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Challenges of e-library in developing countries higher educational institutions

Bonnie Obeka Obande^{1,*}, Emmanuel Helen², Charles Terwuese Tsenongu³, Dorcas Nguwasen Tarbo⁴

¹ Central Library, Igbinedion University, Okada Edo State P.M.B 001, Nigeria

² Department of Library and Information Science, Faculty of Education, University of Abuja, Abuja 117, Nigeria

³ University Main Library, Clifford University, Owerinta P.M.B. 8001 Aba, Abia State, Nigeria

⁴ Faculty of Law Library, Benue State University, Makurdi Benue State P.M.B 102110, Nigeria

* **Corresponding author:** Bonnie Obeka Obande, bonnie.obande@iuokada.edu.ng

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Abstract: Higher educational institutions in developing countries around the globe have come under rigorous criticism in the current era due to the poor quality of their products. Presently, there is an urgent need for higher education institutions in developing countries to catch up with innovations in teaching, learning, and research practices in developed economies. This paper explores the objectives, Information resources, basic requirements for accessing electronic library resources, advantages and disadvantages of E-library as well as the role of the use of Electronic Library in Higher Educational Institutions in Developing Countries. It also so examines the challenges associated with the use of electronic Libraries in higher educational Institutions in Developing Countries. These include the unstable power supply, Inability of vendors to supply the needed hardware, Change of contents, Lack of Digitization, Unified agreement, Economy, Network infrastructure, and Operational hours among others. It highlights the fact that electronic libraries are vital for efficient teaching, research, and learning in higher educational institutions of developing countries in the 21st century and as a result are a main concern. On the other hand, the paper stresses that to address the Challenges Associated with the Use of Electronic Library in Higher Educational Institutions in Developing Countries, the government at all levels should collaborate in funding libraries and make them more open to researchers' needs in the country, the e-library should be equipped by employing professionals in the field of librarianship with ICT technical know-how that can give quality contributions to national development in spheres of life, among others.

Keywords: library; electronic library; e-library; technology; digital library; librarians

1. Introduction

The significance of E-libraries in higher education institutions in developing countries cannot be overstated. With the rise of information and communication technology, electronic libraries have revolutionized the availability and utilization of digital resources in modern times. This global advancement has presented challenges to libraries and information institutions in meeting the information needs of users in the digital age.

Libraries are now heavily investing in electronic resources, particularly e-libraries that offer users access to a variety of digital resources to improve their academic performance. While developed nations have embraced this trend, African countries and other developing nations are facing obstacles in fully embracing the electronic era due to the digital divide.

Efforts have been made to integrate African universities into the digital society, with initiatives from both National and International organizations to provide the necessary network infrastructure for accessing free or heavily discounted Journals and databases through programs like AGORA, eIFL, HINARI, and PERI [1].

2. Conceptual clarifications

Electronic libraries are known by different nomenclatures. While some refer to it as digital libraries, some call it virtual libraries, others internet libraries, and libraries without walls among others. No matter what they are called, they are referring to libraries whose collections are digitized and are accessible through modern technologies like mobile phones, and computers among others [2]. ELECTRONIC LIBRARY (E-LIBRARY), a digital library is a modernized version of a traditional library, where collections are stored in digital formats and can be accessed using computers. The electronic content can be stored locally on a device, or accessed remotely through computer networks. This type of library allows users to access information and resources through a computer network or an information retrieval system.

The concept of electronic libraries started with the development of large bibliographic databases and online retrieval systems that are now commonly used in libraries. As computers became connected to the Internet, the idea of digital libraries emerged, allowing people to access a vast amount of information from anywhere in the world. Terms like “virtual library”, “electroniclibrary”, “library without walls”, and “digital library” have all been used to describe this modern concept. Materials in a digital library are referred to as electronic or digital materials [1].

3. E-library initiative in higher educational institutions in Nigeria

The Federal Government of Nigeria, with the assistance of the National Universities Commission (NUC), has implemented a range of programs to modernize Nigerian Universities and bring them into the global information society. These initiatives include the introduction of Management Information Systems (MIS) to automate university libraries, as well as the establishment of the Nigerian Universities Network (NUNET) to create robust local and wide area networks in each institution.

