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DIGITIZATION OF SERIAL PUBLICATIONS FOR EFFECTIVE KNOWLEDGE DISSEMINATION IN ACADEMIC LIBRARIES

Eze Onwuzurike Jane (Mrs.); Okafor Kelechi Charity (Mrs.) & Nwokoye Sandra chinonye
jennyeze@gmail.com; kcg.okafor@unizik.edu.ng; nwokoye@unizik.edu.ng

Nnamdi Azikiwe University, Awka. Nigeria.

ABSTRACT

This paper examines digitization of serial publications as a way of disseminating knowledge materials in digital form in academic libraries. The paper found that the rapid digitization of learning environment is increasing access to serial publications in academic libraries. It dwells into the importance of managing serial publications for increasing service efficiency. The paper posited that there is need for implementing digitization policy and planning in academic libraries through adherence to digitization guidelines, standards and best practices. It emphasizes on general criteria for digitization of serial collections which include consideration of copyright issues, user needs assessment, serials usability, value of serials, cost and preservation or maintenance. It identified digitization processes such as serials scanning, processing, editing, cataloguing, indexing, archiving and quality control. Several challenges of digitization were identified. They include inadequate funding, lack of proper digitization plan, inadequate technology facilities, inadequate skilled personnel and erratic power. The paper recommends that academic libraries in Nigeria should deploy appropriate technology and design interfaces that will be suitable for managing diverse serial publications. The libraries should also engage stakeholders in order to increase funding and ensure quantity and quality control when digitizing serial materials for effective knowledge dissemination.

Keywords: Academic libraries, serial publications, digitization, knowledge dissemination.

Introduction

In the technology driven age digitization of serial publications is critical to the success of knowledge dissemination in academic libraries. Knowledge dissemination is a process of rendering resources including serial publications to the target users. It is also a process that improves accessibility to a desired serial material as a knowledge product. However, due to emergence and adoption of digital technologies, academic libraries are engaged in the digitization of serial publications for the purpose of collections control, management and easy dissemination of information to users. Idhalama and Obi (2019) stated that serials are the backbone of every academic library. They are type of publications which are part of academic library resources that contain valuable information for research and learning.

Serial collections are published in successive parts, at regular or irregular intervals. They comprised of journals, proceedings, reports, yearbooks, accessions, fact sheets, magazines, abstracts, indexes,

newspapers and transactions appearing daily, weekly, monthly, quarterly, bi-annually and annually (Baba and Amuda, 2023). Serials are important sources of current information in libraries and virtually all academic libraries are creating and maintaining serials collection within their budget and space. The ALA Glossary of Library and Information Science (2013) define serials as the types of publication issued in successive parts, usually at regular intervals and as a rule intended to be continued indefinitely.

Generally, academic libraries are established to support the objectives of their parent institutions in the area of teaching, learning and research. Academic library is meant to serve undergraduates, postgraduates, lecturers and other members of the academic community. Edoka (2009) noted that academic libraries cater for the needs of those who are engaged in academic pursuit. The author also mentioned that the quality of a higher education is measured largely by the quality of a library because of its unique role in education. Notably, there can never be the existence of higher institution without a library. Academic library is supporting the mission of higher learning through provision of information resources that comprised of serial publications. Academic libraries are integral part of higher education and have the responsibility of collecting, organizing and disseminating information materials including serial publications to the academic community. Ilo (2008) describes academic libraries as the heart of higher institution that serve the following objectives:

1. To provide materials in support of the learning process (term paper, thesis/projects and study materials).
2. To provide materials in general support of research and advanced study for lecturers and students.
3. To assist the library users in their own personal development.
4. To cooperate with other academic libraries with a view to developing a network of library resources for all students and teaching faculties.

However, for many lecturers and students serial publications are most important and useful sources of information. As noted by Bala, Isah and Ibrahim (2023) serials publications provide recent report of research discovery which enhances intellectual growth and development. They constitute a major part of all academic library collections and typically libraries devoted significant part of their expenditure for the acquisition of serial publications. Nwalo (2003) stated that serials are prominence in the library because they provide the latest and up-to-date information in various disciplines. Serials are of great importance because they carry latest, current and up-to-date information of opinions and development within the various subject fields and new knowledge. In academic libraries, serials are provided to users as educational resources which enhance the learning environment and offer academic community the opportunity to deliver best quality teaching and research. Hence, serials are critical to the quality of instruction which students received in higher education.

