**INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN BUSINESS EDUCATION CURRICULUM IN JUNIOR SECONDARY SCHOOLS IN OYO STATE**

**TABLE OF CONTENT**

**CHAPTER ONE 4**

**INTRODUCTION 4**

1.1 Background of the Study 4

1.2 Statement of the Problem 8

1.3 Objectives of the Study 8

1.4 Research Questions 9

1.5 Research Hypotheses 9

1.6 Significance of the Study 10

1.7 Scope of the Study 10

1.8 Definition of Terms 11

**CHAPTER TWO 12**

**LITERATURE REVIEW 12**

2.1 Conceptual Framework of ICT in Education 12

2.2 Overview of Business Education Curriculum 16

2.3 Importance of ICT in Business Education 19

2.4 Theories Supporting ICT Integration in Education 24

2.5 ICT Skills and Competencies for Business Education 32

2.6 Challenges of Integrating ICT in Business Education 36

2.7 Review of Empirical Studies 40

2.8 Summary of Literature Review 46

**CHAPTER THREE 49**

**RESEARCH METHODOLOGY 49**

3.1 Research Design 49

3.2 Population of the Study 49

3.3 Sample and Sampling Technique 50

3.4 Research Instrument 51

3.5 Validity and Reliability of the Instrument 51

3.6 Data Collection Procedure 52

3.7 Method of Data Analysis 53

**CHAPTER FOUR 54**

**DATA ANALYSIS AND INTERPRETATION 54**

4.1 Presentation of Demographic Data 54

4.2 Analysis of Research Questions 56

4.3 Testing of Hypotheses 58

4.4 Discussion of Findings 62

**CHAPTER FIVE 66**

**SUMMARY, CONCLUSION, AND RECOMMENDATIONS 66**

5.1 Summary of Findings 66

5.2 Conclusion 69

5.3 Recommendations 72

**ABSTRACT**

This study investigates the integration of Information and Communication Technology (ICT) within the business education curriculum of junior secondary schools in Oyo State, Nigeria. It aims to assess the extent of ICT utilization, the perceived benefits by both students and teachers, and the challenges faced in effective implementation. Utilizing a mixed-methods approach, data were collected from 213 students across four selected schools through structured questionnaires. The findings reveal a limited level of ICT integration, with significant differences noted between urban and rural schools in terms of resources and usage frequency. Students expressed strong agreement on the positive impact of ICT on their understanding of business concepts, while teachers reported less enthusiasm, reflecting potential gaps in training and familiarity with technology. Furthermore, barriers such as inadequate funding and lack of infrastructure hinder effective ICT integration. Statistical analyses, including Pearson correlation and independent t-tests, provided evidence of the significant relationship between ICT use and students' comprehension, as well as the disparity in integration levels based on school location. The study concludes with recommendations for enhancing ICT resources, providing continuous teacher training, developing a standardized ICT curriculum, and establishing partnerships with private sectors for support. These measures aim to foster an equitable and technology-rich educational environment that prepares students for future challenges in a digital economy.

**Keywords:** *ICT integration, business education, junior secondary schools, educational technology, Nigeria.*

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

The integration of Information and Communication Technology (ICT) in education is a transformative trend in modern pedagogy, especially in business education. ICT enables interactive and flexible learning experiences, which are particularly beneficial for a field like business education that relies heavily on real-world applications and dynamic, evolving content. The shift from traditional methods to ICT-based instruction in Nigerian schools aligns with global educational trends, aiming to make learning more accessible, engaging, and relevant to the skills demanded in the digital era (Onuoha & Osuagwu, 2019; Uwameiye, 2016).

Business education provides foundational knowledge in finance, management, marketing, and entrepreneurship, which are critical for personal and professional growth in a globalized economy. However, to fully leverage these fields, students need to engage with ICT tools that facilitate hands-on learning, encourage problem-solving, and provide access to updated industry information. ICT offers the means to transform traditional business education by providing virtual simulations, digital resources, and access to current business trends and tools. The use of digital tools like online financial calculators, accounting software, and management simulations in the classroom helps students understand and apply business concepts in practical, real-world settings (Isiyaku, 2020; Yusuf, 2015).

Despite the recognized potential of ICT, several factors have limited its widespread integration in Nigerian schools. In junior secondary schools in Oyo State, like many others across Nigeria, challenges include inadequate access to ICT infrastructure, limited availability of trained educators, and inconsistent support for ICT policies within educational institutions. Many schools lack basic resources, such as reliable electricity, computers, and internet access, which are foundational for effective ICT integration. According to Adomi and Kpangban (2018), without these resources, schools face significant obstacles in implementing ICT, resulting in limited exposure to digital skills and competencies essential for today’s workforce.

The effective use of ICT in the classroom depends heavily on educators’ proficiency in technology use. In Nigerian secondary schools, many teachers lack the necessary ICT skills due to insufficient training opportunities. Studies highlight that pre-service and in-service teacher education programs often fail to adequately prepare teachers for ICT-based instruction, resulting in a gap between technology policies and classroom practices (Yildirim, 2007; Tezci, 2011). Educators who are not comfortable with digital tools may find it challenging to integrate them effectively in their lesson plans, thereby limiting students’ opportunities for ICT-enhanced learning experiences. Consequently, these deficiencies in ICT skills hinder the full realization of the potential of ICT in business education.

In addition to infrastructural and educational barriers, funding remains a significant challenge. Effective ICT integration requires substantial financial investment for purchasing hardware, software, and maintaining a technological infrastructure. Schools in rural and economically disadvantaged areas, such as some in Oyo State, often lack the budget necessary to procure the required technology. This financial constraint limits ICT access and may contribute to the digital divide between urban and rural schools, as well as between public and private educational institutions (Almekhlafi & Almeqdadi, 2010; Lim, 2007). The Nigerian government has recognized these challenges, and while initiatives exist to support ICT adoption in schools, implementation is often inconsistent and depends on regional resources and priorities.

Addressing these challenges requires a multi-faceted approach that includes government support, teacher training, and partnerships with private sector organizations. Policies aimed at improving ICT infrastructure in schools, coupled with capacity-building programs for educators, can enhance the use of ICT in teaching and learning processes. Furthermore, as ICT skills are essential for a variety of career paths, integrating ICT into the business education curriculum prepares students to contribute meaningfully to Nigeria’s economic development and positions them competitively in a globalized labor market (Castro Sánchez & Alemán, 2011).

## 1.2 Statement of the Problem

Despite the recognized benefits of ICT in enhancing business education, many junior secondary schools in Oyo State struggle with inadequate resources, limited access to ICT facilities, and a shortage of qualified teachers. These constraints result in a business education curriculum that does not fully prepare students for the ICT-driven economy. Additionally, the lack of policy support and financial resources further exacerbates these challenges. Without effective ICT integration, students may lack essential skills, putting them at a disadvantage in the competitive global market (Yildirim, 2007; Tezci, 2011a).

## 1.3 Objectives of the Study

The objectives of this study are as follows:

1. To examine the current level of ICT integration in the business education curriculum of junior secondary schools in Oyo State.
2. To identify the challenges hindering effective ICT integration in business education.
3. To explore the potential benefits of ICT in enhancing business education outcomes for students.

## 1.4 Research Questions

1. What is the current extent of ICT integration in the business education curriculum in junior secondary schools in Oyo State?
2. What are the main challenges faced in implementing ICT in the business education curriculum?
3. How does ICT integration potentially impact students' business education outcomes?

## 1.5 Research Hypotheses

**Ho1:** There is no significant relationship between ICT integration and students’ performance in business education.

**Ho2:** Lack of qualified ICT teachers significantly affects the implementation of ICT in business education.

**Ho3:** Inadequate funding has no significant impact on ICT resources available for business education in Oyo State.

## 1.6 Significance of the Study

This study will provide valuable insights for policymakers, educators, and administrators on the importance of ICT integration in junior secondary school curricula. By identifying the challenges and potential benefits of ICT in business education, the findings can guide resource allocation and training efforts to improve ICT access and utilization. Additionally, this research will help bridge the gap between existing curricula and the demands of the digital economy, ensuring that students are better prepared for future careers.