Despite these efforts, progress towards creating virtual (electronic) libraries in Nigerian higher education institutions has been slow. Projects such as the National Universities Commission Virtual Library Project, the National Board for Colleges of Education Virtual Library, the National Open University Library Project, and the UNESCO Virtual Library Pilot Project have been launched since the early 2000s, but none have resulted in fully functional virtual libraries yet.

In recent years, Nigeria has witnessed significant advancements in its telecommunications industry, with millions of telephone lines being connected and the expansion of Internet services by Internet Service Providers (ISPs) and cyber café operators. Furthermore, Mobile Telephone Networks (MTN) Nigeria has successfully deployed digital libraries in three universities-Ahmadu Bello University, University of Lagos, and University of Nigeria, Nsukka. A fourth digital library at

the University of Benin is also slated for commissioning in 2011, along with an e-library at the University of Ilorin.

Overall, the efforts to enhance information and communication technology in Nigerian universities are steadily progressing, with digital libraries playing a crucial role in advancing education and research in the country [1].

According to Jones [3], E-E-libraries are meant to offer adequate functions as follows.

- E-libraries enable users to access large amounts of information wherever they are and whenever they need it.
- E-libraries provide users access to primary information resources in digital format.
- E-libraries support multimedia content and text.
- E-libraries hypertext links for navigation.
- They provide a user-friendly environment for users of the resources.
- They encourage cooperative efforts in research resources, computing, and communication networks.
- E-libraries enable advanced search and information retrieval among users.

4. Information resources of e-libraries

Electronic information resources, (Electronic Resources or E-resources) are collections of information in electronic or digital format that are accessed on an electronic device, such as a mobile phone or computer. These are published resources in electronic versions/formats such as encyclopedias, pamphlets, e-books, e-journals, and databases [4].

5. Basic requirement for accessing electronic library resources

Electronic libraries are not conventional libraries where one can just go in and access their collections. As the name implies, e-libraries are not single entities so they require technological tools such as computer devices, the internet, a working internet line and the right modem for the internet line, software such as Internet browsers, email clients, Usenet clients, and other special applications for efficient access.

6. Advantages and disadvantages of e-library

Library and e-resources have a lot of benefits for students and it facilitates the in-house search for librarians who cannot access information online. Furthermore, the introduction of electronic information resources has enhanced the knowledge of the staff on the different types of operating systems, hardware configuration, Interface designs, and software packages [5].

An e-library, also known as a digital library, provides easy and quick access to a wide range of electronic publications that are popular among both commercial interests and the general public. Unlike traditional libraries that are limited by physical storage space, e-libraries have the capacity to store a vast amount of information since digital data requires minimal physical space. Maintaining an e-

library is often more cost-effective than maintaining a physical library, as the former eliminates the need to spend large amounts of money on staffing, maintaining physical collections, paying rental fees, and purchasing additional books. As Patra [6] discusses below.

- a) No physical boundary: The user does not have to go to the library physically. People from all over the world can access the same information.
- b) 24/7 accesses: A major advantage of digital libraries is that people can gain access 24/7 to their information.
- c) Multiple accesses: The same resource of digital libraries can be used simultaneously by several institutions and users.
- d) Information retrieval: The user can use any search term to search the entire collection. It provides very user-friendly interfaces, giving clickable access to its resources.
- e) Preservation and conservation: For physical collections, digitization is not a long-term preservation solution, but succeeds in providing access copies for materials that would otherwise fall to modification from repeated use.
- f) Space: Traditional libraries are limited by storage space but digital libraries have the potential to store much more information. Digital information requires very little physical space to contain them. Also, media storage technologies are more affordable than ever before.
- g) Easily accessible: Anyone can access the digital library from any place at any time.

