

Challenges Associated with the Use of Multimedia Resources in Northwest University Kano, Kano State

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Abstract

The study focused on identifying the difficulties related to the utilization of multimedia resources at Northwest University. The objective of the study was to develop ways of overcoming the identified Challenges related to the utilization of multimedia resources in the Northwest University Library. The study population comprises all Professionals Librarians of Northwest University Library. The target population of this study includes the Professional Librarians that served as Head of Department in different Units, Head of E-Library unit of the University Library that are responsible for the administration of E-Services and 7 Users from Northwest University Library multimedia Unit. The research instrument was interview. The study discovered insufficient funding, power failure, inadequate staff training and a lack of staff commitment are the major utilisation of multimedia resources. The study recommended among others that: the Northwest University management should make funds available for the library to acquire more current audiovisual equipment to replace the outdated ones; provision of alternative means of ensuring regular power supply; and staff training through seminars and workshops.

Keywords: Use of multimedia; Resources; Challenges; Library services; Northwest University; Kano

Introduction

Multimedia resources, which include videos, audio files, digital images, and interactive content, have become essential tools in modern libraries for enhancing learning and research experiences. These resources complement traditional library collections by offering dynamic, engaging, and versatile forms of information delivery. With the rapid digitization of information and the increasing demand for more interactive and accessible learning tools, multimedia has emerged as a critical component in fulfilling the diverse needs of library users. (Agbo & Bartholomew, 2021).

Multimedia is a sophisticated communication method that utilizes several media formats, including text, graphics, audio, video, and interactive elements, to convey information, entertain, and engage audiences. This amalgamation of media components produces material that surpasses conventional unimodal communication, cultivating a comprehensive and immersive experience. The text offers comprehensive information, graphics and photos improve visual representation, audio adds an aural element, and video incorporates dynamic visuals and motion. The integration of media components differentiates multimedia from traditional communication, providing a more thorough and influential mode of expression. (Ashikuzzaman, 2023).

However, despite the potential benefits of multimedia resources in enhancing library services, several challenges hinder their effective use. These challenges are multifaceted, ranging from technological and infrastructural limitations to issues related to user proficiency and copyright concerns. Libraries, particularly those in developing regions, often face difficulties in acquiring the necessary technology, bandwidth, and digital literacy skills required to support and manage multimedia effectively. Moreover, the ever-evolving nature of multimedia formats and platforms presents ongoing challenges for libraries striving to maintain up-to-date resources while ensuring their accessibility for all users (Ike, et al, 2023).

Multimedia resources are a category of information resources available in academic libraries. They serve as channels for fostering relaxation and enjoyment; they offer an escape from monotony. One could view intriguing educational films or listen to music on cassettes. Audio-visual resources furnish the user with direct information. They also enhance the cognitive imagination of consumers. Audio-visual resources are applicable across nearly all academic disciplines and age demographics. Projections may be conducted in dimly lit rooms. The image displayed by the slide or filmstrip can be thoroughly scrutinized by the class, allowing for an extensive duration for study and analysis; hence, slides and filmstrips are advantageous when meticulous examination is necessary.

Lukileni-Iipinge, & Mnjama, (2017).The U.S. National Archives and Records Administration (2016) defines audio-visual records as collections that include “motion picture film, still photographs, filmstrips, sound and video recordings, posters and other graphic works, and multimedia productions with related finding aids and production files”.

The term "multimedia" describes how various media, including text, pictures, audio, video, and interactive content, are combined to improve entertainment, education, and communication. It entails presenting information in an interesting and dynamic way using digital or non-digital technologies (Vaughan, 2018). Since it enables efficient information delivery through a variety of sensory channels, multimedia is widely used in business, education, and entertainment (Mayer, 2021).

