

# CHALLENGES OF TRADITIONAL CATALOGUING AND CLASSIFICATION IN ACADEMIC LIBRARIES IN THE INFORMATION AGE: THE WAY FORWARD

**Rose Uloma Ezeh**

Nigerian Institute of Advanced Legal Studies.

University of Lagos Akoka Campus, Yaba, Lagos State

**Augustine Chinyere Chime (PhD)**

Library Department, Faculty of Education,

Enugu State University of Science and Technology (ESUT), Agbani, Enugu State

and

**Nnenna Loveth Ugwuanyi,**

Library Department, Faculty of Education,

Enugu State University of Science and Technology (ESUT), Enugu State.

## **Abstract**

This paper examined the challenges associated with traditional cataloguing and classification in the information age, with particular focus on academic libraries. The study was motivated by the increasing complexity of information resources and the growing demand for efficient information organization and retrieval systems. A conceptual and analytical approach was adopted, relying on the review and synthesis of relevant literature on cataloguing practices, metadata systems, and emerging technologies in library operations. The paper explored key concepts such as traditional cataloguing and classification, modern cataloguing, metadata, and information retrieval, and established their interrelationships within contemporary information environments. Findings revealed that traditional cataloguing systems are constrained by manual processes, rigidity of

standards, limited technological integration, and inability to effectively manage digital information resources. These challenges negatively impact the efficiency of information organization and access in academic libraries. The paper further identified strategies for improvement, including the integration of modern technologies, adoption of flexible cataloguing standards, capacity building for library professionals, and enhancement of technological infrastructure. The study concluded that while traditional cataloguing remains relevant, its effectiveness depends on its ability to adapt to the demands of the information age. The paper contributes to knowledge by providing a structured conceptual analysis and practical insights for improving cataloguing practices in academic libraries.

**Keyword:** Traditional cataloguing; Classification; Academic libraries; Information age; Metadata; Information retrieval; Bibliographic control.

### Introduction

Academic libraries play a central role in supporting teaching, learning, and research through the systematic organization and dissemination of information resources. Their effectiveness is not only determined by the quantity of resources they hold but also by how efficiently such resources are organized and made accessible to users. In this regard, cataloguing and classification serve as essential intellectual tools that facilitate access to information, enhance resource visibility, and ensure effective utilization of library collections.

The emergence of the information age has significantly transformed the operational landscape of academic libraries. The rapid expansion in the volume, diversity, and formats of information resources has introduced new complexities in the organization and management of library collections. Abdul et al. (2020) observed that the growth of digital information resources has reshaped library operations, while Bala et al. (2020) noted that the increasing integration of technology has altered traditional approaches to information organization. Similarly, Ejiroghene (2020) highlighted that modern academic libraries are now required to manage hybrid collections

consisting of both print and electronic resources, thereby increasing the demands placed on cataloguing systems.

Cataloguing and classification, as core components of technical services, are designed to ensure systematic organization and efficient retrieval of information resources. These processes involve the description, identification, and arrangement of materials using standardized rules and frameworks. Mustapha (2021) explained that cataloguing establishes bibliographic control, which is essential for information access, while Mugaburu and Thompson (2021) emphasized that classification provides a structured arrangement of knowledge that enhances resource discoverability. These functions are critical in ensuring that users can easily locate and utilize relevant materials within the library.

Traditional cataloguing and classification refer to the manual and rule-based methods historically used in organizing library materials. These approaches rely heavily on human expertise and established standards to achieve consistency and accuracy in bibliographic records. Although these methods were effective in earlier library environments characterized by relatively stable and print-based collections, their relevance in contemporary information settings is increasingly being questioned. Ogunniyi et al. (2023) noted that traditional cataloguing systems are often labour-intensive and time-consuming, while Monyela (2023) observed that their manual nature limits efficiency in handling large volumes of information resources. In addition, Martins and Yinasim (2024) highlighted that the rigidity of traditional cataloguing frameworks restricts their ability to adapt to evolving information formats.

The challenges associated with traditional cataloguing have become more pronounced in the information age due to the increasing complexity of information resources and user

expectations. Igere (2024) observed that modern information environments are characterized by rapid data growth and diversity, which traditional systems struggle to manage effectively. Similarly, Mahmud (2024) noted that manual cataloguing processes often result in delays, inconsistencies, and reduced access to information resources. Adeeko et al. (2025) further emphasized that the limitations of traditional cataloguing systems affect not only efficiency but also the quality of information retrieval in academic libraries.

These challenges are particularly evident in developing countries, where institutional constraints continue to hinder the modernization of library operations. Issues such as inadequate funding, insufficient technological infrastructure, and gaps in professional competencies remain significant barriers to effective cataloguing practices. Onuoha and Chukwueke (2022) identified these constraints as major factors affecting cataloguing efficiency, while Ajani et al. (2025) noted that limited access to modern cataloguing tools has sustained the reliance on traditional methods in many academic libraries.

It is within this context that this paper examined the challenges of traditional cataloguing and classification in academic libraries in the information age. The paper also explored practical strategies for improving cataloguing practices in order to enhance information access and support the evolving needs of library users.