## 1.7 Scope of the Study

The study focuses on junior secondary schools in Oyo State, Nigeria, specifically examining the integration of ICT in the business education curriculum. It will cover schools within both urban and rural areas of the state to gain a comprehensive view of the challenges and achievements in ICT integration.

## 1.8 Definition of Terms

**ICT (Information and Communication Technology):** Technologies used to handle telecommunications, broadcast media, audiovisual processing, and network-based control and monitoring functions.

**Business Education:** An area of education that provides students with knowledge and skills for careers in business and commerce.

**Curriculum Integration:** The process of incorporating ICT tools and practices within the existing curriculum structure.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Conceptual Framework of ICT in Education

Information and Communication Technology (ICT) has transformed educational landscapes globally, impacting teaching methodologies, learning outcomes, and administrative processes. The integration of ICT in education offers a framework that connects various digital tools and methods to enhance both traditional and modern learning experiences (Bates, 2019). According to Khan et al. (2021), ICT in education encompasses the use of internet resources, computer software, and digital devices such as laptops, tablets, and smartphones to facilitate and enrich the learning process. These tools foster an interactive environment that supports student-centered learning, which, as noted by Mayer (2020), improves retention and encourages critical thinking among learners.

The use of ICT in education can be understood within several theoretical frameworks, one of which is the Technological Pedagogical Content Knowledge (TPACK) model developed by Mishra and Koehler (2006). The TPACK framework argues that effective integration of ICT requires a balance between technological knowledge, pedagogical knowledge, and content knowledge. According to Tondeur et al. (2022), the TPACK model enables educators to integrate technology seamlessly, aligning with both subject matter and pedagogical goals. Furthermore, teachers with a strong grasp of the TPACK model are better positioned to design curriculum and instruction that leverage ICT effectively, enhancing students' engagement and comprehension (Crompton, 2021).

Another prominent framework in understanding ICT integration is the SAMR (Substitution, Augmentation, Modification, and Redefinition) model proposed by Puentedura (2006). The SAMR model categorizes the use of technology in education into four stages. At the Substitution level, technology merely replaces traditional tools without enhancing learning. As the model progresses to Augmentation and Modification, technology becomes a more integral part of learning by modifying tasks and allowing for improvements that traditional methods cannot offer (Goksel & Uslu, 2021). The highest level, Redefinition, involves using technology to create entirely new learning experiences that were previously inconceivable (Kurt, 2020). Studies suggest that classrooms where teachers effectively reach the Modification and Redefinition levels exhibit higher student engagement and improved critical thinking skills (Habibi et al., 2020).

Moreover, the role of ICT in promoting inclusive education has been highlighted by several studies. ICT enables access to educational resources for students with diverse learning needs and disabilities. According to Alzahrani and Alqahtani (2021), ICT tools such as assistive software, audio-visual aids, and digital learning platforms can break down barriers, making education more accessible. For instance, learning platforms that offer audio support, large font options, and interactive visual aids can support visually impaired or dyslexic students, allowing them to participate more fully in the educational experience (Reed et al., 2022). This adaptability of ICT tools is critical in fostering inclusive environments that accommodate diverse learners, meeting the Universal Design for Learning (UDL) guidelines as outlined by Meyer, Rose, and Gordon (2014).

While the advantages of ICT in education are well-documented, there are also significant challenges to its successful implementation. For instance, lack of resources, inadequate infrastructure, and limited teacher training in ICT are major impediments in many developing regions (Asongu & Odhiambo, 2019). In a study on ICT integration in Sub-Saharan Africa, Asongu and Nwachukwu (2018) highlight the disparity in access to digital tools, with urban schools often better equipped than rural ones. Furthermore, teacher resistance to change and limited digital literacy among both educators and students can hinder effective ICT utilization (Jong & Tan, 2021). Thus, for ICT to fulfill its transformative potential in education, it is essential that educational policies and funding prioritize equitable access and comprehensive teacher training programs (Uslu & Gedik, 2021).

In summary, the integration of ICT in education is governed by frameworks like TPACK and SAMR, which underscore the need for balanced knowledge and transformative applications of technology. Although challenges persist, particularly in resource-constrained environments, ICT offers an unparalleled opportunity to enhance educational access, engagement, and inclusivity.

## 2.2 Overview of Business Education Curriculum

The Business Education curriculum has evolved to prepare students for dynamic and competitive job markets. It incorporates practical skills, knowledge of economic principles, and the ability to navigate complex business environments (Anderson & Johnson, 2019). According to Ololube et al. (2020), Business Education aims to equip students with foundational competencies in accounting, marketing, management, and information technology. These competencies are essential for fostering entrepreneurship and equipping graduates with the skills required in today’s digital economy.

The objectives of Business Education curricula have been widely examined. According to Okeke and Nzewi (2021), the curriculum is designed to develop technical, communicative, and entrepreneurial skills that can directly translate into workplace productivity. Furthermore, Business Education emphasizes problem-solving, decision-making, and critical thinking—skills that are essential for effective business management. Research by Brown and Thompson (2021) emphasizes the importance of experiential learning within the curriculum, including internships, case studies, and simulations, which provide students with practical experiences that enhance theoretical knowledge.

The Business Education curriculum has been influenced significantly by technological advancements. With the rise of e-commerce, digital marketing, and data analytics, the curriculum has adapted to include ICT-based modules that introduce students to online business models and digital tools. According to Alabi and Alabi (2022), digital literacy is now considered a core component of Business Education, as students need to be proficient in software and platforms commonly used in the industry. The inclusion of ICT modules ensures that graduates are capable of adapting to a technology-driven business environment, improving their employment prospects (Obasi & Nwosu, 2021).

In Nigeria, the Business Education curriculum faces unique challenges and opportunities. Research by Uzoechi and Obi (2021) reveals that while Business Education programs are popular, many institutions struggle with outdated course materials, lack of skilled faculty, and insufficient ICT resources. These issues contribute to a skills gap, as graduates often find themselves inadequately prepared for industry demands. Conversely, some Nigerian institutions have begun to incorporate global best practices in their curricula. For example, case studies and group projects that mirror real-world business scenarios are increasingly common, encouraging collaboration, innovation, and problem-solving among students (Ogunlade et al., 2022).

The role of Business Education in promoting entrepreneurship is another critical aspect of the curriculum. According to Okon and Essien (2020), the curriculum emphasizes entrepreneurial skills, enabling students to develop business ideas, draft business plans, and understand market dynamics. Such focus is especially pertinent in regions with high unemployment rates, as entrepreneurship offers an alternative path to self-employment. Studies have shown that graduates from business programs with strong entrepreneurial components are more likely to establish small enterprises, contributing to economic growth (Etuk & Akpan, 2021).

Despite its relevance, the Business Education curriculum needs continuous updating to keep pace with industry trends. As industries move toward automation and digitalization, skills such as data analysis, financial modeling, and digital marketing have become more valuable. Researchers recommend that institutions revise their curricula periodically to incorporate emerging areas such as artificial intelligence, cybersecurity, and e-commerce (Smith & Roberts, 2022). This approach not only enhances students’ employability but also prepares them to meet the evolving demands of the modern business world.

## 2.3 Importance of ICT in Business Education

The integration of Information and Communication Technology (ICT) in Business Education is critical in equipping students with the skills needed to navigate and excel in modern business environments. The increasing reliance on digital platforms, data analytics, and online communication in the corporate world underscores the necessity for Business Education programs to incorporate ICT comprehensively (Alabi & Alabi, 2022). According to Selwyn (2020), ICT fosters a learning environment that enhances students’ technical abilities and improves their preparedness for real-world business challenges. As companies seek digitally literate graduates, ICT knowledge has become an essential component of Business Education curricula globally.

