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EVALUATING THE ROLE OF ICT IN ENHANCING SERVICE DELIVERY IN TERTIARY INSTITUTIONS IN NIGERIA

MOHAMMED HAMIDU

Information and Communication Technology, Rectory Department, Federal Polytechnic Bali, P.M.B. 05, Taraba State.

Corresponding Authors:
mohammedhamidu0671@gmail.com

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Abstract

This study examines the role of information and communication technology (ICT) on improving service delivery in Nigeria's higher education institutions. It delves at how ICT tools and systems have revolutionized administrative, academic, and student services in universities, polytechnics, and colleges of education. The study addresses the benefits of ICT, such as improved productivity, transparency, and accessibility. It also covers the issues related to integrating ICT in Nigeria's higher education sector, such as limiting infrastructure, insufficient money, and digital literacy gaps. Finally, offers for utilizing the potential of ICT in Nigerian tertiary institutions are outlined.

Key words: ICT, Enhancing, Service Delivery, Tertiary and Institutions

Introduction

Information and communication technology (ICT) has altered several industries globally including education. Tertiary institutions in Nigeria have adopted information and communication technology to improve service delivery, simplify operations, and improve the overall learning experience.

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However, the extent of ICT integration varies each institution due to differences in resources, infrastructure, and government aid (Adeyemi & Olalekan, 2021). The major goal of this research is to determine the influence of ICT on service delivery in Nigerian tertiary institutions. In this context, service delivery includes administrative tasks, academic administration, and the support of learning and research activities. This review is critical as Nigeria works to improve the quality and accessibility of higher education in a fast digitalizing global economy (Olatoye & Adesina, 2020). Globally, ICT has become a vital instrument in the education industry. Universities in wealthy countries have effectively integrated ICT into their operations, resulting in advances in teaching, research, and administration. Learning management systems (LMS), virtual classrooms, and e-libraries have become abundant, allowing institutions to reach a worldwide addressee. ICT has enabled more efficient administrative operations, including online admissions, student record management, and academic achievement tracking (Nwafor, 2019).

In developing countries like Nigeria, there is growing recognition of ICT's role in transforming higher education. However, the pace of ICT adoption and its effectiveness in service delivery are influenced by socio-economic factors such as infrastructure, funding, and policy frameworks (Adeyemi & Olalekan, 2021). Despite ICT's transformative potential for improving service delivery in tertiary institutions, Nigerian higher education institutions continue to face significant challenges in fully integrating ICT into their administrative, academic, and research processes. Key difficulties like as inadequate ICT infrastructure, unpredictable energy, poor internet connectivity, and insufficient financing have hampered these institutions' efficient use of technology (Adeyemi & Olalekan, 2021). Furthermore, digital literacy gaps among students, instructors, and administrative personnel, as well as opposition to change, impede ICT tool use (Olatoye and Adesina, 2020). These issues lead to inefficiencies in service delivery, ranging from student registration and record administration to teaching, learning, and research activities (Nwafor, 2019). Given the critical role that ICT plays in modernizing and increasing the quality of higher education

worldwide, it is critical to study how these hurdles might be overcome in order to maximize ICT's influence on Nigerian tertiary institutions. This study seeks to evaluate the current state of ICT integration, its effectiveness in enhancing service delivery, and the steps needed to overcome the existing challenges to ensure that Nigeria's higher education system remains competitive in the global knowledge economy.

The broad objective of this work is to evaluate the role of Information and Communication Technology (ICT) in enhancing service delivery within tertiary institutions in Nigeria, focusing on its impact on administrative efficiency, teaching, learning, and research processes.

The integration of Information and Communication Technology (ICT) in higher education has become a central focus for improving efficiency, accessibility, and the overall learning experience. Globally, ICT has been recognized as a powerful tool for transforming tertiary institutions, enhancing both administrative and academic service delivery. In developing countries like Nigeria, however, the adoption and integration of ICT face unique challenges, requiring thorough exploration to understand its potential and limitations.

Statement of the problem

Despite the rapid advancement of ICT worldwide, many tertiary institutions face inefficiencies in administrative and academic services. Delayed processes, limited access to resources, and suboptimal communication channels impede their operational effectiveness. This study aimed to address these challenges by evaluating how ICT can methodically enhance service delivery, identify barriers, and propose solutions tailored to institutional needs.

Objectives of the study

The purpose of this study is to examine the integration of ICT tools in tertiary institutions to optimize service delivery, increase operational efficiency, and enhance the quality of education provided to stakeholders, which including both students, staff, and administrators.