### **Statement of Problem**

Traditional cataloguing and classification have historically provided the foundation for organizing and accessing information resources in academic libraries. However, the emergence of the information age has introduced significant changes in the nature, volume, and formats of information resources, particularly with the proliferation of digital materials and increasing user

expectations for fast and seamless access. These developments have exposed the limitations of traditional cataloguing systems, which are often manual, rigid, and not sufficiently adaptable to modern information environments. Despite existing studies on cataloguing practices and technological innovations in libraries, there is still inadequate conceptual focus on how traditional cataloguing specifically responds to these evolving demands. This creates a gap in understanding the extent to which traditional practices remain effective in contemporary academic libraries. Therefore, this paper addresses this gap by examining the challenges associated with traditional cataloguing and classification in the information age and proposing strategies for enhancing their relevance and efficiency.

## **METHODOLOGY**

This study adopted a conceptual and analytical approach, consistent with the nature of an empirical opinion paper. The paper relied on extensive review and critical analysis of existing literature on cataloguing and classification, with particular emphasis on traditional cataloguing practices in the context of the information age.

Relevant scholarly sources were drawn from journal articles, conference papers, and institutional publications, particularly those focusing on cataloguing practices, metadata systems, information retrieval, and the application of emerging technologies in library operations. The selection of literature was guided by relevance to the key variables of the study, including traditional cataloguing and classification, digital transformation, and academic library services. The study employed a thematic analysis technique, where identified literature was systematically examined, organized, and synthesized into key conceptual areas such as the nature of traditional cataloguing, emerging trends in modern cataloguing, associated challenges, and possible strategies

for improvement. This approach enabled the paper to present a coherent and structured discussion of the subject matter.

In addition, the study incorporated the author's critical perspective in interpreting and analyzing existing findings, in line with the expectations of an opinion-based scholarly work. This ensured a balance between literature support and original scholarly contribution.

## **Literature Review**

### ***Concept of Academic Libraries***

Academic libraries are established to support the teaching, learning, and research activities of their parent institutions through the provision of relevant information resources and services. They serve as intellectual hubs where knowledge is organized, preserved, and disseminated to meet the academic needs of students, lecturers, and researchers. Beyond mere storage of information materials, academic libraries play a strategic role in facilitating access to scholarly resources and enhancing the overall quality of education.

In the contemporary information environment, the role of academic libraries has expanded significantly due to technological advancements and the proliferation of digital information resources. Igere (2024) examined developments in information management and reported that modern libraries now operate within complex digital ecosystems that require efficient systems for organizing and retrieving information. Similarly, Ejiroghene (2020) analyzed the impact of information and communication technologies on library operations and found that the integration of digital tools has transformed how academic libraries deliver services to users.

Academic libraries are fundamentally concerned with ensuring effective access to information, which is largely dependent on how well resources are organized. Cataloguing and

classification systems provide the structure through which library materials are described and arranged for easy retrieval. Mustapha (2021) emphasized that bibliographic control is central to the functioning of academic libraries, as it ensures that users can locate needed resources without difficulty. In the same vein, Akidi and Omekwu (2019) assessed cataloguing practices in Nigerian libraries and observed that the effectiveness of academic libraries is closely linked to the quality of their organization systems.

The transition from traditional to digital information environments has introduced new responsibilities for academic libraries. They are now required to manage both print and electronic resources, including databases, institutional repositories, and online learning materials. Lengyel (2024) discussed the influence of artificial intelligence in library workflows and noted that academic libraries are increasingly adopting innovative technologies to improve efficiency and service delivery. This shift has placed greater demands on cataloguing systems, which must evolve to accommodate diverse information formats and user expectations.

Despite these advancements, academic libraries, particularly in developing countries, continue to face numerous challenges that affect their performance. Onuoha and Chukwueke (2022) identified issues such as inadequate funding, limited technological infrastructure, and insufficient staff training as major constraints in Nigerian academic libraries. These challenges have implications for cataloguing and classification practices, as inefficient organization of resources can hinder access to information and reduce the effectiveness of library services.

From a conceptual perspective, academic libraries can be understood as systems that integrate information resources, organizational processes, and user services to achieve educational objectives. Their effectiveness depends not only on the availability of resources but

also on the efficiency of systems used to organize and retrieve those resources. This makes cataloguing and classification critical components within the broader framework of academic library operations.

### **Concept Of Information Age**

The information age represents a period characterized by the rapid creation, dissemination, and utilization of information driven largely by advancements in digital technologies. It marks a significant shift from traditional industrial systems to knowledge-based societies where information has become a critical resource for development. In this era, information is produced in vast quantities and in diverse formats, requiring more sophisticated systems for its organization and management.

The transformation associated with the information age has had profound implications for academic libraries and their operations. Igere (2024) examined trends in digital information environments and reported that the exponential growth of data has increased the complexity of managing information resources. Similarly, Ejiroghene (2020) observed that the integration of information and communication technologies has fundamentally changed how libraries acquire, organize, and disseminate information. These changes have necessitated a shift from traditional library practices to more dynamic and technology-driven approaches.