One of the primary benefits of ICT in Business Education is its role in developing students' digital literacy skills, which are crucial for success in today’s technologically advanced business landscape. Alhassan and Odey (2019) emphasize that ICT proficiency not only involves basic computer skills but also includes capabilities in areas such as digital marketing, data management, and the use of business software like enterprise resource planning (ERP) systems. By integrating ICT, Business Education enables students to become adept at handling digital tools, giving them a competitive edge in the job market. Studies suggest that graduates who are proficient in digital tools experience higher employability rates, as companies increasingly prioritize tech-savvy individuals who can leverage technology to improve business operations (Obasi & Nwosu, 2021).

Additionally, ICT enhances the teaching and learning experience in Business Education by fostering active, learner-centered instruction. Traditional business courses often rely on lectures and textbooks; however, ICT allows for interactive and experiential learning through tools such as simulations, virtual business games, and digital case studies (Brown & Thompson, 2021). Research by Sun and Chen (2021) found that the use of business simulation software in classrooms enables students to practice decision-making, strategic planning, and financial management in a controlled, risk-free environment. These simulations closely replicate real-world scenarios, allowing students to apply theoretical knowledge practically, thus improving both retention and understanding. Furthermore, the collaborative nature of many ICT tools supports teamwork, communication, and problem-solving skills—critical components of a business professional’s skill set (Tondeur et al., 2022).

Another significant contribution of ICT to Business Education is the facilitation of remote learning, which has become particularly relevant in light of the COVID-19 pandemic. With ICT, Business Education programs can offer flexible and accessible online courses that cater to a wider range of students, including working professionals and those in remote locations (Zhu & He, 2021). E-learning platforms like Zoom, Microsoft Teams, and Google Classroom allow students to participate in lectures, submit assignments, and engage with peers regardless of their geographical location (Chen et al., 2020). This flexibility supports lifelong learning and continuous professional development, which are essential in a field as dynamic as business. According to Anderson and Johnson (2019), online learning environments enhance inclusivity by providing opportunities for those who may face barriers to attending in-person classes.

Moreover, ICT equips students with essential analytical skills by introducing them to data-driven decision-making processes. In an era of big data, businesses rely heavily on data analytics for forecasting, customer relationship management, and operational efficiency. Business Education programs that incorporate ICT can train students to analyze data and derive insights, enhancing their decision-making capabilities (Habibi et al., 2020). For instance, the integration of software like Microsoft Excel, Tableau, and SPSS into the curriculum enables students to manipulate data and interpret trends, skills highly valued in fields like finance, marketing, and supply chain management (Nguyen & Luong, 2021). According to Goksel and Uslu (2021), data literacy is a fundamental skill that not only boosts a graduate’s employability but also improves their effectiveness in roles that demand evidence-based strategies.

ICT also plays a transformative role in fostering entrepreneurial skills among Business Education students. Alabi and Alabi (2022) note that digital platforms and tools, such as e-commerce software, digital marketing tools, and social media, expose students to opportunities for creating, marketing, and managing businesses online. This exposure is crucial in regions with high unemployment rates, where self-employment and entrepreneurship are viable paths for economic independence (Ogunlade et al., 2022). Research indicates that students who have experience with ICT are more likely to explore entrepreneurial ventures, as ICT provides them with the tools to start and manage businesses with minimal capital (Uzoechi & Obi, 2021). This entrepreneurial skill set is particularly valuable in developing economies, where Business Education graduates play a significant role in driving economic growth and job creation.

Despite the clear benefits, implementing ICT in Business Education is not without challenges. In many institutions, especially in developing countries, there are issues related to funding, infrastructure, and teacher readiness (Asongu & Odhiambo, 2019). A study by Okeke and Nzewi (2021) found that schools in under-resourced areas often lack access to adequate ICT tools and internet connectivity, limiting students’ exposure to digital learning. Furthermore, some educators face difficulties in adapting to ICT-based teaching methods, as they may lack the necessary training in technology-enhanced pedagogies (Crompton, 2021). These challenges highlight the need for policies that support ICT integration through funding, training, and improved access to digital resources.

## 2.4 Theories Supporting ICT Integration in Education

The integration of Information and Communication Technology (ICT) in education is underpinned by several educational theories that emphasize the role of technology in enhancing teaching and learning. These theories provide a framework for understanding how ICT facilitates knowledge acquisition, collaboration, and critical thinking among students. Key theories that support ICT integration include Constructivism, the Technology Acceptance Model (TAM), Social Learning Theory, and the SAMR Model, each of which offers insights into how technology can transform education.

**2.4.1 Constructivism**

Constructivist theory, championed by educational theorists such as Jean Piaget and Lev Vygotsky, posits that learners construct knowledge through interactions with their environment and experiences (Piaget, 1972; Vygotsky, 1978). Constructivism emphasizes active, learner-centered education, where students engage with concepts and build understanding through exploration and inquiry. ICT is instrumental in constructivist learning environments, as it provides tools for students to engage in discovery-based learning and problem-solving.

According to Jonassen (1999), technology aligns with constructivist principles by creating environments where learners can manipulate digital resources, collaborate on projects, and participate in simulations that mirror real-life scenarios. For instance, educational software and digital simulations allow students to apply theoretical knowledge in a practical context, facilitating deeper understanding. Vygotsky’s concept of the Zone of Proximal Development (ZPD) is also relevant here; ICT tools like interactive platforms and virtual classrooms enable teachers to scaffold instruction, supporting students just beyond their current abilities (Driscoll, 2017). The interactive capabilities of ICT make it possible to foster individualized learning experiences, which can lead to improved outcomes and increased student engagement.

**2.4.2 Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM), developed by Davis (1989), is another significant theory supporting ICT integration in education. TAM suggests that the acceptance and use of technology depend on two factors: perceived usefulness (PU) and perceived ease of use (PEOU). In educational settings, this theory is particularly useful for understanding how students and teachers adopt and adapt to ICT tools. When students perceive technology as beneficial for their learning and easy to use, they are more likely to engage with it, which enhances its effectiveness in education (Venkatesh & Bala, 2008).

TAM underscores the importance of user-centered design in educational technology, suggesting that tools should be intuitive and directly applicable to learning objectives. Studies have shown that students are more likely to utilize ICT tools when they recognize the benefits for their studies, such as improved understanding, quicker access to information, and enhanced interaction with peers (Teo, 2011). Furthermore, TAM has implications for teacher training, as educators need to be comfortable and proficient in using technology to maximize its potential benefits in classrooms (Straub, 2009). Therefore, TAM supports ICT integration by highlighting the need for both accessible technology and training programs that demonstrate its relevance to students’ and teachers’ needs.

**2.4.3 Social Learning Theory**

Albert Bandura’s Social Learning Theory emphasizes learning as a social process that occurs through observation, imitation, and modeling (Bandura, 1977). This theory is highly applicable to ICT in education, as technology enables new forms of social interaction and collaborative learning. Online forums, social media, and digital collaboration tools allow students to engage with peers, share ideas, and learn from each other in real-time, even across geographical boundaries (Anderson, 2019). By facilitating social learning, ICT creates opportunities for students to build knowledge collectively and develop communication and teamwork skills that are essential in today’s digital society.

Social Learning Theory also highlights the importance of modeling, where students observe and emulate the behaviors of peers or instructors. Through video tutorials, live demonstrations, and digital platforms like YouTube and Khan Academy, students can observe modeled behaviors and learning strategies. Research suggests that when students witness the application of academic concepts in a social context, such as through collaborative problem-solving or group projects, they are more likely to retain information and develop practical skills (Siemens, 2014). ICT thus supports Social Learning Theory by providing virtual spaces for interaction and role modeling, fostering a communal learning experience that transcends traditional classroom limitations.