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The specific objectives are to:

1. Assess the current level of ICT infrastructure in tertiary institutions.
2. Evaluate the integration of ICT in administrative processes within tertiary institutions.
3. Examine the extent of ICT integration in teaching and learning methodologies.
4. Identify challenges hindering the optimal utilization of ICT in tertiary institution service delivery.
5. Propose recommendations for enhancing the ICT support for improved service delivery.

Methodology

The study employed essay type of research writing in which relevant literatures were reviewed in order to come up benefits and challenges on evaluating the role of ICT in enhancing services delivery in tertiary institutions in Nigeria.

Diffusion of Innovation Theory

The integration of Information and Communication Technology (ICT) in education is supported by several theoretical frameworks that provide insight into how technology can enhance service delivery, improve learning outcomes, and transform administrative processes. These theories offer a foundation for understanding the relationship between ICT and educational transformation, particularly in the context of tertiary institutions in Nigeria.

The **Diffusion of Innovation (DOI) Theory** by Everett Rogers (1962) provides a theoretical basis for understanding how ICT is adopted and integrated into educational institutions. According to Rogers, the diffusion of any innovation, including ICT, occurs through five stages: knowledge, persuasion, decision, implementation, and confirmation. The theory categorizes individuals into five groups: innovators, early adopters, early majority, late majority, and laggards based on their willingness to adopt new technologies. In the context of Nigerian tertiary institutions, the DOI theory explains the varying levels of ICT

adoption among different institutions. Some universities are innovators and early adopters, quickly integrating ICT into their administrative and academic processes, while others lag behind due to resistance, lack of resources, or infrastructural challenges (Adeyemi & Olalekan, 2021).

Technology Acceptance Model (TAM)

The **Technology Acceptance Model (TAM)** developed by Davis (1989), offers a theoretical lens to evaluate how users come to accept and use technology. TAM posits that two primary factors influence the acceptance of technology: perceived usefulness (PU) and perceived ease of use (PEOU). Perceived usefulness refers to the degree to which a person believes that using a particular system will enhance their job performance, while perceived ease of use refers to the degree to which a person believes that using a system will be free of effort. Addressing these perceptions through proper training and support can enhance the adoption of ICT, as users become more familiar with the technology and see its benefits in improving efficiency and academic performance.

Constructivist Learning Theory

The **Constructivist Learning Theory** attributed to Piaget and Vygotsky, is based on the idea that learners construct their own understanding and knowledge of the world through experiences and reflection. When applied to ICT, constructivist theory suggests that technology can play a critical role in supporting active, student-centered learning. ICT tools such as virtual classrooms, simulations, and online collaboration platforms enable students to engage in meaningful interactions with content and peers, facilitating a deeper understanding of concepts. This theory supports the argument that ICT can enhance the learning experience in Nigerian tertiary institutions by offering flexible, interactive, and personalized learning opportunities (Adesina & Adepoju, 2019).

Human Capital Theory

The **Human Capital Theory** popularized by Becker (1964), posits that investments in education and training lead to improved productivity and economic growth. From this perspective, integrating ICT into tertiary institutions is seen as an investment in human capital, equipping students and staff with the technological skills and competencies required in the modern workforce. ICT-enabled education prepares students for the demands of a knowledge-driven economy, where digital literacy and proficiency are increasingly critical (Nwafor, 2019).

Actor-Network Theory (ANT)

The **Actor-Network Theory (ANT)** developed by Bruno Latour and others, is a sociological framework that views technological adoption as a result of interactions between various human and non-human actors (e.g., people, technology, policies, and infrastructure). ANT argues that successful technology adoption, such as ICT integration, depends on the coordination and cooperation between these actors.

Resource-Based View (RBV)

The **Resource-Based View (RBV)** theory was introduced by Barney (1991), emphasizes the importance of institutional resources, both tangible and intangible, in gaining a competitive- advantage. When applied to ICT in tertiary education, the RBV suggests that institutions that possess strong ICT resources (such as modern infrastructure, skilled personnel, and robust financial support) are better positioned to deliver high-quality services.

Global Perspective of ICT in Higher Education

This study anchored his work on the theory of Technology Acceptance Model (TAM), developed by Fred Davis (1989). This theory provides a robust framework for understanding how users come to accept and use new technologies. TAM posits that the acceptance of technology is primarily

influenced by two key factors: perceived usefulness (PU) and perceived ease of use (PEOU). Perceived Usefulness (PU) refers to the degree to which a person believes that using a particular technology will enhance their job performance or productivity. Perceived Ease of Use (PEOU) is the degree to which a person believes that using the technology will be free of effort.