One of the defining features of the information age is the transition from print-based resources to digital and electronic formats. This shift has expanded access to information while simultaneously introducing new challenges in organizing and retrieving resources. Lengyel (2024) discussed the role of emerging technologies such as artificial intelligence in managing digital information and noted that modern libraries must adapt to increasingly automated systems. In the

same vein, Mahmud (2024) analyzed the application of artificial intelligence in cataloguing processes and found that digital environments require more efficient and scalable methods of organizing information.

The increasing reliance on digital information systems has also influenced user expectations regarding information access. Users now demand faster, more flexible, and remote access to resources, often through online platforms. Necula and Pavaloaia (2023) examined artificial intelligence as a disruptive technology and reported that it is reshaping how information systems respond to user needs. These evolving expectations have placed pressure on traditional cataloguing and classification systems, which are often not designed to handle the speed and flexibility required in digital environments.

Despite the opportunities presented by the information age, several challenges remain, particularly in developing countries where technological infrastructure may be inadequate. Onuoha and Chukwueke (2022) identified infrastructural limitations and lack of technical expertise as significant barriers to effective information management in academic libraries. These constraints affect the ability of libraries to fully adopt modern cataloguing systems and limit their capacity to meet the demands of the information age.

From a conceptual standpoint, the information age can be understood as a dynamic environment that influences how information is created, organized, and accessed. Its characteristics such as rapid data growth, technological integration, and changing user behavior directly impact cataloguing and classification practices. Understanding this concept is essential for examining the challenges of traditional cataloguing systems and their relevance in contemporary academic libraries.

## **Concept of Cataloguing and Classification**

Cataloguing and classification are fundamental processes in library and information science that ensure the systematic organization and accessibility of information resources. These processes provide the intellectual framework through which library materials are described, arranged, and retrieved, thereby facilitating efficient information access for users. Without effective cataloguing and classification systems, the vast collections of academic libraries would be difficult to navigate and utilize.

Cataloguing involves the creation of bibliographic records that describe the physical and intellectual attributes of information resources, including authorship, title, subject, and publication details. This process enables users to identify and locate materials within the library collection. Mustapha (2021) examined cataloguing practices in academic libraries and reported that bibliographic control is essential for ensuring accurate description and access to information resources. Similarly, Akidi and Omekwu (2019) assessed cataloguing operations in Nigerian libraries and found that effective cataloguing enhances the visibility and usability of library collections.

Classification, on the other hand, refers to the systematic arrangement of library materials based on subject relationships using standardized classification schemes. This process organizes knowledge into structured categories, making it easier for users to browse and retrieve relevant materials. Mugaburu and Thompson (2021) explored classification systems and observed that structured knowledge organization significantly improves resource discoverability. In addition, Ogunniyi et al. (2023) noted that classification systems play a critical role in guiding users to relevant information within large and complex collections.

The importance of cataloguing and classification has increased in the information age due to the growing volume and diversity of information resources. Libraries are now required to manage not only print materials but also digital resources, including electronic books, databases, and multimedia content. Igere (2024) analyzed developments in metadata and reported that modern cataloguing practices must adapt to accommodate diverse information formats. In the same vein, Ejiroghene (2020) observed that the integration of information and communication technologies has expanded the scope of cataloguing and classification in contemporary libraries. Despite their importance, cataloguing and classification processes face several challenges, particularly in environments where resources and infrastructure are limited. Onuoha and Chukwueke (2022) identified constraints such as inadequate technological facilities and insufficient training as factors affecting cataloguing efficiency in academic libraries. These challenges can lead to inconsistencies in bibliographic records and difficulties in information retrieval.

From a conceptual perspective, cataloguing and classification can be understood as interconnected processes that support the organization and accessibility of information within academic libraries. Their effectiveness depends on the application of standardized rules, professional expertise, and appropriate technological tools. As the information environment continues to evolve, these processes must adapt to meet changing user needs and technological advancements.

### **Concept Of Traditional Cataloguing And Classification**

Traditional cataloguing and classification refer to the conventional methods used in organizing library materials through manual processes and standardized rules. These practices

rely heavily on human expertise in creating bibliographic records and assigning classification numbers based on established schemes such as the Dewey Decimal Classification and Library of Congress Classification. Traditionally, these processes were designed to ensure consistency, accuracy, and uniformity in the organization of library collections, particularly in print-based environments.

In traditional library settings, cataloguing involves the detailed description of information resources using cataloguing codes such as the Anglo-American Cataloguing Rules (AACR2), while classification focuses on arranging materials according to subject relationships. Chollom and Daniel (2018) examined the importance of cataloguing and classification and reported that these processes provide the foundation for effective organization and retrieval of library resources. Similarly, Isyaku et al. (2018) analyzed cataloguing practices in Nigerian libraries and observed that traditional methods have historically supported efficient information access despite limitations in resources.

The effectiveness of traditional cataloguing and classification systems is largely dependent on the skills and competencies of professional cataloguers. These systems require a high level of precision and adherence to established standards to ensure uniformity across library collections. Njoku (2018) emphasized the need for continuous professional development in cataloguing and classification, noting that the performance of cataloguers significantly influences the quality of bibliographic records. In the same vein, Idiegbeyan-Ose et al. (2016) highlighted the evolving nature of cataloguing practices and stressed the importance of adapting traditional skills to meet emerging information needs.

Despite their historical relevance, traditional cataloguing and classification systems face increasing criticism in the context of the information age. One of the major limitations of these systems is their reliance on manual processes, which are often time-consuming and labour-intensive. Monyela (2023) investigated cataloguing practices in African libraries and reported that manual systems are inefficient in handling large volumes of information resources. Similarly, Bala et al. (2020) observed that traditional cataloguing methods are increasingly challenged by the rapid growth of digital information, making them less effective in modern library environments. Another significant limitation of traditional cataloguing systems is their rigidity and inability to adapt quickly to changing information formats. Modern information environments require flexible and dynamic systems capable of handling digital resources, multimedia content, and online databases. Adeeko et al. (2025) examined cataloguing practices in the era of artificial intelligence and found that traditional frameworks lack the adaptability required for integrating emerging technologies. Ajani et al. (2025) also noted that the absence of automation in traditional cataloguing systems contributes to delays and inefficiencies in information processing.

Furthermore, traditional cataloguing and classification systems often struggle to meet the expectations of contemporary users, who demand quick and seamless access to information. Posigha et al. (2019) examined cataloguing practices in academic libraries and reported that traditional methods are often too slow to support modern information retrieval needs. These limitations highlight the growing gap between traditional cataloguing practices and the demands of the information age.

From a conceptual standpoint, traditional cataloguing and classification can be viewed as foundational systems that have supported library operations over time but are increasingly

constrained by technological advancements and changing user expectations. While they provide a structured approach to organizing information, their limitations necessitate the exploration of more flexible and technology-driven alternatives. Understanding this concept is essential for analyzing the challenges associated with traditional cataloguing and for developing strategies to improve its relevance in contemporary academic libraries.

### **Concept Of Metadata And Modern Cataloguing**

Metadata and modern cataloguing represent the evolution of traditional cataloguing practices in response to the demands of the information age. Metadata refers to structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, and manage information resources, particularly in digital environments. Unlike traditional cataloguing, which focuses primarily on physical resources, metadata systems are designed to accommodate a wide range of digital formats, including electronic books, databases, multimedia content, and online repositories.

The emergence of metadata has significantly transformed the principles and practices of cataloguing in modern libraries. Igere (2024) examined developments in metadata and reported that it plays a central role in organizing digital information resources, enabling more flexible and efficient retrieval systems. Similarly, Mahmud (2024) analyzed the application of artificial intelligence in cataloguing and observed that modern cataloguing systems increasingly rely on automated metadata generation to enhance efficiency and accuracy in information processing. Modern cataloguing extends beyond the traditional use of cataloguing codes such as AACR2 to incorporate new standards and frameworks designed for digital environments. These include Resource Description and Access (RDA) and metadata schemas such as Dublin Core, which

provide more flexible approaches to describing information resources. Mugaburu and Thompson (2021) explored the implementation of BIBFRAME as a modern cataloguing framework and found that it enhances the representation and linking of bibliographic data in digital systems. In addition, Szeto (2024) emphasized that modern cataloguers are no longer limited to record creation but are increasingly involved in data curation, knowledge organization, and information policy development.

The integration of artificial intelligence and automation technologies has further redefined modern cataloguing practices. Lengyel (2024) discussed the role of generative artificial intelligence in library workflows and reported that automation is transforming cataloguing processes by reducing manual effort and improving efficiency. In a related study, Necula and Pavaloaia (2023) highlighted that artificial intelligence has the potential to revolutionize information systems by enabling intelligent data processing and adaptive retrieval mechanisms. Despite these advancements, the transition from traditional cataloguing to modern metadata-driven systems presents several challenges. Sugabsen and Yinasim (2024) examined cataloguing competencies in academic libraries and found that many library professionals lack the technical skills required to effectively utilize modern cataloguing tools. Onuoha and Chukwueke (2022) also identified infrastructural limitations and inadequate training as significant barriers to the adoption of modern cataloguing systems in Nigerian academic libraries.

Furthermore, the coexistence of traditional and modern cataloguing systems in many libraries has created a hybrid environment that requires careful management. While metadata provides flexibility and scalability, traditional cataloguing systems continue to offer structured and standardized approaches to bibliographic control. Adeeko et al. (2025) observed that

integrating traditional and modern systems remains a major challenge, particularly in institutions with limited resources.

From a conceptual perspective, metadata and modern cataloguing can be understood as adaptive systems designed to address the limitations of traditional cataloguing in the information age. They emphasize flexibility, automation, and interoperability, which are essential for managing digital information resources. Understanding this concept is critical for evaluating the challenges of traditional cataloguing and identifying strategies for improving information organization in contemporary academic libraries.

### **Concept Of Information Retrieval**

Information retrieval refers to the process through which users locate and access relevant information from a collection of resources. In library environments, it involves the use of catalogues, databases, and indexing systems to identify and obtain needed materials. The effectiveness of information retrieval largely depends on how well information resources are organized, described, and made accessible through cataloguing and classification systems.

In academic libraries, information retrieval is a critical function that supports teaching, learning, and research activities. Cataloguing and classification provide the structural foundation that enables efficient retrieval of information resources. Nwosu (2018) examined bibliographic control in contemporary libraries and reported that effective organization of resources significantly enhances users' ability to retrieve relevant information. Similarly, Chollom and Daniel (2018) observed that properly catalogued and classified materials improve accessibility and facilitate user navigation within library collections.

The information age has transformed information retrieval processes by introducing digital technologies and automated systems. Users now rely heavily on online public access catalogues (OPACs), digital repositories, and search engines to access information resources. Igere (2024) analyzed developments in metadata systems and found that modern retrieval processes depend on structured data that supports efficient searching and indexing. In the same vein, Mahmud (2024) noted that artificial intelligence is increasingly being integrated into information retrieval systems to improve search accuracy and user experience.

Despite these advancements, challenges persist in achieving effective information retrieval, particularly in environments where traditional cataloguing systems are still dominant. Traditional cataloguing methods often lack the flexibility and speed required for efficient retrieval in digital environments. Monyela (2023) examined cataloguing challenges in evolving information environments and reported that outdated systems can hinder timely access to information. Similarly, Onuoha and Chukwueke (2022) identified infrastructural and technological limitations as factors affecting retrieval efficiency in academic libraries.

User behavior and expectations also play a significant role in shaping information retrieval systems. Modern users expect fast, intuitive, and remote access to information resources, often comparable to search engine experiences. Ogunniyi et al. (2023) observed that the effectiveness of retrieval systems influences user satisfaction and overall library service delivery. These expectations place additional pressure on cataloguing and classification systems to evolve and align with contemporary information access patterns.

From a conceptual perspective, information retrieval can be viewed as the outcome of effective cataloguing and classification processes. It represents the point at which users interact

with organized information systems to meet their information needs. The efficiency of retrieval systems depends on the quality of bibliographic records, the structure of classification schemes, and the integration of modern technologies. Understanding this concept is essential for evaluating the impact of traditional cataloguing practices on information access in the information age.

### **Challenges Of Traditional Cataloguing And Classification In The Information Age**

Traditional cataloguing and classification systems have played a significant role in organizing library resources over time; however, their continued use in the information age has exposed several limitations. These challenges arise from the interaction between conventional cataloguing practices and the rapidly evolving digital information environment, which demands more efficient, flexible, and technology-driven approaches to information organization.

One of the most prominent challenges of traditional cataloguing is its reliance on manual processes, which are often time-consuming and labour-intensive. Traditional cataloguing requires cataloguers to create bibliographic records individually, following strict rules and standards. Bala et al. (2020) examined cataloguing practices in Nigeria and reported that manual processes significantly slow down the organization of library materials, particularly in environments with large and growing collections. Similarly, Isyaku et al. (2018) observed that the time required to catalogue resources manually affects the timely availability of materials for users.

Another major challenge is the inability of traditional cataloguing systems to cope with the rapid growth and diversity of information resources in the information age. The emergence of digital resources, including electronic books, databases, and multimedia materials, has expanded the scope of library collections beyond what traditional systems were designed to handle. Igere (2024) reported that the increasing complexity of information formats requires more advanced

organizational systems, while Mahmud (2024) noted that traditional cataloguing lacks the scalability needed to manage large volumes of digital data effectively.

The rigidity of traditional cataloguing rules also presents a significant limitation. These systems are based on fixed standards that may not easily adapt to new forms of information resources. Adeeko et al. (2025) examined cataloguing practices in the context of artificial intelligence and found that traditional frameworks are often too inflexible to integrate emerging technologies. In the same vein, Necula and Pavaloaia (2023) observed that modern information systems require adaptive and intelligent approaches that traditional cataloguing methods are unable to provide.

In addition, traditional cataloguing systems are heavily dependent on the expertise and competencies of cataloguers, which can vary significantly across institutions. Njoku (2018) emphasized that inadequate professional training and lack of continuous development negatively affect the quality of cataloguing outputs. Sugabsen and Yinasim (2024) further reported that many cataloguers lack the necessary skills to adapt to modern cataloguing tools, creating a gap between traditional practices and current technological requirements.

Technological and infrastructural constraints also pose serious challenges to the effectiveness of traditional cataloguing systems, particularly in developing countries. Onuoha and Chukwueke (2022) identified inadequate technological infrastructure, insufficient funding, and limited access to modern cataloguing tools as major barriers in academic libraries. These constraints hinder the transition from manual to automated systems and limit the efficiency of cataloguing operations.

Another challenge is the difficulty in achieving efficient information retrieval using traditional cataloguing systems. As user expectations continue to evolve, there is increasing demand for faster and more intuitive access to information resources. Monyela (2023) reported that traditional systems often fail to meet these expectations due to their slow processing speed and limited flexibility. Similarly, Ogunniyi et al. (2023) observed that inefficient cataloguing practices can negatively affect user satisfaction and the overall effectiveness of library services.

Furthermore, the coexistence of traditional and modern cataloguing systems in many libraries has created a hybrid environment that can be difficult to manage. Libraries often maintain manual systems alongside digital platforms, leading to inconsistencies and duplication of records. Mugaburu and Thompson (2021) examined the implementation of modern cataloguing frameworks and noted that integrating traditional and digital systems remains a significant challenge for many institutions.

Resistance to change among library professionals also contributes to the persistence of traditional cataloguing challenges. Some cataloguers may be reluctant to adopt new technologies due to lack of training or fear of technological complexity. Idiegbeyan-Ose et al. (2016) highlighted that resistance to innovation can slow down the adoption of modern cataloguing practices, thereby limiting the effectiveness of library services in the information age.

From a broader perspective, these challenges highlight the gap between traditional cataloguing practices and the demands of contemporary information environments. While traditional systems provide a structured approach to organizing information, their limitations in terms of efficiency, flexibility, and technological adaptability reduce their relevance in modern

academic libraries. Addressing these challenges is therefore essential for improving cataloguing practices and enhancing access to information resources in the information age.

### **Strategies For Improving Traditional Cataloguing And Classification In The Information Age**

Addressing the challenges associated with traditional cataloguing and classification requires a combination of technological, professional, and institutional strategies. As academic libraries continue to operate within the dynamic environment of the information age, there is a need to adopt innovative approaches that enhance the efficiency, flexibility, and relevance of cataloguing practices.

One of the most important strategies is the integration of modern technologies into traditional cataloguing systems. The adoption of automated cataloguing tools and artificial intelligence can significantly reduce the time and effort required for bibliographic record creation. Mahmud (2024) reported that automation improves the speed and accuracy of cataloguing processes, while Lengyel (2024) observed that artificial intelligence can enhance library workflows by enabling intelligent data processing. Integrating these technologies into traditional systems can help libraries manage large volumes of information more effectively.

Another key strategy is the adoption of modern cataloguing standards and frameworks that are compatible with digital environments. Transitioning from older standards such as AACR2 to more flexible frameworks like Resource Description and Access (RDA) can improve the adaptability of cataloguing systems. Mugaburu and Thompson (2021) examined the implementation of BIBFRAME and found that modern frameworks enhance the representation and interoperability of bibliographic data. Similarly, Szeto (2024) emphasized that contemporary

cataloguing practices require a shift toward data-oriented approaches that support digital information systems.

Capacity building and continuous professional development for cataloguers are also essential for improving cataloguing practices. Njoku (2018) highlighted the importance of training and performance evaluation in enhancing cataloguing efficiency, noting that skilled professionals are better equipped to handle evolving cataloguing requirements. Sugabsen and Yinasim (2024) further observed that improving cataloguers' competencies in modern tools and technologies is critical for bridging the gap between traditional and digital cataloguing systems.

Improving technological infrastructure is another crucial strategy for enhancing cataloguing and classification in academic libraries. Adequate funding and investment in modern library technologies are necessary to support the transition from manual to automated systems. Onuoha and Chukwueke (2022) identified infrastructural development as a key factor in improving cataloguing efficiency, particularly in developing countries where technological limitations remain a major challenge.

Collaboration and resource sharing among libraries can also contribute to improving cataloguing practices. Cooperative cataloguing initiatives allow libraries to share bibliographic records and reduce duplication of effort. Abdul et al. (2020) examined cataloguing challenges in Nigerian libraries and suggested that collaborative approaches can enhance efficiency and reduce the workload on cataloguers. Such initiatives can also promote standardization and consistency in bibliographic records across institutions.

In addition, there is a need to promote a positive attitude toward technological change among library professionals. Resistance to innovation can hinder the adoption of modern

cataloguing practices. Idiegbeyan-Ose et al. (2016) emphasized that embracing new technologies is essential for improving library services in the information age. Encouraging a culture of innovation and adaptability within libraries can facilitate the successful implementation of new cataloguing systems.

Furthermore, the development of hybrid cataloguing systems that combine the strengths of traditional and modern approaches can provide a practical solution to existing challenges. While traditional cataloguing ensures accuracy and consistency, modern systems offer flexibility and efficiency. Adeeko et al. (2025) observed that integrating traditional and digital cataloguing methods can enhance overall system performance and improve information access.

From a broader perspective, these strategies highlight the need for a holistic approach to improving cataloguing and classification practices. By combining technological innovation, professional development, and institutional support, academic libraries can enhance the effectiveness of their cataloguing systems and meet the demands of the information age. These strategies provide a pathway for transforming traditional cataloguing into a more dynamic and responsive system capable of supporting modern information environments.

## **Conclusion**

This paper examined the challenges associated with traditional cataloguing and classification in the information age, with a focus on their implications for academic libraries. The study explored key concepts including academic libraries, the information age, cataloguing and classification, traditional cataloguing practices, metadata and modern cataloguing, as well as information retrieval. Through this conceptual analysis, the paper established that while traditional cataloguing and classification systems have historically provided a structured and

reliable framework for organizing library resources, their effectiveness has been significantly constrained by the demands of contemporary information environments.

The findings revealed that traditional cataloging systems are increasingly limited by their reliance on manual processes, the rigidity of standards, and their inability to cope with the growing volume and diversity of digital information resources. These limitations affect not only the efficiency of cataloguing operations but also the effectiveness of information retrieval in academic libraries. In addition, factors such as inadequate technological infrastructure, insufficient professional competencies, and resistance to change further compound the challenges faced by traditional cataloguing systems.

Despite these challenges, the paper demonstrated that traditional cataloguing and classification remain relevant as foundational tools for bibliographic control. However, their continued relevance depends on their ability to adapt to the evolving demands of the information age. The study therefore highlighted the need for integrating modern technologies, adopting flexible cataloguing standards, enhancing professional competencies, and improving institutional support systems as critical strategies for addressing existing limitations.

In terms of contribution to knowledge, this paper provides a comprehensive conceptual understanding of the interaction between traditional cataloguing practices and the dynamic information environment. It advances the discourse by synthesizing existing literature and presenting a structured framework for analyzing the challenges and transformation of cataloguing systems in academic libraries. The paper also offers practical insights that can guide library professionals and policymakers in improving cataloguing practices and enhancing access to information resources.

In conclusion, the transformation of cataloguing and classification practices is not merely a technological necessity but a strategic imperative for academic libraries seeking to remain relevant in the information age. By embracing innovation while preserving the strengths of traditional systems, libraries can develop more efficient, flexible, and user-centered approaches to information organization and retrieval.

### Reference

- Abdul, B. S., Usman, I., Ibrahim, A., & Moh'd, A. S. (2020). The cataloguing challenges faced by cataloguers in the digital age in Nigeria. *Journal of Contemporary Education Research*, 13(8), 207–218.
- Adeeko, K. Y., Yaya, J. A., Kolawole, S. G., & Ogunjobi, R. O. (2025). Cataloguing and classification in the era of artificial intelligence: Prospects, challenges and way forward: A literature review. *Plateau Journal of Library, Archival & Information Science*, 2(2).
- Ajani, F. O., Amzat, B. O., James, B. O., & Sulyman, A. S. (2025). Cataloguing and classification practices for quality service delivery by library professionals in institutions in Kwara State, Nigeria. *Library Philosophy and Practice (e-Journal)*, 7355. <https://digitalcommons.unl.edu/libphilprac/7355>
- Akidi, J. O., & Omekwu, C. O. (2019). Assessment of cataloguing and classification practices of the National Library of Nigeria in the digital age: A bibliographic control perspective. *International Journal of Library & Information Science*, 8(1), 20–34.
- Akidi, J. O., & Okezie, C. A. (2018). Application of ICT to cataloguing and classification for effective bibliographic control in the National Library of Nigeria: Issues and challenges. *Library Philosophy and Practice (e-Journal)*, 2173. <https://digitalcommons.unl.edu/libphilprac/2173>
- Alabi, A. O. (2018). Information and communication technologies (ICTs) application to cataloguing and classification in Nigerian libraries. *Journal of Applied Information Science and Technology*, 11(1), 107–115.
- Arinola, A. A., Adigun, G. O., Oladeji, B. O., & Adekunjo, O. A. (2016). Impact of ICT on cataloguing and classification of library materials: Case study of selected university libraries in South-west Nigeria. *American International Journal of Contemporary Research*, 2(6), 122–127.

- Bala, S. A., Ibrahim, U., Adamu, I., & Abdulazizi, S. M. (2020). The cataloguing challenges faced by cataloguers in the digital age in Nigeria. *Journal of Contemporary Education Research*, 13(8).
- Chollom, K. M., & Daniel, A. (2018). Importance of cataloguing and classification in libraries. *International Journal of Research in Multidisciplinary Studies*, 1(1), 108–118.
- David-Westonck, B. T., & Angrey, C. U. (2018). Cataloguing and classification skills and information dissemination in libraries. *Journal of Educational Research and Review*, 6(7), 94–97. [https://doi.org/10.33495/jerr\\_v6i7.18.147](https://doi.org/10.33495/jerr_v6i7.18.147)
- Ebiwolate, P. B. (2010). The use of the library catalogue by undergraduate students in Niger Delta University Library. *Library Philosophy and Practice (e-Journal)*, 392. <http://digitalcommons.unl.edu/libphilprac/392>
- Eguaveon, O. E. L. (2013). Attitude of librarians to cataloguing and classification of library materials in Nigerian academic libraries. *Gateway Library Journal*, 17–22.
- Ejiroghene, E. (2020). Impact of ICT on cataloguing and classification of library materials. *Library Philosophy and Practice (e-Journal)*, 5088. <https://digitalcommons.unl.edu/libphilprac/5088>
- Esse, U. C. (2013). Current trends in cataloguing and the challenges of a cataloguer in the digital age. *Journal of Information and Knowledge Management*, 4(2), 16–23.
- Francis-Swanson, S. (2018). Information for a new age: Redefining the roles of libraries and librarians. [http://www.thevoiceslu.com/features/2010/april/17\\_04\\_10/Information\\_for\\_a\\_new\\_age.htm](http://www.thevoiceslu.com/features/2010/april/17_04_10/Information_for_a_new_age.htm)
- Idiegbeyan-Ose, et al. (2016). New paradigms in cataloguing in the 21st century: A review of implications and adoption of new strategies for Nigerian libraries. *Bilgidunyasi*, 17(1), 120–134.
- Igere, M. (2024). Metadata and resource management in the digital age: A duo-decadal bibliometric-narrative map and assessment. *Library Waves*, 8(2), 139–157. <https://librarywaves.com/index.php/lw/article/view/127>
- IGI Global. (2017). What is digital age? <https://www.igi-global.com/dictionary/digital-age/756>
- Isyaku, M., Bello, B. B., & Ado, G. (2018). Cataloguing and classification of library materials in libraries of Kano State, Northwest Nigeria: Challenges and prospects. *International Journal of Advanced Academic Research (Arts, Humanities and Education)*, 4(7).

- Lengyel, F. (2024). Generative artificial intelligence in library workflows: Transforming public, specialized and school libraries. <https://doi.org/10.13140/RG.2.2.34603.66080>
- Mahmud, M. R. (2024). Artificial intelligence in automating library cataloguing and classification. *Library Hi Tech News*. <https://doi.org/10.1108/LHTN-07-2024-0114>
- Martins, S., & Yinasim, P. M. (2024). Cataloguing and classification tools and competencies in selected academic libraries in Adamawa State. *Nigerian Library and Information Science Trends*, 9(1).
- Monyela, M. (2023). Challenges of cataloguing library resources in the evolving digital environment: The African cataloguer's experience. *Library Philosophy and Practice (e-Journal)*, 7667. <https://digitalcommons.unl.edu/libphilprac/7667>
- Moulaison-Sandy, & Cable. (2017). An LIS perspective on pedagogy: Principles of cataloguing and classification. <http://hdl.handle.net/2047/D2059755>
- Mugaburu, D., & Thompson, T. (2021). Implementing BIBFRAME in a pilot project at the Yale University Library. *NU Repository Drive*. <http://nur.nu.edu.kz/handle/123456789/5846>
- Muhammad, I., Baffa, B. B., & Garba, A. (2018). Cataloguing and classification of library materials in libraries of Kano State, Northwestern Nigeria: Challenges and prospects. *International Journal of Advanced Academic Research (Arts, Humanities and Education)*, 4(7), 50-57.
- Mustapha, A. A. (2021). Challenges and prospects for cataloguing and classification in academic libraries in Kwara State, Nigeria: A case study. *Library Philosophy and Practice (e-Journal)*, 6380. <https://digitalcommons.unl.edu/libphilprac/6380>
- Necula, S.-C., & Pavaloaia, V.-D. (2023). AI as a disruptive technology: A systematic literature review. <https://doi.org/10.3390/electronics12051102>
- Njoku, I. S. (2018). Professional development and performance evaluation for cataloguing and classification in Nigeria: A roadmap for performance management system. *Library Philosophy and Practice (e-Journal)*. <https://digitalcommons.unl.edu/libphilprac/1776>
- Nwalo, K. I. N. (2013). Subject cataloguing and computerization: Current trends. In *Current trends in information and communication application to technical services*.
- Nwosu, M. C. (2018). Bibliographic control: The changing perspectives of cataloguers, cataloguing and classification in the 21st century librarianship. *International Journal of Innovative Research in Engineering and Science*, 3(11).
- Obiozor-Ekeze, R. N. (2015). Cataloguing and classification of library materials in the 21st century: Challenges facing Festus Aghagbo Nwako Library Awka. *Library Research Journal*.

- Ogunniyi, S. O., Olubiyo, P. O., & Okedele, E.-O. L. (2023). Utilization of cataloguing and classification resources by postgraduates in library schools in selected private universities in South-west Nigeria. *Journal of Library and Information Science*, 25(1), 181–193.
- Onuoha, J., & Chukwueke, C. (2022). Perceived effects of ICT on cataloguing and classification of information resources in Michael Okpara University of Agriculture Library. *Middlebelt Journal of Library and Information Science*, 20, 100–111.
- Orbin, D., & Aina, A. J. (2014). Issues, benefits and challenges of original cataloguing versus copy cataloguing: The experience at Lagos State University. *International Journal of Library and Information Science*, 6(5), 88–97. <https://doi.org/10.5897/IJLIS>
- Paillet Chewe, & Chitumbo, E. M. (n.d.). Shaping library and information services delivery through innovation and technology at the University of Zambia.
- Posigha, B. E., Ojohwoh, R., & Oberhiri-Oruma, G. (2019). The challenges and prospects of cataloguing and classification in academic libraries in Bayelsa State, Nigeria. *Asian Journal of Information Science and Technology*, 9(3), 14–18. <https://doi.org/10.51983/ajist-2019.9.3.294>
- Roy, A., & Soumenolu, T. (2024). The impact of artificial intelligence on cataloguing and classification system in modern libraries. *Library Progress International*, 44(3). <https://doi.org/10.48165/bapas.2024.44.2.1>
- Sugabsen, M., & Yinasim, P. M. (2024). Cataloguing and classification tools and competencies in selected academic libraries in Adamawa State. *Nigerian Library and Information Science Trends*, 9(1).
- Szeto, K. (2024). The blended cataloguer in the post-digital library: Data curator, knowledge creator, information policymaker (Doctoral thesis). City, University of London. <http://openaccess.city.ac.uk/>
- Unegbu, V. E., & Onuoha, U. D. (2013). The Bible as a resource for teaching cataloguing and classification. *Journal of Curriculum Technology*, 2(1).