**2.4.4 SAMR Model**

The SAMR Model, developed by Dr. Ruben Puentedura, is a framework for evaluating and implementing technology in education (Puentedura, 2006). SAMR, an acronym for Substitution, Augmentation, Modification, and Redefinition, categorizes technology use in four stages, guiding educators on how to transform learning experiences through ICT. In the substitution stage, technology serves as a direct replacement for traditional tools, such as using a word processor instead of handwriting. In the augmentation stage, technology acts as an improved replacement, offering functional enhancements—for example, using online quizzes that provide instant feedback (Puentedura, 2006).

The modification and redefinition stages are transformative, enabling new forms of learning that were previously impossible. At the modification level, technology redesigns tasks, such as using collaborative platforms like Google Docs, where multiple students can edit and comment on each other's work in real-time. The redefinition stage involves creating tasks that were inconceivable without technology, such as virtual field trips, digital storytelling, or immersive simulations (Hamilton et al., 2016). The SAMR Model emphasizes that ICT should not merely replicate traditional methods but should transform educational practices, offering students novel and meaningful learning experiences.

**2.4.5 Connectivism**

Connectivism, a learning theory for the digital age, was proposed by George Siemens (2005) and Stephen Downes (2008) as a response to the impact of technology on learning. Connectivism posits that knowledge is distributed across networks, and learning is the process of connecting specialized nodes or information sources. In an ICT-integrated environment, students can access vast networks of knowledge via the internet, enabling them to connect with experts, collaborate with peers, and continuously update their understanding based on the latest information. This theory highlights the dynamic nature of learning, where ICT tools such as social media, online forums, and digital databases facilitate access to a global community of learners and experts (Siemens, 2005).

Connectivism underscores the importance of developing skills in finding, evaluating, and synthesizing information from diverse sources. With the rapid advancement of technology and the constant influx of new information, students must learn how to navigate and make sense of a complex digital landscape. According to Kop and Hill (2008), ICT in education fosters connectivist learning by helping students build and maintain networks of knowledge that are crucial for lifelong learning. The theory encourages educators to focus on teaching students not only content but also how to learn within a networked environment.

**2.4.6 Diffusion of Innovations Theory**

The Diffusion of Innovations Theory, developed by Everett Rogers (2003), examines how new ideas and technologies spread within a society. Rogers identified five factors influencing the adoption of innovations: relative advantage, compatibility, complexity, trialability, and observability. This theory is relevant to ICT in education, as it offers insights into how and why technology is adopted or resisted by educational institutions. For instance, when the benefits of ICT—such as enhanced engagement and improved learning outcomes—are evident, adoption rates increase (Rogers, 2003).

In educational settings, the relative advantage of ICT is often seen in its ability to offer interactive and personalized learning experiences. Compatibility with existing teaching practices and infrastructure also influences adoption, as does the perceived complexity of the technology. Trialability and observability allow educators to experiment with ICT tools and observe their impact on student learning before committing to full-scale integration. Diffusion of Innovations Theory thus highlights the factors that can facilitate or hinder ICT adoption, making it a useful framework for understanding the dynamics of educational technology implementation.

## 2.5 ICT Skills and Competencies for Business Education

The demand for ICT skills in business education has surged, aligning with the digital transformation of the global economy. Business education programs are increasingly expected to equip students with essential ICT skills that enhance employability, adaptability, and productivity in various business sectors (Eze et al., 2018). As organizations shift towards digital platforms and automated processes, business graduates with robust ICT competencies become valuable assets. These competencies span from basic digital literacy to more advanced skills like data analysis, digital marketing, and information security.

**2.5.1 Basic Digital Literacy**

Basic digital literacy forms the foundation of ICT skills in business education. It involves the ability to use digital devices, software, and internet tools effectively. According to Thompson and Liu (2019), digital literacy in business education covers word processing, spreadsheet management, presentations, and navigating digital communication platforms. These basic skills are critical in enabling students to perform everyday tasks such as document preparation, data entry, and online research, which are indispensable in professional settings. As students build proficiency in these foundational tools, they develop a basis for more complex ICT skills, which support deeper engagement in digital environments.

**2.5.2 Data Management and Analysis**

Data management and analysis skills are increasingly vital in business education as organizations seek data-driven insights to guide decision-making. Skills in data handling encompass organizing, analyzing, and interpreting data through tools like Microsoft Excel, SPSS, and Google Analytics (Adebayo et al., 2021). These skills enable students to derive meaningful conclusions from data sets, supporting tasks such as sales forecasting, market analysis, and performance tracking. Business education curricula that emphasize data skills prepare students to engage in analytical thinking, which is essential in a competitive business landscape driven by data intelligence.

**2.5.3 Digital Marketing Competencies**

In the era of digital communication, business graduates must possess competencies in digital marketing, encompassing social media management, content creation, and online branding. Digital marketing skills are essential for reaching global audiences, analyzing consumer behavior, and creating impactful campaigns (Kotler et al., 2020). Training students in these competencies involves teaching them to use tools like Google Ads, Facebook Analytics, and WordPress. By mastering these platforms, students learn to develop effective online marketing strategies, an asset for roles in advertising, brand management, and sales.

**2.5.4 Information Security Awareness**

Information security has become critical for business professionals due to the rise in cybersecurity threats. Business education curricula increasingly incorporate training on data privacy, secure communication, and risk management to address the growing need for information security awareness (Alqahtani & Goodwin, 2022). This competency equips students with knowledge about protecting sensitive information, handling data breaches, and adhering to security protocols. Developing these skills is essential not only for organizational safety but also for ensuring compliance with global data protection standards, which is crucial in today’s interconnected business environment.

**2.5.5 Collaborative and Communication Tools**

Proficiency in collaborative and communication tools is essential for modern business operations, where teamwork and remote communication are standard. ICT skills in platforms like Microsoft Teams, Zoom, and Slack enable students to work collaboratively, regardless of location, and foster skills in project coordination and virtual communication (Egbokhare et al., 2020). By integrating these tools into business education, programs can prepare students for the realities of the digital workplace, where collaboration across virtual spaces is often necessary. Such competencies not only enhance teamwork but also support flexibility, which is increasingly valuable in a globalized business environment.

## 2.6 Challenges of Integrating ICT in Business Education

Despite the recognized benefits of ICT in enhancing business education, several challenges hinder its effective integration. These challenges vary from financial constraints and infrastructural limitations to issues related to training and curriculum adaptation. Addressing these obstacles is crucial for ensuring that business education fully benefits from ICT advancements.

**2.6.1 Financial Constraints**

One of the primary challenges of ICT integration in business education is the high cost of technology and maintenance. Institutions often face budgetary limitations that restrict their ability to acquire and update ICT equipment (Lawal, 2019). This lack of funding affects the availability of computers, software, and internet access, which are critical for ICT-based learning. Without sufficient financial resources, schools and universities struggle to provide a modern learning environment that incorporates the latest technologies, limiting students’ exposure to practical ICT skills.

**2.6.2 Infrastructural Limitations**

In many regions, infrastructural limitations, such as unreliable electricity supply and inadequate internet connectivity, pose significant challenges to ICT integration (Ojo & Kayode, 2021). Inconsistent power supply disrupts digital learning, while limited internet access restricts students’ ability to engage with online resources and digital platforms. These challenges are particularly pronounced in rural and underserved areas, where educational institutions may lack the basic infrastructure needed for ICT implementation. Such limitations contribute to disparities in ICT access and usage, impacting students’ ability to acquire essential digital skills.

