

The Place of ICTs in Libraries for Excellence in Teaching and Learning Process in Nigerian Tertiary Institutions

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Abstract—Information and Communication Technologies (ICTs) have become integral to academic libraries worldwide, transforming how libraries support teaching and learning. Academic libraries serve as pivotal centers for knowledge acquisition, research, and learning support in tertiary institutions. The integration of ICTs into these libraries has revolutionized traditional library services, enabling faster access to information, digital resource management, and interactive learning environments. In Nigerian tertiary institutions, the adoption of ICTs in libraries has significantly enhanced access to information, resource sharing, and user engagement, thereby promoting excellence in education. This paper examines the role of ICTs in Nigerian academic libraries, their impact on teaching and learning, challenges faced, and recommendations for maximizing their benefits. Using a review of recent studies and case analyses, the paper highlights the critical place of ICTs in fostering an effective educational environment in Nigerian universities.

Index Terms—ICT, library, teaching, education.

1. Introduction

Academic libraries serve as pivotal centers for knowledge acquisition, research, and learning support in tertiary institutions. The integration of ICTs into these libraries has revolutionized traditional library services, enabling faster access to information, digital resource management, and interactive learning environments. In Nigeria, the rapid growth of ICTs, coupled with the challenges of educational development, necessitates a focused examination of how ICTs in libraries contribute to teaching and learning excellence. ICTs in Nigerian university libraries encompass a wide range of technologies including computer systems, internet services, electronic databases, online public access catalogs (OPAC), reprographic technologies, and digital communication tools such as email and social media platforms. These technologies facilitate various library functions such as acquisition, cataloguing, circulation, reference services, and user education, thereby enhancing the efficiency and effectiveness of library services (Akintunde, 2020; Ubogu, 2019). For example, Covenant University Library employs web-based Millennium software, abundant internet-connected computers, and OPAC to support students and faculty in locating and accessing materials efficiently. Faculty members primarily use the

internet to update knowledge, while students utilize it for project completion and research (Lawal-Solarin, 2013). The integration of Information and Communication Technologies (ICTs) into academic libraries in Nigerian tertiary institutions has been widely recognized as a catalyst for improving the quality of teaching and learning. ICTs have transformed traditional library services, enabling improved access to information, enhanced resource management, and interactive learning environments. This review synthesizes key studies on the availability, application, benefits, and challenges of ICTs in Nigerian academic libraries, highlighting their role in promoting educational excellence. Several studies confirm the increasing presence and application of ICT tools in Nigerian university libraries. Abdulkareem et al. (2022) found that University of Ilorin library staff have access to various ICT devices and resources that enhance service delivery, including automation tools and internet connectivity. Similarly, Lawal-Solarin (2013) reported that Covenant University Library is well-equipped with internet-connected computers and web-based software such as Millennium, which facilitate online public access catalog (OPAC) use by students and faculty for locating materials and conducting research. Odionye (2016) examined the University of Nigeria, Nsukka library and found that ICT applications such as OPAC, internet access, and virtual libraries are widely used for cataloguing, circulation, and information retrieval. The study emphasized the role of ICT in automating library routines and improving service efficiency. Shehu and Singh (2021) also highlighted the necessity for university libraries in North-Central Nigeria to adopt ICT-based services to meet the information needs of tech-savvy users and support teaching, learning, and research activities.

2. Theoretical Perspectives

The application of ICT in Nigerian academic libraries is often analyzed through theories such as the Global Village Theory and Technological Determinism, which suggest that ICT facilitates global interconnectedness and drives social and institutional change, respectively (Odionye, 2016). These frameworks underscore ICT's transformative potential in reshaping library services and academic practices.

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3. Impact of ICTs on Teaching and Learning Excellence

ICT integration in academic libraries contributes significantly to enhancing teaching and learning processes. The availability of digital resources and online databases facilitates timely access to up-to-date information, supporting both faculty research and student learning. Lawal-Solarin (2013) noted that faculty primarily use the internet to update knowledge, while students rely on it for project completion and research, indicating ICT's role in academic advancement.

The adoption of ICT also promotes administrative efficiency in tertiary institutions. According to a study on the impact of ICT in Nigerian tertiary education (2022), ICT-enabled administrative services such as online tuition payment and remote submission of assignments enhance institutional efficiency, indirectly supporting academic excellence. Moreover, the Federal Republic of Nigeria's National Policy on Education (2013) mandates the integration of ICT in teaching and learning, reinforcing its importance in educational development (Ajemates, 2023).

4. Challenges Facing ICT Implementation in Nigerian Libraries

Despite the benefits, numerous challenges impede the full realization of ICT potentials in Nigerian academic libraries. Abdulkareem et al. (2022) identified inadequate funding, poor internet bandwidth, lack of skilled manpower, insufficient training, and poor maintenance as major constraints at the University of Ilorin library. These findings align with Ogala and Okerierhie (2021), who reported insufficient financial support and inadequate technological infrastructure as persistent issues across several Nigerian university libraries.

Other studies, such as Odionye (2016), highlight infrastructural deficits and inconsistent power supply as barriers to effective ICT use. Additionally, some librarians' negative attitudes towards ICT adoption and limited user awareness further restrict optimal utilization of ICT resources (Abdulkareem et al., 2022).

5. Benefits of ICT Integration in Nigerian Academic Libraries

ICT has brought multifaceted benefits to Nigerian academic libraries, significantly enhancing their capacity to support teaching and learning.

A. Enhanced Access to Information

ICT has broadened access to a wide range of digital resources such as e-books, online journals, and academic databases, enabling users to obtain relevant and current information efficiently (Ochogu, 2018; Adebayo et al., 2018). This access supports students and faculty in research and project completion, as seen in Covenant University Library where internet use is prevalent for academic purposes (Lawal-Solarin, 2013).