7. Digital library disadvantages

- 1) Copyright infringement occurs when one author's work is shared without proper acknowledgment, violating copyright laws in the digital realm.
- 2) The speed of access to digital libraries may decrease as more computers connect to the internet.
- 3) The initial cost of setting up a digital library, including hardware, software, and communication circuits, is typically high.
- 4) Digital libraries require high bandwidth for efficient transfer of multimedia resources.
- 5) Digital libraries cannot replicate the traditional library environment, as many individuals prefer reading printed material over digital screens.
- 6) Electronic libraries may quickly become outdated and inaccessible due to technological advancements, posing challenges for preservation.
- 7) With the increasing use of technology, the new generation can explore history, tradition, nature, and more through digital means.

8. The role of the use of electronic libraries in Higher Educational Institutions

The emergence of information and communication technology (ICT) and electronic information sources has revolutionized the research environment in higher education institutions. E-libraries have facilitated the shift of information from traditional print format to electronic format. Information stored in electronic form is

commonly known as an electronic resource. The introduction of e-libraries has opened up new avenues for accessing and retrieving information, enabling library users with technical skills to easily locate the information they need. The responsibility of selecting resources for the electronic library falls on the librarian, while the librarian is also tasked with creating access points and describing the library resources. In addition, acquisition librarians are required to organize electronic resources and manage licenses effectively. The implementation of an electronic library signifies that libraries will need to allocate more funds towards hardware, software, licensing, training, and hiring technical experts to ensure the smooth operation and management of the library [7].

9. Challenges associated with the use of electronic libraries in Higher Educational Institutions

Despite the numerous advantages of electronic libraries in developing nations such as Nigeria, they face various challenges in different areas. One major issue is the unstable power supply, which is a common problem that affects library automation in countries like Nigeria. The inconsistent power supply can cause damage to computer hardware and lead to databases crashing, which can last for extended periods of time. This has deterred many professionals from supporting library automation, as it can result in expensive computer systems being damaged and librarians reverting back to manual systems due to unreliable power supply.

Another challenge is the inability of vendors to supply the necessary hardware in a timely manner and with the correct specifications. Sometimes, computer systems become obsolete because essential items like connective cables are not provided or are in poor condition.

Furthermore, electronic libraries are susceptible to changes in content as new information is constantly being added. However, they often lack a logical structure for organizing and presenting information, which can be confusing for users.

Digitization of digital resources also poses a challenge for electronic libraries, as it requires a significant amount of information to be converted into digital format. Additionally, there is a need for a unified agreement on standards issues and a stable economy to fund maintenance and management.

Solid network infrastructure is essential for electronic libraries to function effectively, and clear operation hours and borrowing limits need to be specified for users. In conclusion, while electronic libraries offer many benefits, they must overcome these challenges to fully realize their potential in developing countries like Nigeria.

10. Potential solutions

Addressing the challenges faced by e-libraries in developing countries requires a multi-faceted approach involving collaboration between educational institutions, government agencies, and international organizations. Some potential solutions include:

- 1) Infrastructure Development: Investing in improving internet connectivity and providing access to computer facilities can enhance the infrastructure necessary for e-library services.
- 2) Digital Literacy Programs: Implementing digital literacy programs for students and faculty members can help bridge the skills gap and empower users to effectively utilize e-library resources.
- 3) Subsidized Access: Government subsidies or partnerships with telecommunications companies can help reduce the cost barriers associated with accessing e-library resources, making them more accessible to a wider population.
- 4) Collaboration with Publishers: Establishing partnerships with academic publishers and organizations to provide affordable access to high-quality digital resources can enhance the relevance and quality of e-library offerings.
- 5) Capacity Building: Providing training and support for IT staff within educational institutions can enhance their capacity to maintain and upgrade e-library systems, ensuring their long-term sustainability.

11. Conclusions

While e-libraries offer immense potential for transforming higher educational institutions in developing countries, they are not without challenges. Addressing issues related to infrastructure, digital literacy, access barriers, resource quality, and sustainability is crucial for realizing the full benefits of e-library services. By implementing targeted solutions and fostering collaboration, educational institutions can overcome these challenges and create robust e-library systems that support academic excellence and research advancement in developing countries.

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