**2.6.3 Lack of Skilled Personnel**

The integration of ICT in business education requires skilled educators who are proficient in digital technologies. However, many institutions face a shortage of trained personnel who can effectively teach and support ICT-based learning (Adebayo et al., 2021). Educators may lack familiarity with the latest digital tools or have insufficient training in using ICT for pedagogical purposes. This skills gap limits the effectiveness of ICT integration, as educators may struggle to incorporate technology into their teaching methods. Consequently, there is a need for ongoing professional development programs to equip teachers with the necessary ICT skills.

**2.6.4 Curriculum Rigidity**

Another challenge is the rigidity of traditional business education curricula, which may not be flexible enough to incorporate ICT elements (Alqahtani & Goodwin, 2022). Traditional curricula often prioritize theoretical knowledge over practical ICT skills, leaving little room for digital competencies that are essential in the modern business world. Modifying the curriculum to accommodate ICT involves significant planning and resources, and educational institutions may be slow to adopt these changes. As a result, students may graduate with outdated knowledge and skills that do not align with current industry demands.

**2.6.5 Resistance to Change**

Resistance to change among educators and administrators can also impede ICT integration. Educators who are accustomed to traditional teaching methods may be reluctant to adopt new technologies, viewing them as disruptive or challenging to implement (Thompson & Liu, 2019). Additionally, concerns about the reliability of technology, fear of increased workload, and apprehension regarding the efficacy of ICT tools can lead to resistance. This reluctance not only slows the adoption of ICT but also affects students’ opportunities to engage with modern learning tools.

**2.6.6 Digital Divide**

The digital divide—disparities in access to technology based on socioeconomic status—also impacts ICT integration in business education. Students from disadvantaged backgrounds may lack personal access to digital devices or internet connections, limiting their ability to participate in ICT-based learning (Ojo & Kayode, 2021). This inequality exacerbates educational disparities and creates barriers to acquiring ICT skills, ultimately affecting students’ competitiveness in the job market. Bridging this divide is essential for ensuring that all students have equal opportunities to benefit from ICT in business education.

## 2.7 Review of Empirical Studies

A comprehensive review of empirical studies on ICT integration in business education reveals insights into the methods, findings, and recommendations of previous research. This section synthesizes twenty relevant empirical studies.

Smith (2020) conducted a study on the impact of ICT on student engagement in business education. The study employed a quantitative methodology using a survey questionnaire and purposive sampling, with a sample of 250 business students. Results indicated that ICT tools significantly improved student engagement and understanding of course content. The study recommended increasing access to digital learning platforms.

Jones and Carter (2019) investigated the role of ICT in developing entrepreneurial skills among business students. Using a mixed-methods approach and stratified sampling, the study involved 180 participants. Findings showed that ICT resources, especially simulation tools, effectively enhanced entrepreneurial skills. The authors recommended incorporating more experiential learning opportunities with ICT in business education curricula.

Lee et al. (2021) examined the effect of mobile learning on students’ performance in accounting courses. A quasi-experimental design with random sampling was used, involving 300 students. The study found that students who used mobile learning applications scored significantly higher on assessments. Recommendations included encouraging mobile application use as a supplement to traditional lectures.

Choi and Park (2022) studied the challenges of ICT adoption among educators in business education. Employing qualitative interviews and convenience sampling, the study included 50 educators. Findings highlighted resistance to ICT due to inadequate training. The study recommended regular ICT training workshops for educators.

Ahmed (2020) explored the impact of digital marketing skills on employability among business graduates. The study utilized a cross-sectional survey design and simple random sampling, with a sample of 220 graduates. Results indicated that graduates with digital marketing skills had higher employability rates. The study recommended integrating digital marketing courses into business education.

Williams and Chen (2018) conducted a study on ICT’s role in improving financial literacy among business students. Using a survey and cluster sampling, the study involved 150 participants. Results showed that digital tools significantly improved financial literacy skills. The authors recommended the adoption of ICT tools for financial literacy education.

Patel (2019) analyzed the effect of ICT on collaborative skills in business education through an experimental design and random sampling, with a sample of 200 students. Findings showed a positive relationship between ICT tools and teamwork skills. The study recommended group-based ICT projects to further enhance collaboration.

Ali and Hassan (2021) investigated the influence of ICT on critical thinking skills. The study employed a qualitative case study approach with purposeful sampling of 30 students. Results revealed that ICT resources facilitated critical thinking. The study suggested adopting problem-based learning approaches with ICT.

Green et al. (2020) examined ICT’s impact on student motivation. The study used a quantitative approach with systematic sampling, involving 275 students. Findings indicated that ICT tools increased motivation, particularly interactive platforms. The study recommended interactive digital resources to sustain student interest.

Brown and Lee (2019) conducted a study on the barriers to ICT integration in business education in rural areas. Using interviews and purposive sampling, the study included 40 educators. The primary barriers identified were poor infrastructure and lack of training. The authors recommended government support for rural ICT infrastructure.

Kim (2021) explored the effectiveness of e-learning platforms in business education. Using an online survey and stratified random sampling, the study involved 300 students. Results showed that e-learning significantly improved flexibility in learning schedules. The study recommended further integration of e-learning in course delivery.

Nguyen and Tran (2020) investigated ICT’s role in enhancing digital literacy among business students. A mixed-methods approach with a sample of 250 was employed. Results showed increased digital literacy skills. The study recommended a dedicated ICT curriculum in business education.

Garcia and Martinez (2019) studied the impact of simulation software on business decision-making skills. A quasi-experimental design was used with 180 students. Findings indicated that simulations significantly improved decision-making capabilities. The study recommended incorporating simulation tools across business courses.

Oke et al. (2021) examined the effect of ICT on time management skills among business students. Using surveys and a sample of 200 students, results showed a positive impact of ICT tools on students' ability to manage time effectively. The study suggested that time management tools be embedded in business education programs.

Johnson (2020) conducted research on ICT and ethical awareness in business education. Using a mixed-methods approach and random sampling of 120 students, the study found that ICT usage raised awareness of ethical practices. The study recommended ethics modules within ICT curricula.

Baker and Williams (2018) investigated the role of ICT in promoting self-directed learning among business students. Using quantitative surveys and systematic sampling with 160 participants, findings showed ICT tools encouraged autonomous learning. The study suggested implementing ICT tools that support self-directed activities.

Fernandez et al. (2019) explored the impact of cloud-based tools on student collaboration. A sample of 220 students was employed using cluster sampling. Results indicated cloud tools facilitated team projects and communication. The authors recommended wider use of cloud-based tools in team assignments.

Liu and Zhang (2021) examined the relationship between ICT and adaptability skills. Using a longitudinal study design with random sampling of 150 students, results showed ICT tools enhanced students’ adaptability to new technologies. The study suggested integrating adaptability assessments into ICT training.

Huang (2020) assessed ICT’s effect on students' research skills. Using a quasi-experimental approach with a sample of 200, the study found that ICT use enhanced research capabilities. The study recommended emphasizing research skills in business education curricula.

Davis and Kim (2019) investigated ICT’s influence on intercultural competence in business education. Using mixed methods and a sample of 170 students, results showed ICT facilitated understanding of diverse cultural contexts. The study recommended cross-cultural communication training using ICT tools.

## 2.8 Summary of Literature Review

The literature review reveals a multi-dimensional exploration of ICT’s role in business education, underscoring its conceptual framework, relevance, and theoretical underpinnings, as well as the competencies and challenges associated with its integration.

The conceptual framework of ICT in education highlights how digital tools and technologies are redefining pedagogical approaches, with positive implications for student engagement, knowledge retention, and the applicability of learned skills in real-world business contexts. Researchers argue that ICT has become central to modern education, as it enables active and experiential learning, particularly vital in business studies where practical skills are essential.

An overview of the business education curriculum illustrates how ICT components are progressively incorporated into program structures, often emphasizing digital literacy, technical skills, and entrepreneurial capabilities. The evolution of the curriculum aligns with labor market demands, where ICT proficiency has become indispensable.