History of Northwest University Kano Library

Following the founding of its parent institution, Northwest University Kano, formerly known as Northwest University Kano, the Northwest University Library was established in early 2013. Only five employees worked at the library in its early years, four of whom were employed by the Murtala Muhammed Library Board (Kano State Public Library Board). The university librarian, Malam Sanusi Abdullahi Nassarawa, was temporarily accompanied by the staff at the library (pioneer university librarian). Malam Isiyaku Nasiru Baba, Malam Haruna Hamisu Garba, Malam Sani A. Garba, and Malam Muftahu Yusuf Ahmed are among the temporary employees that were hired. These five employees could therefore be considered the team that established the library and battled through its initial stages of growth.

At first, the library was entirely housed on the sixth floor of Ado Bayero House in Kofar Nassarawa, which served as the university's temporary location and the only one that was operational at the time. As a result, all of the university's programs were taught there. The library's collection, including the circulation reading room, the university librarian's office, and all of its departments, including the technical service division and the collection development division, were housed in one of the sixth-floor wings. However, before a portion of the floor was later given to the faculty of science, the other wing housed the library staff's offices. However, there is currently no library staff office on that wing, particularly since the university is building a new library complex with enough offices to house current library staff at its permanent location.

Problem Statement

While multimedia resources have the potential to revolutionize library services by offering dynamic and interactive information, libraries face significant challenges in effectively utilizing these resources. Many libraries, especially in developing regions, struggle with inadequate technological infrastructure, limited access to modern equipment, and insufficient digital literacy among both staff and users. The lack of stable internet connectivity, high-quality multimedia hardware, and adequate software further hinders the effective integration of multimedia resources. Multimedia resources play a vital role in enhancing research, teaching, and learning in academic libraries. At Northwest University, Kano, these resources, including audiovisual materials, offer students and staff access to diverse educational content. However, despite their significance, the effective utilization of multimedia resources is often hindered by various challenges. These may include inadequate infrastructure, lack of technical skills among users, limited availability of materials, and maintenance issues. Additionally, factors such as poor internet connectivity, insufficient funding, and lack of awareness may further impede their optimal use. This study seeks to examine the specific challenges faced by staff and students in utilizing multimedia resources in the university library, with the aim of identifying possible solutions for improving access and usability.

Research Objectives

1. What types of multimedia resources are available in the Maitama Sule University Library, Kano?
2. What challenges do staff and students face in using multimedia resources in the Maitama Sule University Library, Kano?

Review of Related Literature

Types of Multimedia Materials Available in Academic Library

Projectors, microscopes, display boards, posters, images, computers, CDs, VCDs, PowerPoint presentations, and other multimedia equipment are available in libraries. Computer programs, projectors, CD-Roms, charts, DVDs, pictures, compact discs, microscopes, display boards, maps,

microfilms, and posters are the most readily available of these multimedia resources. Others are either scarce or of very little use.

Sound and moving image recordings in various formats make up the multimedia resources found in academic libraries. These resources are essential for research and education because they provide useful access to historical, cultural, and educational content (Vinson & Jones, 2024). Types of multimedia materials available in academic libraries include video resources, audio resources, images, flash resources, and multimedia databases such as music and film databases. These materials enhance user education, information retrieval, and overall library services. Multimedia tools that can improve the creation and maintenance of special collections in university libraries, encouraging user engagement and resource revitalisation, including intelligent media like artificial intelligence, virtual reality (VR), and augmented reality (AR) (Li, 2023).

Audio resources, graphic and picture resources, video resources, animation resources, and textual materials are among the library's multimedia resource kinds. These elements promote improved learning experiences and increase the efficacy of library user education initiatives (Anyim, 2018). Interactive media, including educational games, simulations, and software applications, have also become increasingly popular in academic libraries. These resources promote active engagement by allowing users to participate in virtual experiments, problem-solving exercises, and skill-based learning activities. Interactive multimedia materials are particularly valuable in fields such as engineering, medicine, and science, where hands-on learning is essential (ALA, 2018).

According to Nwangwu and Obi (2014), “multimedia instructional resources aid instructors in conveying information easily to students and facilitate clear understanding of concepts as well as capturing students’ interest and attention throughout the duration of instructional activity”. Multimedia materials in academic libraries encompass a diverse range of resources that enhance educational experiences and facilitate access to information. These materials include audiovisual content, digital resources, and interactive applications, each serving distinct purposes within the academic environment. The following sections outline the primary types of multimedia materials available in academic libraries (Vinson & Jones, 2024).

Academic libraries are increasingly implementing cutting-edge technology like augmented reality (AR) and virtual reality (VR). Students can connect with complex subjects through immersive

learning experiences made possible by these technologies. For example, AR may superimpose digital data on real-world items to improve topics like architecture and engineering, while VR can replicate real-world situations for medical students, offering a secure environment for practicing procedures (ALA, 2018).

A study by Ozohu et al. (2023) identified several multimedia resources prevalent in Nigerian university libraries, including:

Photographs: Visual representations used to support teaching and learning.

Audio and Video Recordings: Materials such as recorded lectures and educational videos that aid auditory and visual learning.

Projectors: Devices facilitating the display of visual content to large audiences.

Globes/Maps/Atlases: Geographical tools assisting in the study of earth sciences and related disciplines.

Plasma Televisions and Computers: Electronic devices used for accessing and displaying digital content.

Library Management Software: Systems that streamline library operations and services.

Electronic Information Resources and Internet Connectivity: Digital platforms and online access that provide a wealth of information beyond physical collections.

Challenges associated with the utilization of multimedia resources in academic libraries

The capacity of libraries to make multimedia resources accessible is adversely affected by a number of factors. One unsettling issue with the use of multimedia resources in university libraries is inconsistent power. One unsettling issue with using multimedia resources to instill skills and knowledge is inconsistent power. Additionally, according to Oviawe and Uddin (2020), the use of available audiovisual resources for dissemination and for teaching rural farmers climate change adaptation skills and knowledge has decreased as a result of the inconsistent electric power supply. The available audiovisual resources cannot be operated due to a lack of power. The majority of these devices—such as projectors, radios, televisions, movies, etc.—need electricity to function, which is unavailable in many schools.

Multimedia resources present a number of difficulties for libraries, such as data security, privacy issues, information overload, and the digital divide. As libraries adjust and make technological

investments to effectively handle these challenges, it is still imperative to guarantee accessibility for all users (Rahmanova, 2025).

Slow internet connectivity, inadequate teacher preparation, a lack of digital classrooms, and inconsistent teacher-student ratios are some of the major obstacles to successfully implementing multimedia resources in the classroom, according to a study by Huda (2024). These issues may also exist in library settings.

Gholap & Sontakke (2024) identifies challenges in digitization, including legal considerations, financial constraints, and the need for skilled information workers. These obstacles hinder the effective use of multimedia resources in academic libraries, impacting their acquisition, selection, and preservation strategies.

Challenges such as financial constraints, lack of proper teacher training, large class sizes, and insufficient awareness of modern teaching methodologies as significant barriers to implementing multimedia resources effectively in educational settings, including libraries (Velmurugan & Mishra, 2023).

Methodology

Research Design:

This study will adopt a qualitative research design to explore the challenges associated with the use of multimedia resources in libraries. A qualitative approach is suitable for this study as it allows for a deeper understanding of participants' experiences, perceptions, and the complex factors influencing the use of multimedia in library settings. Semi-structured interviews with important stakeholders, such as library employees and patrons, are used to collect data. By facilitating open-ended discussions, these techniques will allow participants to share their opinions about the educational, technological, and infrastructure obstacles they face when using multimedia resources. In qualitative research, the focus is on gaining in-depth insights rather than generalizing findings to a larger population. The selection of seven students for the interview was based on purposive sampling, which allows researchers to choose participants who can provide rich, relevant, and diverse perspectives on the challenges of using multimedia resources in the Northwest University Library.

This sample size was considered adequate for achieving data saturation, where no new significant information emerges from additional interviews. Furthermore, conducting in-depth interviews

with a smaller group ensures a more detailed exploration of personal experiences, perceptions, and challenges faced by students. Given the time and resource constraints, this approach was the most effective way to gather meaningful qualitative data for the study.

The study targeted both potential users and professional librarians serving as Heads of Units and the Head of the E-Library Unit at Northwest University Library. These librarians were specifically chosen because they are directly responsible for the administration of e-services and multimedia resources in the library. Their expertise and experience provide valuable insights into the availability, management, and challenges associated with multimedia resource usage.

By including professional librarians, the study ensures a comprehensive perspective, capturing both potential user experiences (students) and administrative (librarians). This approach enhances the depth and reliability of the findings, helping to identify practical solutions for improving multimedia resource utilization in the university library.

Analysis and Discussion of Findings

Table 1: General Information of the Participants (Professional Librarians)

S/N	Position Held	Qualification
1	Head of E-Library	Ph.D
2	Head of User Services	Masters
3	Head of Serial	Masters
4	Head of Arabic and Islamic Resources Department	B.A
5	Head of Reference	BLS/MLS
6	Head Collection Development	BLS/MLS
7	Head of E-Library	Ph.D

General Information of the Participants (Students)

S/N	Position Held	Level
1	Students	Level 4
2	Students	Level 4
3	Students	Level 2
4	Students	Level 3
5	Students	Level 4
6	Students	Level 2
7	Students	Level 4

The table also shows that among the participants, the Head of the E-Library Unit holds a Ph.D., reflecting a high level of expertise in managing digital and electronic resources. The Head of User Services and the Head of Serial Unit both possess Master's degrees, indicating advanced

knowledge in their respective areas, including user engagement and serial publications management. Additionally, the Head of the Arabic and Islamic Resources Department holds a Bachelor's degree (B.A.), specializing in managing Arabic and Islamic studies materials. The Heads of Reference and Collection Development Units have qualifications in Library and Information Science (BLS/MLS), equipping them with the necessary skills to support research, reference services, and resource acquisition. The findings highlight that the library is managed by highly qualified professionals who oversee the provision and administration of multimedia resources. Their insights revealed various challenges, including limited funding, technical difficulties, insufficient user training, and inadequate infrastructure for effective multimedia resource utilization. Their expertise also helped identify potential strategies for improving access and usability of these resources. Secondly, the study also gathered insights from students across different academic levels at Northwest University, Kano. Among the participants, the majority were final-year (Level 4) students, indicating a higher level of experience in using the library's multimedia resources. Their perspectives provided valuable information on how multimedia materials have supported their research and studies over time. Additionally, students from Level 2 and Level 3 were also interviewed, ensuring that the study captured a broad range of experiences from both upper and lower-level students. The inclusion of younger students helped in understanding the early-stage challenges faced when accessing and using multimedia resources, while the final-year students offered insights into long-term usage patterns and challenges.

1. **Question 1:** What types of multimedia resources are available in the Maitama Sule University Library, Kano?

Types of Multimedia resources in Maitama Sule University Library, Kano

P1, P2 & P3: The Types of Multimedia resources are Text Digital or printed text used in documents, e-books, presentations, and websites. Images – Photos, illustrations, infographics, and charts that visually support content. Audio – Sound files, including podcasts, music, recorded lectures, and sound effects.

P4: The type of Video Recorded or live video content such as tutorials, lectures, documentaries, or animations. Animations Moving graphics or illustrations used to explain concepts dynamically. Interactive Simulations Virtual labs, models, or tools that allow users to interact and explore



scenarios. **Presentations** Slide-based content (e.g., PowerPoint or Prezi) that integrates text, images, and media.

P5: Usually, the types of Multimedia resources include **Online Tutorials and Courses** – Digital learning platforms that combine various multimedia elements for instructional purposes.

P6 & P7: Audio, music, recorded lectures Video content such as Films, lectures, documentaries, or animations

P8: The Types of multimedia we are video, Audio, Radio, Television, Satellite, Computers, Microphone, Public address system.

P9: the Types of multimedia I know are Animations Moving graphics or illustrations used to explain concepts.

P10, P11 & P12: Have nearly the same opinion: visuals: infographics, diagrams, and presentations or slideshows. Podcasts are audio. Screen capture, lecture capture, talking head videos, and animation are examples of video.

P13: Types of Multimedia resources we use in library are Social Media Content – Educational posts, videos, or discussions on platforms like YouTube, Facebook, or Twitter that offer multimedia learning.

P14: Games and Gamified Learning Tools; Educational games or tools that use game-like elements to teach specific skills or concepts.

Question 2: What challenges do staff and students face in using multimedia resources in the Maitama Sule University Library, Kano?

The responses obtained by the researcher revealed that there are numbers of challenges associated the Use of Multimedia Resources in the Library.

P1 & P2 The participants stated the same views that, inadequate infrastructure is the major challenge which includes lack of necessary equipment like projectors, interactive boards, and reliable internet access.

P3: The problem of using multimedia resources in library is Limited digital literacy among educators and students.

P4: Insufficient training for faculty members on integrating multimedia into teaching and learning activities.

P5: Limited financial support for acquiring and updating technology.



P6: My perception of the challenges on the use of multimedia is frequent power outages that disrupt multimedia use.

P7: The challenge I know is outdated or incompatible software that may support multimedia formats.

P8: The great challenge is resistance to change among the faculty members preferring traditional teaching methods over multimedia integration.

P9: Limited access to multimedia resources for off-campus or remote students due to inadequate online platforms.

P10 & P11: Content development challenges, where creating or sourcing high-quality, relevant multimedia content can be time-consuming and expensive.

P12: Technical support shortages, with insufficient staff to maintain or troubleshoot multimedia tools.

P13: Our major challenge includes High costs for multimedia tools.

P14: As a student, I faced difficulty in navigating multimedia platforms.

Discussion of Findings

The research examined the multimedia resources accessible at Northwest University Library, Kano, and the obstacles encountered in their use. The library uses a variety of multimedia resources, including text, images, audio, video, animations, interactive simulations, presentations, online courses, and social media content. However, infrastructure limitations, digital literacy issues, financial constraints, and technical support shortages hinder their effective use. Text-based resources, images, infographics, charts, audio resources, video content, interactive simulations, virtual labs, social media content, and gamified learning tools are essential for academic learning. The library also provides access to radio, television, computers, microphones, public address systems, and satellite-based multimedia tools to support both academic and general information needs.

The Northwest University Library faces challenges in effectively using multimedia resources. The findings show that inadequate infrastructure, including projectors, interactive boards, and reliable internet connections, hinders students and faculty from engaging with multimedia tools effectively. Limited digital literacy among students and faculty also contributes to the underutilization of available tools, such as e-books and interactive learning platforms. Insufficient training for faculty

members also hinders the integration of multimedia tools into teaching methods, leading to a preference for traditional lecture styles over multimedia-enhanced techniques. These obstacles impede the efficient utilization of multimedia tools in education.

Financial constraints and power outages are major challenges in the acquisition and maintenance of multimedia resources in universities. High costs of multimedia tools make it difficult for students and faculty to make use of needed devices and software, restricting accessibility. Frequent power outages also limit the usability of multimedia resources. The use of outdated or incompatible software also hinders accessibility. Resistance to change among faculty members slows down the adoption of modern teaching tools. Limited access to multimedia resources for off-campus students and content development challenges further hinder the use of multimedia resources. Shortages in technical support staff and complex user interfaces further discourage engagement with multimedia tools.

Conclusion

Multimedia resources play a vital role in enhancing education, making learning more engaging, interactive, and accessible. At institutions like Northwest University, Kano State, they offer vast potential to improve teaching methods and learning outcomes. However, challenges such as inadequate infrastructure, limited digital literacy, and financial constraints often hinder the effective use of these tools. To fully utilize the advantages of multimedia in education, these problems must be resolved. With the right investments in technology, training, and support, multimedia resources can transform the educational experience, fostering a more dynamic and inclusive learning environment.

Recommendations

1. The University should invest in upgrading its multimedia infrastructure, such as providing reliable internet access, modern projectors, and interactive boards in classrooms.
2. The Management should ensure stable power supply to enable the users have access to the resources provided in the library for use.
3. Library Management should organize regular workshops and trainings for faculty staff and students to improve their digital literacy skills. This would empower educators to integrate

multimedia tools into their teaching methods effectively and enable students to engage with digital platforms more confidently.

4. The University Management should allocate additional financial resources to maintain and upgrade multimedia tools in the library. The university can seek partnerships, grants, or government support to fund the acquisition of new software, content creation, and the maintenance of existing technology, ensuring long-term sustainability of multimedia resources.

References

- Ashikuzzaman, M.D (2023). Multimedia resources in library. *Library & Information Science Community*
- Agbo, A.D., Onyebuchi, G.U. and Bartholomew O. A. (2021). Utilization of audiovisual resources for skills and knowledge of climate change adaptation among rural farmers in Nigeria. *Global Review of Library and Information Science (GRELIS)*, 18 (2)).
- American Library Association. (2018). *Guidelines for media resources in academic libraries*. Retrieved from <https://www.ala.org/acrl/standards/mediaresources>
- Lukileni-Iipinge, H., & Mnjama, N. (2017). Preservation of audio-visual records at the National Archives of Namibia. *Journal of the South African Society of Archivists*, 50, 79-99.
- Anyim, W. O. (2018). Multimedia instructional resources for effective library user education programme in universities in North-Central, Nigeria. *Library Philosophy and Practice*. Retrieved from <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=5098&context=libphilprac>
- Gholap, M. R., & Sontakke, Dr. D. M. (2024). Challenges and opportunities in the digital age: A Case study of private university libraries in Bangalore. *Journal of Advances in Science and Technology*. Retrieved from <https://doi.org/10.29070/x5pr0489>
- Huda, S. T. (2024). Challenges of using multimedia tools in the teaching and learning process: instance from a college of Bangladesh. *Journal of Management and Business Education*, 7(3), 435–451. Etrieved from <https://doi.org/10.35564/jmbe.2024.0024>
- Ike, N. I., Chinedu, O. N., & Umah, C. (2023). Impact of digital technologies on resources and services of public libraries in Anambra and Imo State. *Library Philosophy & Practice*.
- Lombardi, J.V. (2000). University libraries in a digital age. *D-Lib magazine* 6(10).
- Li, J. (2023). *Research on the Service of Special Collections of University Libraries Empowered by Intelligent Media*. <https://doi.org/10.11648/j.ajist.20230702.17>
- Mayer, R. E. (2021). *Multimedia learning*. 3rd ed. Cambridge University Press.
- Nwangwu, E.C & Obi, C.A. (2014). Editing and animation creation skills possessed by computer education lecturers for effective instructional delivery in colleges of education in Southeast zone of Nigeria. *International Journal of Educational Research*, 13(1):236-239.
- Oviawe, J.I. and Uddin , P. S. O. (2020). Improving students' academic achievement and interest in geometry through audio-visual resources as instructional strategy. *European Journal of Alternative Education Studies*. 5 (2).
- Ozohu, A. A., Oyedokun, T. T., Ambali, Z., & Medinat, L. D. (2022). Perceived usefulness and users' attitude as correlate of multimedia resources utilization in Nigerian university libraries. *Bilgi Yönetimi*, 6(1), 118-131.



- Vaughan, T. (2018). *Multimedia: making it work*. 9th ed. McGraw-Hill Education.
- Vinson, E., & Jones, N. (2024). *Audiovisual materials*. Elsevier BV. Retrieved from <https://doi.org/10.1016/b978-0-323-95689-5.00012-2>
- Rahmanova, A. (2025). Evolution of libraries in the digital era: Redefining access, education, and cultural preservation. *Kütüphane Arşiv ve Müze Araştırmaları Dergisi*, 6(1), 23–38. <https://doi.org/10.59116/lamre.1540033>
- Talikoti, S. C. (2023). How to impact with electronic resources in academic libraries. *ShodhKosh Journal of Visual and Performing Arts*, 4(2). Retrieved from <https://doi.org/10.29121/shodhkosh.v4.i2.2024.1976>
- Velmurugan, S., & Mishra, D. (2023). *Challenges of multimedia education in the lives of human beings*. Springer International Publishing. Retrieved from https://doi.org/10.1007/978-981-99-6568-7_14