osun state. |
| Nationality: | Nigerian |

**B. Educational Background with Dates**

| | |
|---|---|
| Federal University Oye Ekiti | 2018-2021 |
| Osun State College of Education, Ila Orangun | 2013 - 2017 |

**C. Working Experience with Dates**

| | |
|---|---|
| Contract Lecturer, Federal University, Oye Ekiti | 2023 |
| Secretary, HOD Insurance, Niger Delta University (NYSC) | 2022 |
| Business Studies Tutor, St Augustine Comprehensive High School | 2020 |
| Computer Operator, Baptist Group of Schools, Ila Orangun | 2016 -2018 |
| Business Studies Tutor, Baptist Group of Schools, Ila Orangun | 2015 |

**D. Award and Fellowship (If any):**

Departmental Prize for the Best Graduating Student in the Department of Business Education, Faculty of Education, Federal University, Oye Ekiti 2019/2020 Academic session

**E. Membership of Academic/Professional Bodies:**

| | |
|---|---|
| Teachers Registration Council of Nigeria (TRCN) | 2021 |
| Chattered Institute of Human Resources management (ACIHRM) | 2022 |
| The Chattered Institute of Project Management, Ghana (CIPM) | 2022 |
| Chattered Institute of Contract Project and Facility Management (CICPFM) | 2022 |
| The American Academy of Project Management (AAPM) | 2022 |

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## F. Publications:

### Published Refereed Conference Proceedings

Fadun T.A & Adeleke O.M (2025). Parenting Education as Catalyst for Sustainable Development and Social Responsibility. In Proceedimg of 7th Biennial International Conference, Faculty of Education, Lead City University.

Ayeni D.O & Fadun T.A (2025). Equity, Diversity, and Inclusivity in Business Education: Strategies to an Improved Learning Environment. In Proceeding of 2nd Multidisciplinary International Conference, The Postgraduate College, Lead City University.

Fadun T.A & Ayeni D.O (2025). Digital Literacy and Academic Achievement in Principles of Marketing among Business Education Students in Public Universities in Public Universities in Southwest Nigeria. In Proceeding of 2nd Multidisciplinary International Conference, The Postgraduate College, Lead City University

### Papers Accepted for Publication

Fadun T.A., Adeleke O.M, & Ayeni D.O. (2025). Parenting Education as Catalyst for Sustainable Development and Social Responsibility. LCU Journal of Pedagogical Studies (Accepted for Publication).

Digital Literacy and Academic Achievement in Principles of Marketing among Business Education Students in Public Universities in Public Universities in Southwest Nigeria. Journal of Capital Development and Behavioural Sciences (Accepted for Publication).

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**The University Compliance Certificate**

This is to certify that the thesis by Toluwawumi Adesewa FADUN with the matric number LCU/PG/006080 in the Department of Arts and Social Science Education, Faculty of Education, Lead City University, Ibadan Oyo State, Nigeria is in full compliance with the approved University format and style.

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**Signature** **Date**