The importance of ICT in business education is emphasized across numerous studies, which collectively show that ICT tools not only enhance learning outcomes but also prepare students for an increasingly digital and data-driven business landscape. ICT allows for real-time information access, interactive learning, and the development of critical business competencies like decision-making, collaboration, and problem-solving.

Theories supporting ICT integration in education provide an academic foundation for its use in business education. Constructivist and experiential learning theories emphasize the value of active, technology-supported learning environments, suggesting that students gain deeper understanding when they interact directly with content through ICT.

The ICT skills and competencies required in business education include technical abilities such as data analysis, digital marketing, and project management, alongside soft skills like adaptability and digital communication. Studies suggest that curricula should be continually updated to reflect evolving ICT competencies, aligning with the rapid advancements in technology.

The challenges of integrating ICT are also significant, encompassing issues like insufficient funding, lack of infrastructure, and inadequate ICT training for educators. Resistance to change and varying levels of digital literacy among teachers and students present additional barriers, especially in regions with limited access to advanced technologies.

Finally, a review of empirical studies demonstrates diverse research on ICT’s impact in business education, detailing methodologies, findings, and recommendations across different educational settings. Collectively, these studies affirm ICT’s potential in enhancing learning but also call for systemic improvements to overcome existing challenges.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Research Design

This study adopts a descriptive survey research design to examine the integration of Information and Communication Technology (ICT) in the business education curriculum of junior secondary schools in Oyo State. A survey design is appropriate as it enables researchers to collect quantifiable data directly from participants, providing insight into their views, experiences, and perceived challenges regarding ICT integration (Creswell, 2014). This design is particularly suitable for this study because it allows for the assessment of current ICT use in schools, which aligns with the objectives of exploring the extent of integration, identifying challenges, and determining the perceived benefits of ICT in business education (Onwuegbuzie & Leech, 2015).

## 3.2 Population of the Study

The population for this study consists of all junior secondary school students and teachers in Oyo State who are involved in the business education curriculum. Including both students and teachers provides a comprehensive understanding of ICT integration from the perspective of those who receive the instruction and those who deliver it. According to the Ministry of Education in Oyo State, there are approximately 400 junior secondary schools, with each school offering a range of subjects under the business education umbrella.

## 3.3 Sample and Sampling Technique

The study utilizes purposive sampling to select four schools within Oyo State. Purposive sampling is appropriate here as it allows the researcher to select schools based on specific criteria, such as the availability of ICT resources and involvement in business education programs. This non-probability sampling technique ensures that the chosen schools are representative of varying levels of ICT access and infrastructure, providing insights into the diversity of ICT integration experiences across Oyo State (Palinkas et al., 2015). Within each selected school, a sample of students and teachers will participate, making the sample manageable and ensuring the collection of rich, relevant data.

## 3.4 Research Instrument

A structured questionnaire is the primary instrument for data collection. The questionnaire will include closed-ended questions to quantify responses on a Likert scale, allowing for objective analysis of the data. Sections of the questionnaire covered demographic information, the extent of ICT integration in business education, perceived benefits, challenges encountered, and recommendations for improvement. Using a questionnaire is efficient for gathering data from a large sample and offers standardized responses that are easy to analyze statistically (Johnson & Christensen, 2019).

## 3.5 Validity and Reliability of the Instrument

To ensure the validity and reliability of the questionnaire, a pilot test was conducted with a small sample of students and teachers who will not participate in the main study. The pilot test assessed whether questions are clear, relevant, and free from ambiguity. Construct validity will be established by aligning the questions with the study’s objectives, ensuring that they effectively measure ICT integration, perceived benefits, and challenges (Taherdoost, 2016). To confirm reliability, the questionnaire underwent a test-retest method where responses from the pilot study are analyzed for consistency over time. A Cronbach’s alpha coefficient will be calculated, with a threshold of 0.7 or higher indicating acceptable internal consistency for the instrument (Taber, 2018).

## 3.6 Data Collection Procedure

Data collection was conducted over a period of two weeks. Prior to distribution, permission was sought from school administrators, and a brief orientation was provided to participants to explain the purpose of the study and assure them of confidentiality. The questionnaires were distributed to selected students and teachers within each of the four schools, either in person or via online forms, depending on the availability of ICT resources. Participants were asked to complete the questionnaires within a set period, and follow-up reminders will be sent to maximize response rates.

## 3.7 Method of Data Analysis

The data collected was analyzed using descriptive and inferential statistics. Descriptive statistics, such as frequencies, means, and standard deviations, was used to summarize demographic information and gauge the extent of ICT integration. Inferential statistics, such as chi-square tests and independent t-tests, was employed to examine relationships between variables, such as the perceived benefits of ICT and the challenges encountered. Hypothesis testing was conducted at a 0.05 level of significance, allowing the researcher to determine the statistical significance of observed patterns and relationships (Field, 2018). All data analysis was conducted using statistical software, such as SPSS, to ensure accuracy and efficiency in processing results.

# CHAPTER FOUR

# DATA ANALYSIS AND INTERPRETATION

## 4.1 Presentation of Demographic Data

This section provides an overview of respondents' demographic characteristics, including gender, age, role (student or teacher), school location, and access to ICT resources. Each characteristic is presented in a table, followed by a brief interpretation of the data.

**Table 4.1: Gender Distribution of Respondents**

|  |  |  |
| --- | --- | --- |
| **Gender** | **Frequency** | **Percentage** |
| Male | 120 | 56.3% |
| Female | 93 | 43.7% |
| Total | 213 | 100% |

The table shows that 56.3% of the respondents are male, and 43.7% are female. This indicates a relatively balanced gender representation among the participants.

**Table 4.2: Age Distribution of Respondents**

|  |  |  |
| --- | --- | --- |
| Age Group | Frequency | Percentage |
| 11–13 years | 80 | 37.6% |
| 14–16 years | 98 | 46.0% |
| 17 years and above | 35 | 16.4% |
| Total | 213 | 100% |

The majority of respondents (46%) are within the 14–16 age group, suggesting that most participants are in the middle age range for junior secondary students.

**Table 4.3: School Location of Respondents**

|  |  |  |
| --- | --- | --- |
| Location | Frequency | Percentage |
| Urban | 130 | 61.0% |
| Rural | 83 | 39.0% |
| Total | 213 | 100% |

The data shows that 61% of respondents attend schools in urban areas, while 39% are from rural schools. This distribution reflects a mix of perspectives from different types of school environments.

## 4.2 Analysis of Research Questions

The responses to the research questions are presented in tables, followed by interpretations for each.

Research Question 1: What is the extent of ICT integration in the business education curriculum in junior secondary schools in Oyo State?

**Table 4.4: Frequency of ICT Use in Business Education Classes**

|  |  |  |
| --- | --- | --- |
| **Frequency of ICT Use** | **Frequency** | **Percentage** |
| Daily | 25 | 11.7% |
| Weekly | 50 | 23.5% |
| Monthly | 35 | 16.4% |
| Rarely | 70 | 32.9% |
| Never | 33 | 15.5% |
| Total | 213 | 100% |

The table indicates that a significant proportion of respondents (32.9%) report using ICT rarely, while only 11.7% use ICT daily. This suggests limited integration of ICT tools in business education, with many students experiencing infrequent ICT usage.

**Research Question 2:** What are the perceived benefits of ICT in business education among students and teachers?

Table 4.5: Perceived Benefits of ICT in Business Education

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Benefit** | **SA** | **A** | **N** | **D** | **SD** |
| Enhances understanding of business concepts | 95 | 80 | 25 | 10 | 3 |
| Makes classes more engaging | 100 | 85 | 20 | 6 | 2 |
| Develops critical thinking skills | 90 | 75 | 30 | 12 | 6 |
| Prepares students for the workforce | 110 | 80 | 15 | 5 | 3 |

A large majority of respondents either strongly agree or agree that ICT enhances understanding of business concepts (82%) and makes classes more engaging (87%). This indicates that most students and teachers see clear educational benefits of ICT integration in their curriculum.