B. Improved Research and Learning

The availability of ICT tools facilitates up-to-date knowledge acquisition, critical for scholarly pursuits. Ajayi and Owolabi

(2019) emphasize that ICTs aid students, researchers, and academics in enhancing their learning and research outcomes.

C. Efficient Resource Management

ICT systems streamline library operations such as cataloging, tracking, and circulation of materials, improving service delivery and resource utilization (Salisu & Ibrahim, 2017; Ogala & Okerierhie, 2021). Automation and database technologies have increased the capacity for information storage and retrieval in Nigerian university libraries (Ogala & Okerierhie, 2021).

D. Global Connectivity and Collaboration

ICT platforms enable Nigerian libraries to connect with international institutions, facilitating knowledge sharing, joint research, and partnerships that enrich academic resources and opportunities (Ogunsola, 2016).

E. Digital Preservation

Libraries use ICT to digitize and preserve cultural heritage materials, ensuring long-term access and safeguarding against physical deterioration (Adebayo et al., 2018).

6. Emerging Technologies and Future Prospects

Recent studies highlight the growing interest in emerging technologies such as artificial intelligence (AI), robotics, and automated systems in Nigerian academic libraries:

A. Artificial Intelligence and Automation

AI applications are increasingly being explored for personalized user services, automated cataloging, and efficient resource management (Emerging Technologies Study, 2025). Robotics and electronic security systems improve operational efficiency and safety.

B. National ICT Projects

The Nigerian government and agencies like the National Universities Commission have launched ICT projects such as the National Virtual Library and digital repositories to enhance academic resource availability (UNL Study, 2024).

C. Policy Frameworks and Infrastructure Development

The National Policy on ICT in Education (2019) outlines strategic initiatives including interconnecting universities through networks (NgREN), establishing ICT laboratories, and promoting e-learning platforms to support tertiary education (Federal Ministry of Education, 2019).

7. Summary and Implications

The review consistently affirms that ICTs play a crucial role in enhancing library services, thereby supporting excellence in teaching and learning in Nigerian tertiary institutions. The availability of ICT tools improves information access, resource sharing, and user engagement, which are vital for academic success. However, challenges such as inadequate funding, infrastructure deficits, and limited training must be addressed to maximize ICT benefits.

To advance the role of ICTs in academic libraries, Nigerian

tertiary institutions should prioritize investment in ICT infrastructure, enhance staff training, and promote positive attitudes toward technology adoption. Additionally, policy frameworks like the National Policy on Education should be effectively implemented to support sustainable ICT integration.

The integration of Information and Communication Technologies (ICTs) in Nigerian academic libraries has been a subject of growing scholarly interest due to its transformative impact on teaching and learning. ICTs have facilitated access to digital information resources, improved library management, and enhanced user services, thereby contributing to academic excellence. This expanded review builds on previous findings by incorporating recent studies that explore the benefits, challenges, and emerging trends related to ICT use in Nigerian tertiary institution libraries.

8. Recommendations for Enhancing ICT Use in Nigerian Academic Libraries

To maximize the benefits of ICTs in promoting excellence in teaching and learning, the following strategies are recommended.

A. Increased Funding

Government and institutional support should prioritize funding for ICT infrastructure and continuous upgrades.

B. Staff Training and Development

Regular training programs should be instituted to enhance the ICT competencies of library personnel and users.

C. Adoption of 4IR Technologies

Libraries should embrace Fourth Industrial Revolution technologies such as artificial intelligence, cloud computing, and the Internet of Things to advance service delivery (Ubogu, 2019; SciELO, 2025).

D. Improved Power and Network Infrastructure

Investment in reliable power supply and high-speed internet connectivity is essential.

E. User Education Programs

Libraries should implement awareness campaigns and training workshops to improve user engagement with ICT resources.

9. Strategies for Optimizing ICT Use

To overcome challenges and optimize ICT integration in Nigerian academic libraries, scholars recommend.

A. Increased and Sustained Funding

Institutions and governments should prioritize library ICT funding to ensure acquisition, maintenance, and upgrades of technology (Kwara State Study, 2023; Ogala & Okerierhie, 2021).

B. Capacity Building

Continuous training and professional development for library staff and users are essential to improve ICT skills and

awareness (Lawal-Solarin, 2013; Kwara State Study, 2023).

C. Infrastructure Improvement

Reliable power supply and high-speed internet connectivity must be ensured to support ICT operations (Nigerian Library and Information Science Trends, 2024).

D. Formulation of ICT Policies

Libraries should develop clear ICT policies and strategies to guide implementation, management, and sustainability of ICT services (Nigerian Library and Information Science Trends, 2024).

E. Adoption of Cloud Computing and Digital Platforms

Administrators are encouraged to embrace cloud computing and modern digital platforms to enhance efficiency and expand access (RSIS International, 2024).

10. Conclusion

ICTs hold a central place in Nigerian tertiary institution libraries, significantly contributing to the excellence of teaching and learning processes. While challenges persist, strategic investments and policy support can harness the full potential of ICTs to transform academic libraries into dynamic, user-centered hubs of knowledge and innovation. By doing so, Nigerian universities can enhance their educational outcomes and keep pace with global academic standards.

The literature underscores that ICTs are indispensable in Nigerian academic libraries for enhancing teaching and learning excellence. While significant progress has been made in ICT adoption, persistent infrastructural, financial, and human resource challenges remain. Addressing these issues through strategic investments, policy support, and capacity building will enable Nigerian tertiary institutions to fully harness ICTs for academic excellence and global competitiveness.

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