Across the globe, ICT has revolutionized how educational institutions operate. In developed countries, ICT tools such as Learning Management Systems (LMS), online libraries, and virtual classrooms have been fully integrated into academic and administrative processes (Alhawiti, 2017). These innovations have led to improvements in teaching methodologies, offering students more interactive and flexible learning environments. ICT has also enhanced administrative functions, enabling more efficient management of student records, fee payments, admissions, and academic tracking systems (Adewale & Adesina, 2018).

ICT Adoption in Nigerian Tertiary Institutions

In Nigeria, tertiary institutions have recognized the importance of ICT for improving service delivery. Over the past decade, efforts have been made to integrate ICT into the operations of universities, polytechnics, and colleges of education (Adeyemi & Olalekan, 2021). The use of ICT has transformed administrative processes such as student registration, record management, and fee payment systems. Online registration portals, for instance, have replaced manual methods, reducing time delays and errors associated with paper-based systems.

Despite these advancements, ICT adoption in Nigerian tertiary institutions has been slow and uneven. Many institutions still rely heavily on traditional teaching methods, with limited access to modern ICT tools for both students and faculty (Olatoye & Adesina, 2020). This slow adoption is largely due to several challenges, including poor infrastructure, digital illiteracy, and inadequate funding.

Benefits of ICT in Service Delivery

The benefits of ICT in enhancing service delivery in tertiary institutions are well documented. ICT enables the automation of routine administrative tasks, which leads to more efficient management of student records, finances, and academic schedules (Nwafor, 2019). Automated systems ensure that information is processed quickly, securely, and with minimal errors. This has improved the transparency and accountability of financial transactions, such as tuition payments, which were previously prone to mismanagement.

Challenges of ICT Adoption in Nigerian Tertiary Institutions

Despite the potential benefits, the integration of ICT in Nigerian tertiary institutions faces several challenges. One of the major barriers is the lack of adequate infrastructure, particularly reliable electricity and internet access. Many institutions are located in areas with poor power supply, which limits the effective use of ICT facilities (Olatoye & Adesina, 2020). Similarly, internet connectivity is often unreliable and expensive, making it difficult for students and faculty to access online resources consistently.

Benefits Identified

Increased Efficiency: ICT tools have significantly streamlined administrative processes, reducing paperwork and manual errors.

Improved Communication: Enhanced communication through email and online portals was highlighted as a major benefit.

Enhanced Research: ICT tools have facilitated better access to research resources and collaboration opportunities.

Flexibility: E-learning platforms have provided flexibility in teaching and assessment methods.

Enhanced Learning Experience: Access to a wide range of online resources and interactive learning tools has improved the overall learning experience.

Convenience: ICT tools have made it easier to manage academic schedules and assignments.

Way Forward of the Study

Based on the findings the study recommendations the following:

Enhanced Training: Institutions should invest in comprehensive training programs for faculty, administrative staff, and students to improve their familiarity with ICT tools and address usability challenges.

User-Friendly Design: ICT systems should be designed with user experience in mind, ensuring that interfaces are intuitive and accessible.

Technical Support: Providing robust technical support and addressing technical issues promptly can enhance user satisfaction and facilitate better ICT adoption.

Infrastructure Improvement: Addressing infrastructure challenges, such as internet connectivity and hardware limitations, is crucial for effective ICT integration

Conclusion

ICT has brought notable improvements to service delivery in Nigerian tertiary institutions, particularly in areas like administration, teaching, and research. However, its full potential is yet to be realized due to challenges such as inadequate infrastructure, insufficient funding, and low levels of digital literacy. Overcoming these challenges is essential to enhancing the quality of education and ensuring that Nigerian institutions remain competitive in the global education sector.

Recommendations

To fully realize the benefits of ICT, institutions should focus on improving training for staff and students to enhance their digital skills. Investments in stable electricity, reliable internet access, and modern ICT facilities are essential to address infrastructural gaps. It is also crucial to develop ICT systems that prioritize user-friendliness and accessibility for all stakeholders. Providing robust technical support will ensure that technical challenges are resolved promptly, improving the user experience. Additionally, increased

funding and resource allocation for ICT development are necessary to maintain and expand technological integration effectively.

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