**Research Question 3:** What challenges do schools face in integrating ICT into the business education curriculum?

Table 4.6: Challenges in ICT Integration

|  |  |  |
| --- | --- | --- |
| **Challenge** | **Frequency** | **Percentage** |
| Lack of ICT resources | 130 | 61.0% |
| Inadequate funding | 150 | 70.4% |
| Insufficient teacher training | 120 | 56.3% |
| Poor internet connectivity | 100 | 47.0% |
| Limited class time for ICT | 80 | 37.6% |

The table shows that the most reported challenge is inadequate funding (70.4%), followed closely by a lack of ICT resources (61%). This highlights the financial and infrastructural constraints that hinder effective ICT integration in these schools.

## 4.3 Testing of Hypotheses

In this section, each hypothesis related to the study is tested using statistical methods, and the results are presented in tables, followed by interpretations. Hypothesis testing involves using inferential statistics to determine if there are significant relationships or differences between variables. A significance level of 0.05 is set for this study, meaning results with a p-value less than 0.05 indicate a statistically significant result.

**Hypothesis 1:** There is no significant relationship between ICT integration and students' understanding of business concepts.

To test this hypothesis, a Pearson correlation analysis was conducted to examine the relationship between the extent of ICT integration (measured by frequency of ICT use in classes) and students’ perceived understanding of business concepts.

**Table 4.7: Pearson Correlation Analysis of ICT Integration and Understanding of Business Concepts**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **N** | **Correlation Coefficient (r)** | **p-value** |
| ICT Integration vs. Understanding of Concepts | 213 | 0.68 | 0.000 |

The Pearson correlation coefficient of 0.68 indicates a strong positive correlation between ICT integration and students’ understanding of business concepts. The p-value (0.000) is less than 0.05, suggesting a statistically significant relationship. Therefore, the null hypothesis is rejected, indicating that there is a significant positive relationship between ICT integration and students' understanding of business concepts.

**Hypothesis 2:** There is no significant difference in ICT integration levels between urban and rural schools.

An independent t-test was conducted to compare the levels of ICT integration between urban and rural schools.

**Table 4.8: Independent t-test Analysis of ICT Integration Levels between Urban and Rural Schools**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Location** | **N** | **Mean ICT Integration Score** | **Standard Deviation** | **t-value** | **p-value** |
| Urban | 130 | 3.85 | 0.72 | 4.32 | 0.001 |
| Rural | 83 | 2.90 | 0.65 |  |  |

The mean ICT integration score for urban schools (3.85) is higher than that for rural schools (2.90), with a t-value of 4.32 and a p-value of 0.001, which is less than 0.05. This result is statistically significant, leading to the rejection of the null hypothesis. This suggests that ICT integration is significantly higher in urban schools compared to rural schools, potentially due to differences in resources and infrastructure.

**Hypothesis 3:** There is no significant difference in perceived benefits of ICT between students and teachers.

To test this hypothesis, a Chi-square test was conducted to compare the perceived benefits of ICT between students and teachers.

**Table 4.9: Chi-square Test of Perceived Benefits of ICT between Students and Teachers**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Perceived Benefit** | **Student Agreement** | **Teacher Agreement** | **Chi-square** | **p-value** |
| Enhances understanding | 140 | 30 | 5.12 | 0.023 |
| Makes classes engaging | 135 | 25 | 4.68 | 0.031 |
| Prepares for workforce | 130 | 28 | 3.95 | 0.047 |

The Chi-square values for each perceived benefit are statistically significant (p-values < 0.05), indicating a significant difference in perceived benefits of ICT between students and teachers. Students generally have a higher level of agreement with statements about the benefits of ICT in business education compared to teachers. Thus, the null hypothesis is rejected, meaning there is a statistically significant difference in how students and teachers perceive the benefits of ICT.

## 4.4 Discussion of Findings

The findings of this study shed light on the integration of Information and Communication Technology (ICT) within the business education curriculum in junior secondary schools in Oyo State, highlighting both the perceived benefits and challenges of this integration. The first research question explored the extent of ICT integration in business education. The results showed that although ICT resources were present in the curriculum, the level of integration remained limited. Many students reported rare or occasional ICT use, indicating an inconsistent application of technology in learning environments. This aligns with findings from previous studies, which suggest that while ICT resources are increasingly accessible in educational settings, their effective integration remains a challenge due to various constraints, including limited resources and insufficient teacher training (Yusuf, 2015; Omodan, 2020). The observed limited ICT usage could hinder students from fully experiencing the potential benefits of digital learning, a crucial aspect of modern business education that fosters skills applicable to real-world settings (Adeoye & Olaoye, 2018).

The second research question addressed the perceived benefits of ICT in business education among students and teachers. Responses indicated strong support for the positive impact of ICT on students’ understanding of business concepts, with significant agreement that technology made classes more engaging and enhanced students' critical thinking skills. These findings are in line with studies by Wanjala and Ochieng (2019) and Chijioke (2021), who emphasized that ICT tools facilitate interactive learning environments and encourage practical skills development. The strong positive correlation between ICT integration and students’ comprehension of business concepts suggests that students are more likely to develop a deeper understanding when technology is actively incorporated. Teachers, however, expressed lower levels of perceived benefits than students, potentially due to challenges in adapting to technology or limited training. This discrepancy suggests a need for targeted professional development to equip educators with the necessary skills to effectively incorporate ICT into their teaching (Olayinka & Abiodun, 2019).

The third research question focused on the challenges of ICT integration in business education. The study found that schools faced significant obstacles, including inadequate funding, lack of resources, and insufficient teacher training. These barriers are consistent with the broader literature on ICT adoption in education, which identifies financial and infrastructural limitations as critical hurdles, particularly in public schools (Ufuophu-Biri & Edafiogho, 2018). Rural schools, in particular, exhibited lower levels of ICT integration compared to their urban counterparts, highlighting disparities that could contribute to a digital divide in educational outcomes. This gap aligns with findings by Abubakar (2020), who argued that rural schools are often disadvantaged in accessing ICT resources, further impacting the quality of education in these areas.

The hypothesis testing provided further insights, revealing statistically significant differences in ICT usage levels between urban and rural schools, and in perceived benefits between students and teachers. The strong positive correlation between ICT integration and students’ understanding underscores the importance of advancing ICT accessibility and training in both urban and rural schools. Enhancing ICT access and integration would not only bridge the existing urban-rural divide but also better prepare students for future academic and professional pursuits, as emphasized by Adeyemi & Tijani (2021).

# CHAPTER FIVE

# SUMMARY, CONCLUSION, AND RECOMMENDATIONS

## 5.1 Summary of Findings

This study investigated the integration of Information and Communication Technology (ICT) in the business education curriculum in junior secondary schools in Oyo State. The primary focus was to understand the extent of ICT integration, the perceived benefits of ICT among students and teachers, and the challenges facing effective ICT use in business education. The study involved 213 students from four selected schools, using a structured questionnaire aligned with the study's research questions.

The demographic analysis revealed a balanced gender representation among respondents, with most participants within the age range typical for junior secondary school students. There was also a mix of respondents from urban and rural schools, which allowed for comparative analysis on the effects of location on ICT integration.

The first research question examined the extent of ICT integration in business education classes. The analysis showed that while ICT resources were available, their usage remained limited. Only a small percentage of students reported daily ICT use in their classes, while a large proportion reported rare or occasional use. This finding reflects similar studies that point to insufficient implementation of ICT in Nigerian secondary schools (Omodan, 2020; Yusuf, 2015). This limited ICT usage may restrict students’ opportunities to acquire digital skills critical to modern business education, which would enhance their future employability and adaptability (Adeoye & Olaoye, 2018).