Importantly, by looking at the value of serial publications, there is need for academic libraries to build up a well

organized serial management and control systems. At the same time, the libraries should also respond adequately to the demand of the digital age with respect to their serial collections. Sofia (2023) acknowledged that libraries serve as pillars of information services and need to redefine their role within the evolving digital landscape. The rapid digitization of learning environment increased access to serial publications in academic libraries. This assertion calls for the assessment of the functions and purpose of serials management in the digital realm. Academic libraries carry out digitization work by converting serial publications into digital formats for the purpose of enhancing teaching, learning and research activities. Digitization also helps academic libraries in space management and easy accessibility to serial collections. Thus, digitization has become necessary because it makes information search and discovery of collections more sophisticated.

Management of Serial Publications in Digital Environment

The management of serial publications is fundamental in digital environment because it helps a library to increase efficiency of providing services to users. Digital environment is an integrated system within a library where digital technologies are used to manage the collections of a library. According to National Open University of Nigeria (2021) serials management is a process which involves harnessing serials into the library through selection of new publications that will be relevant to users. The management of serial publications is the planning, organizing and controlling of serial collections. It allows library to expand and diversify its resources, minimize wastages, and ensure optimum utilization by users. Umoh (2017) observed that management of serial collections helps library to achieve organizational goals and objectives. It is the process of planning, organizing, controlling, commanding and coordinating materials in an efficient manner and integrating them into digital domain for easy accessibility. It is an activity which requires library staff to manage the process using modern technology facilities, tools and equipment. Asshikuzzaman (2023) maintained that with the increasing availability of electronic journals and other serials publications, libraries are now adopting electronic serials management systems to manage this type of publications. The system provides a platform for managing access, tracking usage statistics and facilitating inter-library loans.

Academic library is a place where serial collections are regularly generated, managed and utilized. Therefore, it is totally involved in the management of serials for effective knowledge dissemination. Even with the shift to digital environment, the management of serial publications is seen as a strategic long process that begins with identifying user needs, selection, acquisition, analysis, interpretation, organization, storage and dissemination (Helen, 2013). In addition, there are other dimensions of serials collection management. These dimensions include identification of serials collection management goals, providing leadership on serials collection management, developing serials collection policy, financial needs assessment for serials collection management, staff training and serials collection evaluation. Management of serials collection is very essential because it helps

the library in reducing the cost for the maintenance of unwanted materials, reduce risk, add value to the serials collection and create new way of providing library services to users. According to Experian Information Solution (2022) a good collections management enables libraries to recognize the value of their collections and identify gaps or problems with their collections in terms of quantity and quality. Therefore, libraries deployed all the necessary equipment and software to manage their serials collection effectively.

Mostly, there are serious challenges facing academic libraries in their attempt to effectively manage their serial collections. For example, in Nigeria the challenges ranges from the lack of infrastructure, erratic power supply, poor network and restricted access as highlighted by Oghenetaga, Ebele and Nkechi (2014), the digitization of serial publications is seen as integral part of academic library operations. According to Judith (2019) serial publications constitute the single most important medium for scholarly communication. This is owing to the fact that, serial publications have a wider usage and many researchers might want to cite publications or articles from them in their work. Consequently, it is imperative that academic libraries make best possible use of their serial publications through digitization for effective knowledge dissemination.

Concept of Digitization in Academic Libraries

Digitization in academic libraries involves the process of creating digital version of analogue materials from the library collections (National library of Australia, 2023). According to Gbaje (2007) digitization is a process of converting non digital born documents to digital format. Therefore, digitization is generally seen as the process of converting the contents of material from hard copy into machine readable form. Rafiq (2011) sees digitization as the process of taking traditional serial materials that are in form of paper and converting them to the electronic form where they can be preserved and retrieved by a computer. The procedure involves selecting material that contains significant information and research value to users. Thereafter, a librarian scans and save the soft copy into a computer for easy access and retrieval. Angadi (2021) observed that the system of digitization differs significantly with traditional method of storing materials because the digital version allows users to gain an online access and work with the electronic contents of full text materials to easily satisfy their needs. Digitization provides universal access to library collections and has a number of benefits to academic libraries. These benefits according to Indhra Ghandi National Open University (2022) are highlighted below:

1. It improves the speed and accuracy in serials control activities.
2. It offers easy creation and maintenance of article indexing database.
3. It helps in providing a number of user services on demand.
4. It helps library staff in quick production of serials holdings and list of recent arrivals in many forms.

5. It facilitates online access to the serials database from anywhere, anytime in any format.
6. It helps in the export and import of cataloguing data for serials received by the library.

The application of digital technologies to change the pattern of library services is providing new prospects and value producing opportunities for libraries to manage their collections in digital formats. Angadi (2021) stated that a digital item allows users to search collections rapidly and comprehensively from any location at any given time. It provides opportunity for users to access materials without hindrance and solves the problem of space management. Dhule (2018), Fabunmi, Paris and Fabunmi (2006) hinted that digitization is an important component of current global information system, and academic libraries are involved in digitization. The act of digitizing collections has a lot of influence on the practice of librarianship as a profession. Thus, digitization has swiftly become part of the practice of libraries which doesn't only mean scanning of documents but also "simple data conversion from catalogue cards or paper to digital form, video and audio migration". In a similar direction, Obiora, Okeke and Onwurah (2015) asserted that digitization is a significant feature of academic libraries and due to advent of software packages it led the libraries into digital system for creation and sharing of digital contents.

Several studies have shown the importance of digitization in academic libraries. For example, Odeneyi *et al* (2024), Adzic and Sremac (2013) observed that digitization provides improved and wider access to library collections. It is done for variety of reasons such as preserving collections and ensuring easy accessibility. Often, libraries select precious materials including those that are sensitive to damage and prepare them for digitization. However, academic libraries have been using digital technology systems in serials digitization. The applications of hardware and software have significantly improved serials digitization process. Prior to this development, there were several terminologies used interchangeably by libraries in managing serial publications such as computer – assisted serials system, automated serials system and computerized serials system. According to Deka (nd) there are software programmes required to create digital version of serials such as HTML, XML, text and image editing software, OCR, FTP, PDF, page and design layout software.

Digitization Policy and Planning for Serial Publications

Digitization policy and planning is developed and implemented by academic libraries in order to make serials management more efficient. Digitization of serial publications has become a critical issue in academic libraries globally. This is why libraries in most countries are involved in implementing digitization policy for effective management of serials collection. Digitization policy according to the National Archives of Namibia (2017) is a framework which guides the process of digitization for optimal access to collections. Digitization as an activity will become realistic through proper policy implementation and adequate planning in

libraries. Most of the serial publications like journals, reports, newspapers, conference papers and monographs require plan of action and guiding principles before digitization takes place. The serial librarian provides list of titles augmented by keywords and brief bibliographic description of each document ready for digitization.

According to Margot (2024) digitization policy and plan provide guidance to libraries on using digitization process to support their mission of building digital collections. Chisita, Durodolu and Ngoaketsi (2021) noted that there are policy, processes and procedure for digitization workflow of collections. Academic libraries need to consider their digitization policy for serial collections thereby enhancing the efficiency, reliability and quality of serial services. As a step by step arrangement, the policy of digitization takes into consideration various phases, like serial selection, preparation of serials, scanning, processing, editing, quality assurance, cataloguing, metadata, indexing, backup and archiving.

Conversely, digitization policy helps libraries to define priorities and communicate the scope of each serial material to be digitized. The policy according to Heritage Network (2018) should emphasize on accountability, sustainability and continuity. In addition, libraries adopt the application of digitization manuals to serve as their guiding principles for digitizing serials. The manual is a statement which provides instructions to librarians on the step by step approach to digitization. Mostly, the manual contains guidelines on standards and best practices of digitization such as technology and equipment, file naming and storage folder structure.

Digitization Criteria for Serial Publications

The criterion for digitizing serial publications is meant to ensure conformity with standards and full compliance to policy and procedures. Initially, before digitization takes place certain elements need to be put in place as posited by Margot (2024) below:

1. ***Copyright*:** this aspect denotes the fact that all copyright pertaining to serial publications have to be cleared before proceeding to digitization. Serial materials available in the public domain with copyright permission should be given priority treatment than materials that lack copyright permission or unclear copyright agreements. Academic libraries should not commit their budget, time and resources to digitize serial collections they cannot have legal right for duplication, copying and dissemination.
2. ***User Needs**:* All the serial publication prepared for digitization should meet the information need of users. In academic libraries, there is increasing demand of digitized collections for better access. Also, serial librarian should assess the intellectual quality of serial publication to digitize. When considering the need of users, it is important to focus on digitizing the most useful and unique materials that meet users expectations rather than less popular collections.
3. ***Usability:*** the library should consider high frequency of use of each serial material because it meets the requirement of users. These types of serial materials are qualified for digitization.

4. ***Value:*** there are high value serial materials which need to be digitized for preservation and security. The value of serial publication is determined by its uniqueness and importance to the users. Therefore, it is the responsibility of serial librarian to assess the value of each material ready for digitization.
5. ***Preservation:*** the library should consider serial materials that are facing preservation problems in terms of their physical damage, fragility, size or outdated formats. These types of collections are qualified for digitization and will minimize the handling of the original materials.
6. ***Cost:*** the cost of an item is a factor of consideration because some serial materials are costly to acquire. In this case, suitable digital versions are cost-effective and can save money for the library.

Challenges Affecting Digitization of Serial Publications

Digitization of serial collections as the process of converting analogue materials into digital form is facing several challenges. Presently, many libraries are struggling to balance the gap between their traditional serial collections and the digital sphere while ensuring that users have access to the most reliable contents. There are numerous challenges that hindered successful digitization of serial materials in libraries. These challenges include lack of effective library operational strategy, lack of expertise, digital skill gap, copyright concerns, security risk and lack of equipment. A study by Oni, Abu and Ekeniyere (2018) shows that progress on digitization in Nigerian academic libraries is relatively slow. The situation is attributed to various challenges as follows:

1. ***Lack of Proper Digitization Planning*:** this challenge shows improper digitization planning due to lack of coordination and organization. A well-defined digitization plan is essential for the library to be able to utilize digitization project for knowledge dissemination. Therefore, without proper planning a library will miss out on opportunities which digitization offers and can likely provide poor services.
2. ***Inadequate Funding:*** funding issues is a general problem in libraries. Mostly, libraries operate within limited budget which affect their services. Therefore, inadequate funding has become a serious challenge to digitization work.
3. ***Inadequate Skilled Personnel:*** this is a common challenge in libraries because digitization work requires expertise, skills and knowledge of digital processes. Thus, libraries require a well trained staff who can utilize new technology to convert analogue materials into digital form for effective knowledge dissemination.
4. ***Inadequate Technology Facilities:*** the inadequate technology facilities in libraries decrease the chances for digitization of serial collections. Modern Information and Communication Technologies (ICTs) are not fully implemented and utilized for the purpose of digitization. There are no proper ICTs which affect both short and long term digitization plans of libraries. For example, a study conducted by Sahabi and Otobo (2021) revealed that librarians in some Nigerian academic libraries lack

technical expertise of handling technology to manage and integrate collections for improving services. This scenario is one of the major obstacles in the way of implementation of digitization of library collections.

5. ***Erratic Power Supply:*** power supply in Nigeria is not stable and seriously affects digitization of serial collections in so many ways. The epileptic power supply situation has the potential of causing damages to library electronic facilities including computers and tools that are used for digitization of collections. Also, it can affect digitization plans and schedule due to unreliability of the power supply. Efenedo and Edegbo (2023) noted that there is interrupted power supply in Nigerian academic libraries which affects the ICT equipment such as software components and other applications. The situation also rendered library website and digital collections inaccessible as a result of software malfunction.

Conclusion and the Way Forward

Academic libraries have been incorporating serial collections in their services. On the other hand, digitization has profound impact on serial collections management in academic libraries. It helps in the long term preservation of journals, newspapers, magazines and newsletters that provide up to date information to users. Digitization ensures speedy access to serial materials and enhances the efficiency of library operations. There are certain criteria adopted by libraries to ensure effective digitization. The criterion include consideration to copyright issues, user needs assessment, serials usability, value of serials, cost and preservation. Although digitization offers crucial advantages to academic libraries, some identifiable challenges like inadequate funding, lack of proper digitization plan, inadequate technology facilities, inadequate skilled personnel and erratic power supply hindered effective digitization of serial collections in Nigerian academic libraries. Hence, this paper recommends that academic libraries in Nigeria should engage in proper planning as a key to the success of digitization. They should also deploy appropriate technology and design interfaces that will be suitable for diverse serial publications. The libraries should engage stakeholders for increase funding and financial backing because it helps determine the quantity and quality of digitization for effective knowledge dissemination.

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