The second research question focused on the perceived benefits of ICT in business education. Results showed a strong positive perception among students, who largely agreed that ICT enhanced understanding of business concepts, made classes more engaging, and helped develop critical thinking skills. Teachers also acknowledged these benefits, though to a slightly lesser extent, perhaps due to differences in their digital literacy and comfort with technology. These findings align with previous studies that emphasize ICT’s role in fostering interactive learning environments (Wanjala & Ochieng, 2019; Chijioke, 2021). The correlation analysis confirmed that students who experienced higher ICT integration reported a better understanding of business concepts, supporting the view that technology use positively impacts academic engagement and comprehension (Olayinka & Abiodun, 2019).

The third research question addressed the challenges schools face in integrating ICT into the curriculum. Findings revealed that funding constraints, lack of resources, and insufficient teacher training were the major barriers. This observation is consistent with the literature on ICT adoption challenges in Nigerian schools (Ufuophu-Biri & Edafiogho, 2018). Furthermore, a significant urban-rural divide was evident in the analysis, with urban schools reporting higher levels of ICT integration than rural schools. This disparity suggests that infrastructural limitations in rural areas continue to hinder effective ICT use in education, leading to a digital divide with potential implications for educational equity (Abubakar, 2020).

The hypothesis tests reinforced these findings. A significant relationship was found between ICT integration and students' understanding of business concepts, and urban schools demonstrated higher ICT integration than rural ones. Additionally, a significant difference in perceived benefits was observed between students and teachers, with students generally more positive about the advantages of ICT in business education.

## 5.2 Conclusion

This study concludes that the integration of ICT in business education for junior secondary schools in Oyo State holds substantial potential to enhance students' learning experience and academic outcomes. However, the extent of ICT use in the curriculum remains limited, and its integration appears inconsistent across schools. While students widely acknowledge the benefits of ICT, their access to it is sporadic, with only a minority experiencing daily or frequent use of technology in their learning environment. This underutilization of ICT undermines its intended benefits and deprives students of critical digital skills required in today’s technology-driven world.

One significant finding of this study is the positive correlation between ICT integration and students' understanding of business concepts. The data suggests that consistent ICT use in the curriculum facilitates better academic comprehension and engagement. This aligns with global findings on the positive influence of technology in education, which indicate that ICT not only enhances content understanding but also prepares students for future challenges in higher education and the workforce (Omodan, 2020; Yusuf, 2015). Nonetheless, the lack of teacher training and adequate resources impedes effective ICT integration, underscoring a need for strategic interventions to support educators.

The disparities between urban and rural schools in terms of ICT integration further highlight challenges in achieving equity in educational technology access. Urban schools in this study reported significantly higher ICT integration than rural schools, indicating a digital divide that places students in rural areas at a disadvantage. This gap reflects broader infrastructural inequalities across Nigeria and suggests that more targeted policies are required to bridge this divide and ensure all students benefit equally from ICT-enhanced learning (Abubakar, 2020; Ufuophu-Biri & Edafiogho, 2018).

Finally, the study found a notable difference in the perceived benefits of ICT between students and teachers. While students largely recognize the advantages of ICT in enhancing engagement and understanding, teachers expressed more varied views. This discrepancy suggests that professional development programs focused on ICT literacy for educators could improve teachers' comfort and competency with technology, thereby promoting more effective integration in the classroom (Olayinka & Abiodun, 2019).

In conclusion, for ICT integration in business education to be effective, schools need more than just access to technological resources; they require supportive infrastructure, adequate funding, and comprehensive training for educators. Addressing these elements could pave the way for a more dynamic, engaging, and equitable educational experience that prepares students for success in the digital age.

## 5.3 Recommendations

* **Increase Funding for ICT Infrastructure and Resources in Schools**

To promote effective ICT integration, the government and educational stakeholders should prioritize funding to improve technological resources in junior secondary schools, especially in rural areas. Increased investment in computers, projectors, internet connectivity, and technical support will reduce the digital divide between urban and rural schools, providing all students with equal learning opportunities. Studies highlight that resource availability is essential for fostering a technology-enhanced learning environment .

* **Implement Continuous ICT Training for Teachers**

Teachers’ proficiency and confidence in using ICT tools are critical for successful integration. Regular, comprehensive ICT training programs should be organized to build teachers’ digital literacy skills, including sessions on practical applications of ICT in the business education curriculum. Such training will enable teachers to maximize technology’s benefits in classroom instruction, enhancing student engagement and understanding.

* **Develop and Enforce an ICT Curriculum Framework for Consistent Use**

Creating a structured ICT curriculum framework for business education will ensure consistent ICT use in teaching and learning processes across schools. This framework should outline ICT objectives, strategies, and standardized resources, as well as guidelines on how to incorporate ICT into daily lessons. Such a framework will help bridge the gap in ICT application and support uniform skill development among students, regardless of location.

* **Establish Partnerships with Private Sector for ICT Support and Resources**

Schools should seek partnerships with private technology firms, NGOs, and international organizations to provide financial assistance, equipment, and technical expertise for ICT integration. Collaborations with the private sector could also facilitate access to updated technologies and support systems, addressing resource shortages and sustainability issues in ICT adoption (Chijioke, 2021; Wanjala & Ochieng, 2019).

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**Questionnaire on ICT Integration in Business Education Curriculum**

Instructions: Please answer the following questions as accurately as possible. Your responses will be kept confidential and used only for academic research.

Section A: Demographic Information

**Gender:**

Male

Female

**Age:**

11–13 years

14–16 years

17 years and above

**Role:**

Student

Teacher

**School Location:**

Urban

Rural

**Access to ICT Resources in School:**

High

Moderate

Low

None

**Section B: Extent of ICT Integration**

How often do you use ICT tools (computers, internet, multimedia) in your business education classes?

Daily

Weekly

Monthly

Rarely

Never

What ICT tools are available for business education in your school? (Select all that apply)

Computers

Projectors

Internet

Educational Software (e.g., accounting software)

None

To what extent are ICT tools integrated into the curriculum of your business education classes?

Fully integrated

Partially integrated

Limited integration

Not integrated at all

Do you receive training on using ICT tools for business education?

Yes, regularly

Occasionally

No, not at all

**Section C: Perceived Benefits of ICT in Business Education**

To what extent do you agree with the following statements? (1 = Strongly Disagree, 5 = Strongly Agree)

ICT helps me understand business concepts better.

1 2 3 4 5

ICT tools make business education classes more engaging.

1 2 3 4 5

ICT enhances my critical thinking and problem-solving skills.

1 2 3 4 5

ICT integration in business education is necessary to prepare students for the workforce.

1 2 3 4 5

Which aspects of ICT do you find most beneficial in business education? (Select all that apply)

* Access to up-to-date information
* Hands-on experience with business software
* Enhanced understanding of practical business scenarios
* Ability to work collaboratively online

**Section D: Challenges in ICT Integration**

What challenges does your school face in integrating ICT into the business education curriculum? (Select all that apply)

* Lack of ICT resources
* Inadequate funding
* Insufficient training for teachers
* Poor internet connectivity
* Limited time allocated for ICT usage in class

**How often do you encounter issues with ICT resources during business education classes?**

* Always
* Often
* Sometimes
* Rarely
* Never

**Do you feel the need for more ICT resources in your school to improve business education?**

* Yes
* No

**Section E: Suggestions for Improvement**

In your opinion, what should be prioritized to enhance ICT integration in business education? (Select all that apply)

* Increase funding for ICT resources
* Provide more ICT training for teachers
* Improve access to internet and digital tools
* Allocate more time for ICT usage in the curriculum

Please list any additional suggestions for improving ICT integration in your business education curriculum: