

EXAMINING THE USE OF MULTIMEDIA RESOURCES FOR INFORMATION PROVISION AT THE AFRICAN BIBLE UNIVERSITY

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S19/M63/231

**A DISSERTATION SUBMITTED TO THE SCHOOL OF EDUCATION IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER
OF LIBRARY AND INFORMATION STUDIES OF UGANDA CHRISTIAN UNIVERSITY**

April, 2026



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Declaration

I Kicaobanga Praisegrace Joy declare that this is my original work. Any assistance I obtained to produce this work was duly acknowledge and cited. I affirm that this work has never been produced by anyone else, neither presented to any university, institution, or college of higher learning.

Signature:



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Date: May, 2026.

Approval

This dissertation has been submitted for examination with approval of my supervisor Mr. Ssekitto Francis.



Signature

Date May 2026

Dedication

I dedicate this work Prof. Owen Palmer Robertson whose love and dedication to writing and the library inspired my academic journey. Also, to my dearest mother Hellen Rose Odur who stood the test of time as the best mother and gift the Lord could ever give me and my siblings. You are a heroine mom!

Acknowledgements

I am grateful to the Lord Most High for His grace and wisdom to pursue this Master degree to completion. Lord, you Mighty hand prevailed against all odds.

Much appreciation to Mr. Ssekitto Francis for your guidance during the course of working on this study.

Thank you to all my lecturers: Dr. Sarah Kaddu, Dr. Mrs. Eunice Ssendikadiwa, Mr. Ssekitto Francis, Mr. Kalule Ezra, Mr. Mubiru Steven and The Late Prof. I. M. N. Kigongo Bukenya, may his soul rest in peace. Your help and guidance culminated into completion of this work.

I Appreciate African Bible University for allowing me to conduct this study, colleagues, and students for their unwavering support, and everyone who kept praying for me to finish well.

To all my classmates: Betty, Judith, Daisy, Lillian, Annette, Ayub, and Rahmah I will cherish the beautiful memory of our time together. Thank you for teaching me. You were a great team!

To my lovely mom and siblings: Stephen, Tina, Louisa, Rachel, Moses and Tom much blessings. Let us keep moving and may the Lord reward your support during the time I was working on this study.

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Abstract

This study was intended to examine the degree and effectiveness of multimedia instructional resources in information provision and suggest approaches for improving use of multimedia instructional resources in African Bible University (ABU) library. The objectives of the Study were to: evaluate the degree of use of multimedia resources, detect challenges students and librarians experience while using multimedia resources, and to suggest approaches to improve use of multimedia resources in ABU library.

The researcher used fish bowl draw random sampling technique to determine the sample size of study participants. Data collection instruments were questionnaires and interview guides. ABU library use text, graphics, audiovisuals, audio materials for information provision. Findings revealed that the degree of usage of multimedia in ABU library is high. Multimedia resources helped students and librarians obtain information faster, provide hands-on-experience, enables quick recall of information, increased their motivation and provide fulfilment etc. Challenges included: Catalogue computer has more text multimedia resources, few audiovisual and other multimedia resources, etc. Approaches for improving use of multimedia resources in ABU included: repairing the catalogue computer, improving its speed through quick access tools.

The study concluded that multimedia usage is high. Multimedia materials help patrons obtain information faster, provide hands-on- experience, increased motivation, enables quicker recall of information and gave fulfilment. The researcher recommends that ABU grant more time for library user education, provide ICT training to librarians and students and replace catalogue computer.

Keywords- Multimedia, Multimedia Instructional Resources, Text, Animation, Graphics, Video, Audio, University, and University Library

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1 Introduction

This chapter presents the background of the study, problem statement, research questions, purpose, objectives, significance, scope of the study and conclusion of this chapter. The researcher intends to use this chapter to introduce readers to the topic under investigation. The topic of the study is 'Examining the use of multimedia resources for information provision at the African Bible University.'

1.2 Background of the Study

University education provides a range of study areas that prepares human capital for life and development (Giuri *et al.*, 2019). A university is an institution of higher learning concerned with knowledge transfer through teaching, learning, and research activities (Anyim, 2018; Huggins *et al.*, 2020). Part of the grooming process requires students to learn on their own (Howell *et al.*, 2018). Students also receive instructions from academic staff, librarians, trainings and workshops (Huggins *et al.*, 2020). Categories of learners pursuing university education range from undergraduate, masters, and doctoral students (Anyim, 2018; Black & Hachkowski, 2019).

A library is a non-profit institution aiming to provide service and play the role of supporting teaching, research, promotion, and service (Yu *et al.*, 2018). The university library is an intellectual supply centre (Blue, 2020; Greef & Jenkins, 2021). Traditional libraries relied on face-to-face approach to service patrons (Ozeer *et al.*, 2019). Today's libraries are evolving (Cao *et al.*, 2018) and are embracing ICT including multimedia elements (Ahmed & Sheikh, 2020) in service delivery. Because of advancement in ICT and multimedia resources (Reddy *et al.*, 2020) libraries today offers library user education programme, promotions, accessing Machine Readable Records

(MARC), reference services, etc. (Anyim, 2018; Owusu-Ansah *et al.*, 2019). According to Lediga & Fombad (2018) libraries depend on ICT tools like fixed, wireless, and satellite applications to supply internet, and multimedia resources.

Mode of learning in universities take different forms such as face-to-face, electronic, mobile, and blended learning approaches (Aali *et al.*, 2021; Huggins *et al.*, 2020). Although these forms of learning already existed (Zhu *et al.*, 2020), the practice of using multimedia resources through ICT equipment is on the rise (Nauman *et al.*, 2020). Covid-19 pandemic restrictions presented challenges to face-to-face learning and provision of library services, (Ahlburg, 2020). A study by (Connell *et al.*, 2021) on selected academic libraries in the United States in 2020 revealed that libraries halted face-to-face reference services, stopped physical circulation, including closure of the library building during the peak of the pandemic. According to Septiani *et al.*, (2020) multimedia is media that uses multiple forms of information content and information processing.

Multimedia also means amalgamation of media such as videos, still images, audios, and texts electronically delivered and users access interactively (Zhu *et al.*, 2020). Basic multimedia elements used in the teaching-learning process include text, graphics, animation (cartoon), sound, and audiovisuals (Anyim, 2018). According to De Sousa *et al.*, (2017) computers, slide projectors, video projection, overhead projectors, document cameras, audio systems (a CD player, radio), combined sound and video systems (television, digital video cameras, and DVDs), relay media materials to users.

Advancement in ICT including use of multimedia resources is changing the face of education, and library service delivery (Saptiani *et al.*, 2020). The concept of information provision

in library service delivery pertains to availing information and information materials to users (Idiegbeyan-Ose *et al.*, 2019). Using multimedia instructional materials for information provision in the library requires application of digital skills by librarians, students, faculty and external users in order to search, retrieve, and access information materials (Anyim, 2018).

According to van Laar *et al.*, (2020) digital skills are a set of abilities relevant in the 21st century to use ICT tools for productivity and relevance. Digital skills refer to ability to manipulate and navigate computer appliances, internet, searching and retrieving information, reading, evaluating, and applying acquired information (Anyim, 2018; Bond *et al.*, 2018). Librarians can develop multimedia instructional materials and training manuals to instruct patrons to use computers to access information (Utami *et al.*, 2017). Training learners and other patrons to use multimedia instructional resources for information provision eliminates patron dependency for information search, retrieval, and evaluation (Anyim, 2018).

African Bible University: A Biblical University of Uganda

African Bible University (ABU) was founded in 2005. Her vision is to produce servant leaders for Christ who will contribute positively to the communities of family, church, state, and society by the formation and promotion of an environment in which mankind is aided in realizing its full potential in relation to the purposes of its creator (ABU, 2018). ABU is an international institution, that aims to offer academic programmes that meet minimum standards for courses of study set by National Council for Higher Education (NCHE) in Uganda (ABU, 2018).

1.3 Statement of the Problem

With growing technology Zhu *et al.*, (2020) education experts around the world have embraced its use in disseminating instructional information materials to students (Weng *et al.*,

2018; Yu *et al.*, 2018). Developed countries extensively use multimedia tools for this purpose (Guo *et al.*, 2020; Widyawulandari, 2018). There is growing evidence to prove that multimedia technology is a resourceful element in training students and improves learning (Anyim, 2018; Yu *et al.*, 2018). Multimedia resources are also very instrumental in library service provision (Greef & Jenkins, 2021).

African Bible University use multimedia instructional resources to disseminate information during teaching-learning process and provision of library services (ABU: E-learning Committee Minutes, 2020). Available information materials include text, graphics, audiovisuals, audio with and without words for information provision. However, what is uncertain is the degree of use of multimedia instructional materials for information provision in ABU Library. Hence, this study aims to evaluate the degree of the use of multimedia instructional resources in information provision in the university library to facilitate the teaching-learning process and research.

1.4 Aim of the Study

This study aimed at examining the degree of use of multimedia resources and its effectiveness, challenges, and suggest approaches for improving use of multimedia instructional resources in African Bible University library.

1.5 Objectives of the Study

- i. To evaluate the degree of use of multimedia instructional resources for information provision in African Bible University library.
- ii. To detect challenges students and librarians experience using multimedia resources for information provision in African Bible University library.

- iii. To suggest approaches that ensure improved use of multimedia instructional resources in African Bible University library.

1.6 Research Questions

- i. What is the degree of use of multimedia instructional resources in information provision in African Bible University library?
- ii. What challenges do students and librarians of African Bible University experience while using multimedia instructional resources in the library?
- iii. What approaches can African Bible University library adopt to improve the use of multimedia instructional resources for information provision?

1.7 Rationale of the Study

The motivation of the study was to help African Bible University top management and library management recognize the role of multimedia instructional resources in information provision to enhance the teaching-learning process and research. The study would boost the production of novel facts and data on multimedia instructional resources. The study would emphasize and strengthen the use of multimedia instructional resources in African Bible University. Empirical studies lay foundation for policy making thus, this study would provide facts and data for formulating educational policies that promotes the use of ICT and multimedia instructional resources in education at all levels. As always, empirical studies provide knowledge that other researchers draw upon to create new knowledge in related field of study.

1.8 Scope of the Study

This study was restricted to the use of multimedia instructional resources for effective information provision in African Bible University library in Kampala, Uganda. The study focused

on information provision using multimedia instructional resources at African Bible University to enhance the teaching learning process and research.

1.9 Conclusion

This chapter provides insight into the topic under study, 'examining the use of multimedia resources for information provision at the African Bible University,' context, the problem under investigation, and the purpose for conducting this study. The researcher hopes that objectives and research questions would pinpoint the very issues the study intend to address and would provide clarity that would guide the research paper and process. The study was limited to African Bible University however; other institutions can benefit from the knowledge generated by the study to inform and improve practice.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents information on the concept of information provision, the concept of multimedia, elements and characteristics, history of library collection, challenges of managing multimedia collection, nature of library users in the 21st century, theoretical underpinning, conceptual framework, challenges and strategies for improving use of multimedia tools in teaching learning process.

2.2 The Concept of Information Provision

Information is found in every niche of society like business, banking, education, health, communication, and economics etc., (Nath, 2017). It is a key component for development, (Idiegbeyan-Ose *et al.*, 2019). People and businesses thrive on information for numerical, financial, and commercial growth (Chatterjee, 2020). Information is not a new concept as survey of ancient literature reveal vast collection of information that modernity relay on today for important personal and business decisions (Lopez de la Lama *et al.*, 2021). A definition by (Merriam-Webster, n.d.) states, information is a message, conveying new data, or a picture which validates change in a construct such as a plan or assumption that depicts physical or mental experience.

Developing meaningful information requires planning and preparation in order to convey significant principles to the receiver (TechTarget.com, n. d.). People and businesses look for information that is timely, precise, complete and correct, and available for use as long as need arises (Wang & Sun, 2021). Society thrives well on communication of meaningful pieces of information tailored as instructions, that expresses values for continued existence (Zamani *et al.*,

2019). Libraries play profound role in keeping information materials and dissemination of information (Idiegbeyan-Ose *et al.*, 2019). Libraries acquire, process, keep, and disseminate information materials (Anyim, 2018; Moenga, 2020). Information provision in libraries occur during user education, enquiries, provision of reference services, and digital literacy etc. (Higgs *et al.*, 2018; Yu *et al.*, 2018).

2.3 The Nature of Library Users in the 21st Century

Libraries in the 21st century embraced the use of technology such as almetrics, artificial intelligence, social media, internet, video conferencing, and big data in order to fulfill demands of patrons (Ali *et al.*, 2020). Application of technology in library service provision aims to meet demands of users who are computer literate and abreast with digital technology (Chiecher & Melgar, 2018). This shows that library users in the present century are digitally oriented (Raju, 2020). Digitally oriented person is capable of manipulating computers, software applications, and other digital appliances such as digital cameras, scanners, projectors, smart phones, tablets, etc. to create, store, acquire, retrieve, and use information (Chaputula & Mutula, 2018). They are learned, digital literate, and can creatively interact with digital technology, innovate, communicate and collaborate using technology, social media platforms, smart phones, and well as execute varieties of functions using digital appliances (van Laar *et al.*, 2020).

Digital skills are increasingly becoming relevant for education and work places today than in the previous centuries (Carlisle *et al.*, 2021; van Laar *et al.*, 2020). According to (van Laar *et al.*, 2020), life skills such as flexibility, adaptability, initiative, self-direction, social and cross-cultural skills, productivity, accountability, leadership and responsibility form part of the 21st century digital skills necessary for education, businesses, corporations and organizations to thrive.

The 21st century library user possess digital learning, literacy, and life skills (Ali *et al.*, 2020) and is capable of applying critical thinking and problem-solving abilities to different situations (van Laar *et al.*, 2020). Today's library users are capable of finding information they need whether in the library or off campus through the internet (Anderberg *et al.*, 2020). Libraries continue to remain useful in the current context if they are capable of satisfying needs of both on campus and online community of users (Rifauddin, 2017).

2.4 History of Library Collection

A library is a centre for information (Blue, 2020; Greef & Jenkins, 2021) and place for sharing knowledge, collaboration, teaching, and research (Conrads *et al.*, 2017; Netwong, 2019). Libraries provide community services, selective dissemination of information, reference, circulation, translation, current awareness, reprography, and translation, to mention but a few (Noh & Hong, 2021; Vandana, 2021). Information professionals and librarians continuously work towards improving the quality of library collections such that libraries provide current, timely, and original information (Mwilongo *et al.*, 2020).

According to (LIS BD Network.com, 2021), libraries strive to provide affordable, timely, current, and original information and information materials to patrons. Libraries provide specific and general information materials to patrons without discrimination (Onobrakpor, 2022). Libraries aim at providing space for members of the community to interact during social and cultural activities (National Library of Israel, 2021), preserve information materials as well encourage growth of cultural and ancient tradition of society (Vandana, 2021).

Libraries focus on building collections, protection, and preservation of information materials (Vandana, 2021). According to (Rohmadi *et al.*, 2021), libraries strive to make

information materials in different formats available and accessible to patrons at the right time. Libraries are centres for continuous learning, sharing information and knowledge, recreational centres, and growth of society (Tyonum & Amarachi, 2021; Yu *et al.*, 2018). Although with the advent of digital technology one can access all the information they need whenever and wherever, several libraries still provide quiet and safe atmosphere for reading, studying, and researching (Blue, 2020; Greef & Jenkins, 2021). Not only that, libraries conduct user education studies for new students, (Anyim, 2018). Libraries make significant contribution to academia through research to improve quality of service and contribute to relevant literature in research and education (Yu *et al.*, 2018). Despite digital shift in provision of services, libraries still provide digital and physical loaning services to patrons (Noh & Hong, 2021).

Early forms of writing like cuneiform began with early civilizations such as the Sumerian people in ancient Mesopotamia as early as 3000 B.C.E (New World Encyclopedia, 2021). Egyptian civilization developed alongside Sumerian civilization and used hieroglyphs to preserve records of events that became part of mankind's history (Encyclopedia Britannica, 2021). Cuneiforms and hieroglyphs formed first ancient collection of history of mankind found in ancient libraries in Sumer, Egypt, and Assyria (Oldest.org, 2021). As civilization grew, man developed techniques for producing papers (Hemp Foundation, 2021). Scholars and philosophers began using paper for writing giving rise to paper collections (Bloom, 2017). This development triggered the establishment of Alexandria and Chinese Imperial Libraries etc. for keeping government and individual collections (Oldest.org, 2021).

Religious institutions such as Catholic monks and monasteries took up the role to preserve information materials after the fall of the Roman Empire (Oldest, 2021). Catholic monks and nuns

began to collect materials and wrote text and were kept in monasteries that partly functioned as libraries (Snell, 2019). Similar developments were taking place in the Islamic world as Imams and other Muslim scholars kept the Quran, and ancient development in astronomy, philosophy, and mathematics in libraries (Andrews, 2018). Non-religious libraries began to grow in Europe with the advent of the Renaissance followed by the Enlightenment (Gombos, 2021). The invention of the Gutenberg printing press by goldsmith Johannes Gutenberg in 1440 in Germany (Encyclopedia Britannica, 2021; Hoe, 2020) was a strong boost for libraries during the Middle Ages (History.Com Editors, 2021). The development of the printing press increased volumes of leisure and literacy reading materials (Hoe, 2020). Scholars who produced materials for mathematics, science, philosophy, and religion frequently met in libraries where they kept their collections (Oldest, 2021).

Library collection development aims to acquire information materials fit for users' needs (Echedom & Anyira, 2020). This process is continuous throughout a library's lifetime equipping the library with print and digital information materials (Mwilongo *et al.*, 2020). According to (Echedom & Anyira, 2020), Library collection development is orderly, and balanced arrangement by information professionals and librarians to build information materials that is relevant and timely to meet user's requests.

The process of library collection development starts with user needs information analysis to understand users' preference for information, and their thoughts (Vandana, 2021; Echedom & Anyira, 2020). Another important aspect includes planning and developing a policy to regulate collection development (Mwilongo *et al.*, 2020). According to (Vandana, 2021), librarians select and acquire information materials from vendors and publishers through purchases, donations,

gifting, exchange, and legal deposit. As noted by (Mwilongo *et al.*, 2020), librarians work towards licensing and purchase of electronic information materials to build non print library collections. Further, (Welch, 2020) argues that librarians weed collections to eliminate unwanted, obsolete, damaged materials. Libraries keep high quality information materials for patrons, and continue to evaluate collection for relevance and quality (Vandana, 2021).

Library collections consist of a variety of information materials categorized under print and non-print (Vandana, 2021). Print information materials include books, maps, journals, magazines, and reference resources, etc. (Vandana, 2021). Non print information materials come in digital format such as phonographs, compact discs (CDs), digital versatile disc (DVDs), flash drives, etc. (Vandana, 2021; Mwilongo *et al.*, 2020) that exists as multimedia in forms of visual, audiovisual materials, snap chats, texts, photographs, etc. (Anyim, 2018).

Libraries in the 21st century are embracing digital technology thus, service provision take both traditional face-to-face and digital format (Noh & Hong, 2021). Libraries are using digital technology for providing walk through services, automation, provision of online resources, and electronic resources, instruction services (Ali *et al.*, 2020). The presence of digital technology in the library has made libraries capable of running online courses such as "Utilizing the Competencies to Boost Skills and Services" offered by The Association for Library Services to Children (ALSC) a division of The American Library Association (ALA) (American Library Association, n. d.).

2.5 The Concept of Multimedia

Multimedia is an assimilation of diverse types of media (Komalasari & Rahmit, 2019). While Zhao & Zhang (2020) defines multimedia as the project with interactive development.

Smirnova *et al.*, (2020) states that

"Multimedia is a multi-media technology that efficiently implements the design and implementation of content, methods and forms of learning for the objectives of the learning process which involve the availability of technical and software tools for multimedia and interactive software."

Multimedia technology is widely embraced in several fields such as health, communications, construction, transport, security, and education (Desai *et al.*, 2017). According to (Anyim, 2018) the different kinds of media combined include text, graphics, sound, audiovisuals, and animation. Libraries can combine text, audio, video, animations, and graphics to deliver information to users and in conducting some of its activities (Anyim, 2018). Multimedia applications are interactive, integrated, and its digital abilities necessitate use of information and communication technology tools in the production, distribution, viewing, storage, and managing contents (Abdulrahman *et al.*, 2020). Interactive nature of multimedia implies relations or interface between the user and the computer, multimedia projector, and interactive white board (Smirnova *et al.*, 2020). According to Kapi *et al.*, (2017), authoring multimedia contents takes a combination of software and hardware applications.

2.5.1 Text

This is the basic form of multimedia that engage application of various text sizes, types, colours, etc. (Anyim, 2018). Multimedia content authors engage the use of text in the production of different media to provide headings, instructions, and titles etc. (Ahmad Basri *et al.*, 2021). Multimedia authors and end users can create or view text using software applications such as Microsoft Word, WordPad, Google documents etc., (Guan *et al.*, 2018). Creators of text

documents use Doc, TXT, etc. to format text files (Krewinkel & Winkler, 2017). In library and information science, librarians use text media for sharing information, user education, and in technical services such as classification, cataloging data, and electronic library walk through (Anyim, 2018).

2.5.2 Graphics

Graphics refers to information such as charts, photographs, and including drawings (Ahmad Basri *et al.*, 2021). Graphics are digital, striking in appearance, and relay information in a simple way that brings understanding (Yu *et al.*, 2018). Graphics present as bitmaps (paint graphics) where images appear as collections of pixels (Alemdag & Cagiltay, 2018). It also presents as vectors (draw graphics) referring to images drawn using computer software (Bao & Fu, 2019; Li *et al.*, 2020). In provision of library services, librarians use graphic presentations to produce reports and statistics for evaluation purposes or observing trends in patrons regarding usage of certain resources (Anyim, 2018). Librarians use graphical presentations during library user education activities and presenting information to children, including provision of graphical books for children's programmes (Moeller & Becnel, 2021).

2.5.3 Sound/Audio

Audio multimedia contents refer to recorded media such as music, narration, speech, and any other sound to convey meaningful information to listener (Anyim, 2018). Sound interrupt boredom and attract listener to tune to information that renders prospect for increased understanding (Park *et al.*, 2020). Audio clips in the library take the form of voice, narration, speech, instructions, and music for training, work, and social events (Anyim, 2018).

2.5.4 Video

Video technology uses electronic devices to capture, record, process, store, distribute, and reconstruct chain of still images alluding to scenes in motion (Ploetzner *et al.*, 2020). Videos have ability to portray things as real that facilitate learning through explanations, instructions, and demonstrations (Ahmad Basri *et al.*, 2021). Libraries use multimedia video in sharing knowledge, community events, educational, entertainment, and social functions (Anyim, 2018).

2.5.5 Animation

Animations refers to a chain of graphics that forms a false impression of objects in activity (Ploetzner *et al.*, 2020). Animation is a powerful element to convey information both to children and adults whether for educational or recreational purposes (Guan *et al.*, 2018). Animation presentations are clear, attractive, attention grabbing, present things as real that increases understanding of target audience (Ploetzner *et al.*, 2020). Librarians use animated clips for entertainment, children's programmes, educational, and social activities (Anyim, 2018).

2.5.6 Characteristics of Multimedia

Multimedia applications are computer controlled: Multimedia applications operate in computer-controlled environment for content creation using software like authoring tools, image, sound, and video editing applications (Wijaya *et al.*, 2021). According to (Lee *et al.*, 2017), computers provide storage space, plays a role in transmitting and sharing multimedia contents. This is in line with findings by (De Asis Lopez Fuentes *et al.*, 2019) which states, the collaborative nature of computer software architecture allows storage and distribution of multimedia files using information disposal algorithm (IDA). In addition to that, He *et al.*, (2019) asserts that end users exercise user equipment such as computer monitors, keyboard, speakers etc. to relay multimedia

contents.

Multimedia contents are integrated: Contents qualify as multimedia when media elements; text, graphics, audio, video, and animation are integrated to make meaningful information (Riza *et al.*, 2018). The nature of multimedia applications allows integrating camera and microphone controlled by a computer, where producers and editors store and view contents (De Asis Lopez Fuentes *et al.*, 2019).

Digital presentation: All multimedia elements; text, graphics, animations, sound, and video have digital properties which render suitability for digital representation (Nauman *et al.*, 2020).

Multimedia is interactive: This is the ability to use multimedia contents in a way one can control, for example using computer mouse to navigate websites, remote controlling a DVD player (Karaagac *et al.*, 2019). This feature is important because end user can leverage streaming of multimedia contents (Nauman *et al.*, 2020).

2.6 Challenges of Managing Multimedia Collections

Libraries acquire various resources including multimedia and digital contents to meet user needs (Vandana, 2021). According to Kraft *et al.*, (2017), features of managing multimedia collections involves indexing, storage, preservation, cataloging, licensing for text, digital object identification (DOI) registration. However, librarians experience challenges related to managing multimedia collections like security for digital contents without fringing copyright, storage of multimedia contents, and organizing multimedia contents on the stack (Sahoo *et al.*, 2018). Okogwu & Achebe (2018) contends that librarians lack digital skills to handle complex nature of multimedia collections. Fragile nature of compact disc read only memory (CD-ROMs), DVDs,

and external drives presents difficulty if they are in constant use that renders exposure to dust, dirt, and mishandling causing damage, breakage, or error contributing to loss of information content if the library does not have back-up files (Sahoo *et al.*, 2018). Copyright issues are tasking for libraries as processing permission and necessary documents cost time and funds (Okogwu & Achebe, 2018). Further, Sahoo *et al.*, (2017) argues that managing the information content in terms of indexing and retrieving is complicated when the media content is a combination of text, video, audio, graphics, and animation rendering difficulty placing them on external stacks or digital storage device.

2.7 Theoretical Underpinning: Multimedia Resources in Information Provision

Using multimedia in the provision of library services stems from understanding the information needs of education, educators, researchers, and students in the 21st century (Anyim, 2018). Provision of timely and fast services is an indicator for efficiency in service provision (Alam & Al-Amri, 2020). Libraries using multimedia technology in service delivery is responding to the nature and information needs of user in 21st century (van Laar *et al.*, 2020; Yu *et al.*, 2018). Further, multimedia in the library serves to strengthen the provision of library services to patrons to meet the growing information needs of users that revolves strongly on the 21st century digital skills (Johnston, 2020). Libraries also participate in training users in digital skills to navigate information resources (Netwong, 2019).

Using multimedia in library services provide support to government and academic institutions to support onsite, distance, and e-learning (Conrads *et al.*, 2017). Referring to Mayer's (1997) multiple representation principle of multimedia learning theory, Jenlink (2019) states:

“It is better to present an explanation in words and pictures than solely in words. This

represents the notion that having video is more beneficial than not having it or, more explicitly, that using two modes of representation rather, than one establishes improved understanding and memory retention. He adds, when giving a multimedia explanation, present corresponding words and pictures contiguously rather than separately. This simultaneous presentation creates increased student understanding by stimulating mental structures established by the verbal and visual cognitive bases” (Jenlink, p. 12).

Thus, libraries play vital role in supporting the teaching-learning process through provision of online catalogues, courses, and information resources that aims at contributing to high quality onsite and Open Distance Electronic-Learning (ODEL) by educational institutions (Netwong, 2019). Anyim (2018) postulates that through the use of multimedia technology, libraries create platforms where academicians, researchers, students, and staff can directly access online courses, and resources. Similarly, (Conrads *et al.*, 2017) contends that application of multimedia in library services work towards improving academic institution's ability to collaborate with sister institutions by sharing knowledge, information resources, and research. Multimedia technology in library use have ability to create communities within campuses and surrounding areas where libraries hold outreach programmes to communities (Boyle, 2018). In addition to that, (Netwong, 2019) postulates this is because libraries can write programmes that market its activities to prospective patrons that live far from library's physical space. As the library market itself, the community of patrons continue to grow (Hill, 2018; Kiani *et al.*, 2018).

2.8 Advantages of Using Multimedia Resources in Information Provision

Learning through multimedia provide opportunity to library instructors for immediate assessment and instant feedback to learners (Guan *et al.*, 2018). Engaging students in the

production of multimedia contents provide opportunity for training, learning, and hands-on experience (Larose-Kuzenko, 2021). Larose-Kuzenko, (2021) observes that engaging students in the production of learning content in the form of assignments improves students' understanding and promote effective learning. Lindner *et al.*, (2021) opines that use of audio, and audiovisual multimedia learning materials using music, graphics, animations, still images foster learning, memory, and recall.

Multimedia helps to improve student's learning abilities and foster long term memory, (Lindner *et al.*, 2021). Engaging students through face to face and multimedia improves participation of learners (Komodromos, 2020). Enhanced learning through multimedia resources increases students' perception of subject concepts and motivation to learning (Indah Septiani *et al.*, 2020; Zhu *et al.*, 2021). Use of multimedia promote higher level thinking that helps students to discover their talents, hidden interests, and develop a career path (Tan, 2019). With higher level thinking patrons and librarians exercise cleverness to analyze, synthesize, and evaluate information (Tan, 2019; Ahmad Basri, 2021).

2.9 Challenges in Using Multimedia Resources

It is quite expensive to acquire electronic gadgets and multimedia resources, in addition to establishing multimedia studio where librarians, faculty, and students can produce quality multimedia contents for research and instructional purposes (Enakrire & Ocholla, 2017; Komolafe *et al.*, 2019). Furthermore, creation of multimedia content is knowledge intensive besides, using multimedia medium requires digital literacy skills (Anyim, 2018). What this means says Komolafe *et al.*, (2019), is additional cost for training librarians to update knowledge and acquire skills for the 21st century librarian.

The quality of production of videos, still images, and animations depends on the quality of equipment and specialized knowledge and skills used in production (Ploetzner *et al.*, 2020). According to Komolafe *et al.*, (2019), students' production may be of poor quality since many uses smart phones with low camera resolution and poor sound systems. Multimedia storage tools such as films, DVDS, and CDs are difficult to manage and store due to their fragile nature (Sahoo *et al.*, 2018) when frequently used which leads to wear, breakage, and loss of digital contents Komolafe *et al.*, (2019). Multimedia contents have large volumes that consume much bandwidth to upload or navigate on the internet (Karaagac *et al.*, 2019; Nauman *et al.*, 2020).

2.10 Approaches to Improve Use of Multimedia Resources in the Library

Institutions conduct surveys to improve quality of services and delivery and libraries are none exceptions (Vovk & Levchuk, 2021). Surveys enables institutions to evaluate its scope and capacity including services, challenges, insights to new ideas, and approaches directed towards improving services and quality of delivery (Basu, 2020; Gutzman *et al.*, 2018). Libraries can conduct surveys to analyze its capability in use of ICT equipment; focusing on the use of multimedia resources to assess gaps, and obtain new insights to improve use of multimedia (Bertazzoli, 2020). Libraries rely on adequate power supply to run systems and machines to facilitate library service (Anyim, 2018). Libraries need focus on improving professionalism in all dimensions of service delivery, through training and skilling of librarians in digital skills, data literacy, and 21st century skills suitable for the market place (Enyi & Okoh, 2020; Makeeva *et al.*, 2019).

Buckley (2021) states government support to libraries through subsidizing cost on ICT equipment provide financial support to facilitate activities to improve use of multimedia resources

and improve standards of services libraries offer. According to Hanief and Jefriana (2018), information technology is crucial for development and bears great weight in service delivery. Libraries require information and communications technology infrastructures such as internet, projectors, and computers for automation and rendering services, projectors, etc. to meet needs of information workers and users (Enyi & Okoh, 2020). In addition to that, willingness and support from management and other funding agencies addresses struggles, budgetary challenges, and delays to implementation (Buckley, 2021). Further, Ryan (2020) argues, with adequate support and funding libraries can acquire multimedia resources, ICT infrastructures including internet, and train staff to run the library and meet needs of patrons. These findings align with (Anyim, 2018) which states, adequate funding encourages integration of ICT and multimedia usage into educational curriculum that aim at preparing staff and students to meet market place demands in the current century.

2.11 Conceptual Framework

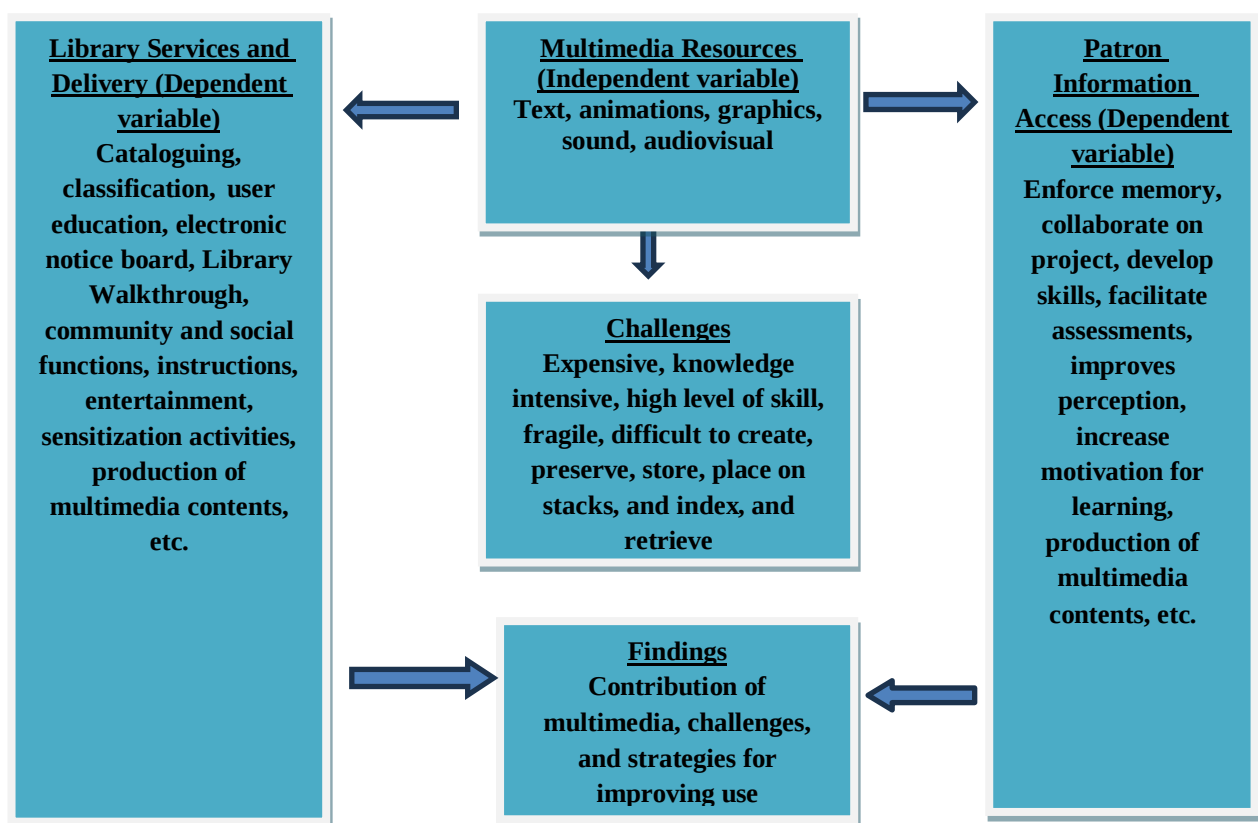
A conceptual framework is a logical tool researcher in various disciplines use to depict a complete understanding of an occurrence (Morgan, 2021). Researchers apply conceptual frameworks to illustrate visual details and relationships amongst important ideas (concepts) and variables that are the focus of the study (Swaen, 2021).

Variables in this study are library services and information provision as dependent variables, multimedia resources as independent variable. The diagram presents how different variables interact with each other. Multimedia resources influence service delivery by librarians and patrons interface with these resources to acquire relevant information. Both librarians and patrons experience challenges: librarians find difficulty related to creating, application, and storage

of multimedia resources. Patrons experience problems related to access and use of multimedia resources.

The researcher intends to identify different multimedia resources used in African Bible University library and understand the extent of use. The researcher was interested in identifying challenges librarians and patrons face in using multimedia resources. The researcher intended to identify gaps that existed and how the university can address these gaps (solutions).

Figure 1: Conceptual Framework Illustrating Librarians and Patrons interacting with Multimedia, Challenges, and Gaps



Source: Kicaobanga, (May 2024)

2.12 Conclusion

The topic of study is 'examining the use of multimedia resources for information provision at African Bible University.' Through this chapter, the researcher examines published theoretical and research works in the field of study applicable to addressing current research objectives, questions, and statement of the problem. The section provides the structure of the contents, arguments, theoretical underpinning, and conceptual framework; a diagrammatic presentation of the study.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

The topic under study was 'Examining the use of multimedia resources for information provision at the African Bible University.' Chapter three presents the area of study, [Geographical scope], research design, population of the study, sampling method and strategies, sample size, data collection methods, instruments of data collection, data analysis and presentation, data quality control, ethical issues, limitations and delimitations.

3.2 Area of Study

The researcher conducted the study in ABU. ABU has a student population of 93 students and about 30 academic and administrative staff. Patrons in each category uses multimedia resources to access information from the library at a given time. This is why the researcher investigated the contribution of multimedia resources in aiding information provision in ABU. The researcher conducted the study between January to October 2024.

3.3 Research Design

"A research design is the plan, structure, strategy of investigation conceived to answer the research question and test the hypothesis" (Bets, 2021). The researcher conducted the study in ABU. The study adapted a cross-sectional descriptive design, 'a type of observational study design that involves looking at data from a population at one specific point in time' (Wang & Cheng, 2020). Cross-sectional descriptive study design allows for observation of participants, places lesser demand on labour during data collection; especially when using survey, records, and questionnaire techniques (Deakin University, 2021; Thomas, 2020).

The researcher's intention was to find the prevalence and challenges of use of multimedia

instructional resources for information provision in the library by examining a cross section of the study population. The study design provided a general insight about the study.

The researcher used patrons composing students and librarians for testing the variables. All study participants received the same questions. This is because these categories of study population provide, create, disseminate, or consume information.

3.4 Population of the Study

The target population refers to a group of people or objects which forms the subject of a study (Ngo Ndyama, 2020). The researcher used the student population and librarians because these categories of study population provide, create, disseminate, or consume information.

3.5. Research Approach: Sampling Methods and Strategies

The researcher used mixed method study combining elements of qualitative and quantitative approaches. Questionnaires and interviews were used for data collection. The researcher sampled respondents for the study. Sampling is the method whereby a researcher chooses subset of study participants from a larger population (Mishra, 2021).

3.6 Sample Size

The entire student's population from first to fourth year is 90. There were 62 male students and 28 female students (Registrar's Record, 2022). Six librarians; four males and two females participated in the study. Using the Fish bowl draw random sampling, the researcher recruited respondents to obtain required sample. 74 students were selected after calculating parameters of Population size (N) of 90, with a Confidence Level (Z) 1.96 at margin error of 0.005 and a Population proportion of 0.5. All 6 librarians were interviewed to ensure 100% representation and higher reliability because statistical formulas designed for large studies becomes impractical with

a small population size. This means the researcher had a total sample size of 80 respondents for the study; 74 were students and 6 librarians. Participants picked for the study represented the total sampling population. Inferences drawn from the samples was generalised to the total sampling population.

Fish Bowl Draw Technique: This is a random sampling or probability sampling where each element in the population has an equal and independent chance of selection in the sample. Equal implies that the probability of selection of each element in the population is the same; that is, the choice of an element in the sample is not influenced by other considerations such as personal preference (Kumar, 2011). This method is preferred because of a small study population.

The researcher used fish bowl draw random sampling technique to determine the study participants. The researcher listed names of all the 90 students on a paper numbering 1, 2, 3, ... to 90. The researcher arranged 90 pieces of paper, taking each piece of paper, the researcher wrote the name and number of each student. All the 90 pieces of paper, each containing a student name were folded and put in a bowl. Without looking, the researcher randomly picked names from the bowl one by one until the 74th slip of paper. The 74th slip of paper equalled the required sample size for the study.

3.7 Data Collection Methods

The Oxford Learner's Dictionary (2021) defines data as “facts or information, especially when examined and used to find out things or to make decisions.” According to Abawi (2021), data collection methods refer to tools like questionnaires, measuring, interviews, documents, observation, and focus group discussions which a researcher uses to collect data from

subjects/objects of study in the field.

3.7.1 Semi-Structured Questionnaires

According to McCombes (2019), a questionnaire is a compilation of questions designed by a researcher concerning objects, and distributed to study participants to provide responses in writing. The purpose of using this method is to collect needed information from study participants within allocated time frame.

The researcher designed closed questions providing answers. In addition to that, the researcher designed open ended questions requiring participant's responses. The researcher distributed both sets of questionnaires to study subjects. The researcher carried out a data collection exercise within a period of two weeks from all study participants.

3.7.2 Structured Interviews

A structured interview is an evaluation technique designed to measure the opinion of study participants related to the subject under investigation through orderly inquiry (US Office of Personnel Management, 2021). The researcher preferred this method because it provides equal opportunity to study participants to offer exact and reliable information the researcher will assess. The researcher used this method to collect data from patrons. Data collection exercise took two weeks. Time allocated for each interview was 10 minutes.

3.8 Data Analysis and Presentation

This is organized arrangement to process a mass of collected raw data for analysis (Sangseok & Junyong, 2017). The researcher presented data using text, tables, and graphs. This is because text, tables, and graphs facilitate analysis and interpretation of data provided by study participants. The researcher grouped data collected from study participants under major themes as

they appeared basing on responses from study participants that informed the study and conclusion.

The researcher followed steps identified by McLeod (2024):

- i. Identified the main themes.
- ii. Assigned codes to the main themes.
- iii. Classified responses under the main themes.
- iv. Integrated themes and responses into the text of the report.

Organizing responses from study participants enabled the researcher to arrange data in themes for careful study of collected data and related them to questions in the study instrument.

The research followed a structured process of preparing data and cleaning it for accuracy and used percentages for statistical analysis of data collected. The researcher established that data collected answered questions asked in the study instruments and research questions.

3.9 Data Quality Control

This refers to the use of methods that establish if data meet overall quality goals and standards for individual values (US Department of Interior, 2021). The researcher applied quality control measures to detect and repair errors to ensure data was valid and reliable.

3.9.1 Triangulation

This is the use of two or more methods for data collection (Chako, 2017). According to Nobel & Heale (2019), triangulation increases the credibility and validity of research findings through combining theories, methods or observers in a research study to eliminate fundamental biases arising from the use of a single method. The researcher used semi-structured questionnaires and structured interviews. The purpose of using these methods was to obtain consistent findings through data collection that would ensure validity and reliability. Obtaining data from the

librarians helped to establish reliability and credibility of the results.

3.10 Ethical Issues

Plagiarism: The researcher avoided plagiarism by acknowledging and appreciating authors/publishers whose works were used in this project.

Respect: The researcher treated all study subjects with respect.

Informed Consent: the researcher explained the study and its purpose to study subjects to make them aware of their rights. Therefore, the researcher sought consent of patrons.

Confidentiality and Anonymity: The researcher prepared informed consent draft/form explaining the following:

- i. Purpose of research.
- ii. Anonymity: the researcher shared information provided with permission of subject without disclosing subject's identity.
- iii. Confidential: No information provided was shared without permission of the subject.
- iv. Voluntary informed consent. The researcher requested patrons to append their signatures on the form.

Promise Good Conduct

The researcher promised to behave well and did not interfere in personal matters of respondents.

Right to Withdraw

Participants were free to withdraw their consent without coercion to remain in the study.

Seek Permission from Gate Keeper of ABU

Researcher sought permission by writing to the Vice Chancellor explaining purpose of

research, research participants, and its benefits to the university, and his permission to conduct study in the premise of ABU, and involve students and library staff as study subject. The researcher assured him of confidentiality, of information and to share research findings with ABU Administration and Academic committee.

3.11 Limitation of the Study

The researcher anticipated the following challenges while collecting data.

Difficulty Navigating Quality Literature

Some literatures were too old and obsolete. There was vast current literature however, it was challenging to identify and locate quality information to support the study.

Busy Respondents

The target group for this study composed of students and librarians who were always busy. The researcher anticipated refusal to answer questions, or delay to return study questionnaires.

Limited or No Data Access

The researcher reached some study participants through online survey. A few respondents had challenges with limited bandwidth that would affect timely feedback. Therefore, the researcher provided data to enable timely feedback.

Fear to Provide Information

Some patrons were afraid to share information thinking it was for witch-hunting.

Bureaucracy

The researcher sought permission from ABU administration representative to obtain rights to work with students and staffs as study participants.

3.12 Delimitations of the Study

Difficulty Navigating Quality Literature

The researcher plans to use minutes of previous meetings, documents, different websites, and referencing machines to search for valid and reliable information/literature to obtain quality information/literature.

Busy Respondents

The researcher created soft copies of questionnaire and shared with respondents through emails.

Limited or No Data Access

The researcher supported study participants by providing each with data bandwidth of up to 300 MBs.

Fear to Provide Information

The researcher is known in the institution; therefore, she met respondents individually, explaining the purpose of the research. Basically, the research served as a partial requirement for the fulfillment of award of Master of Science in Library and Information Studies and not witch haunting.

Bureaucracy

The researcher followed formal process to secure permission from gate keepers of ABU. The researcher presented introductory letter from UCU as proof.

3.13 Conclusion

The research topic was 'examining the use of multimedia resources for information provision at the African Bible University.' The purpose of this study was to examine the extent and

effective use and propose strategies for improving use of multimedia instructional resources in African Bible University library. This chapter presented research design including variables in the study, methods of data collections, described participants, and tools for data collection. The chapter also described statistical data analysis procedure the researcher used to interpret findings and quality control measures to ensure validity and reliability of data.

CHAPTER FOUR: DATA PRESENTATION AND DISCUSSIONS OF FINDINGS

4.1 Introduction

This chapter explains how data collected was analyzed and presented. Data analysis focuses on 'Examining the use of multimedia resources for information provision at the African Bible University.'

4.2 Presentation of Results

Data presentation was in accordance with the objectives of the study. The objectives of the study included: multimedia resources ABU library use for information provision, the extent to which multimedia instruction resources enhance information provision in ABU, challenges students and faculty of ABU experience using multimedia instructional resources in the library, and strategies ABU library can adopt to improve the use of multimedia instructional resources for information provision.

4.2.1 Statistics of Respondents

Table 1: Statistics of Respondents

Respondents	Frequency	Percentage
Students	74	92.5
Librarians	6	7.5
Total	80	100

Source: Kicaobanga, Field Data, May 2024

There were 74 students who filled the questionnaire (92.5%) and 6 librarians (7.5) who were interviewed. This is because student population is higher than library staff population. The

entire student population from first to fourth year was 90 and 6 librarians (Registrar's Record, 2022). 74 students were selected after calculating parameters of Population size (N) of 90, with a Confidence Level (Z) 1.96 at margin error of 0.005 and a Population proportion of 0.5. All 6 librarians were interviewed to ensure 100% representation and higher reliability because statistical formulas designed for large studies becomes impractical with a small population size. In the end, the researcher had a total sample size of 80 respondents for the study; 74 were students and 6 librarians. Fish Bowl Draw random probability sampling technique was used to determine the study sample because of the small study population.

4.2.2 Respondents by Gender

Table 2: Showing Distribution of Respondents by Gender

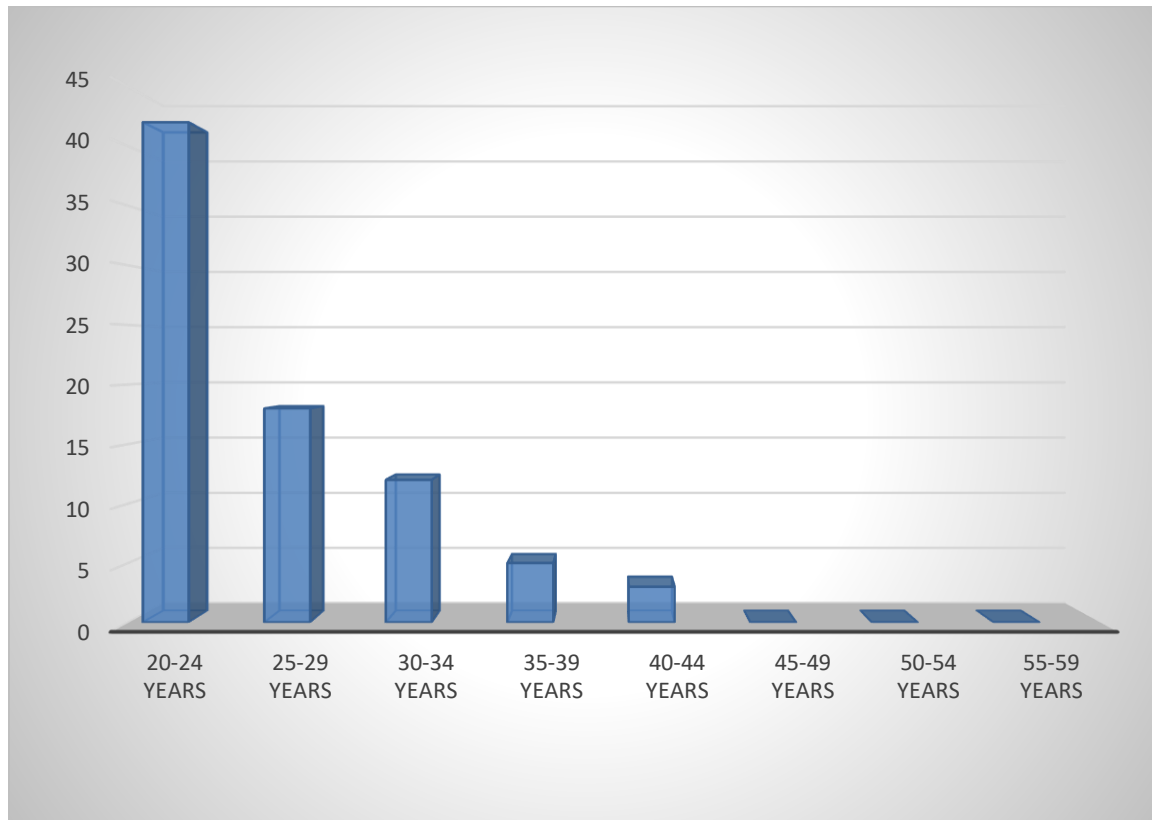
Sex	Frequency	Percentage
Male	52	65
female	28	35
Total	80	100

Source: Kicaobanga, Field Data, October 2024

Male respondents were more than female respondents. First, there were more male students selected for the study (48) because the population of male students is higher than the female students. Although the researcher used a random sampling technique, chances were that the researcher would pick more male students. The entire student's population from first to fourth year is 90. There were 62 male students and 28 female students (Registrar's Record, 2022). Also, six librarians; four males and two females participated in the study. These numbers combined brings the total sample size to 80 participants for the study.

4.2.3 Age Distribution of Respondents

Figure 2: Bar Graph Showing Age Distribution of Respondents

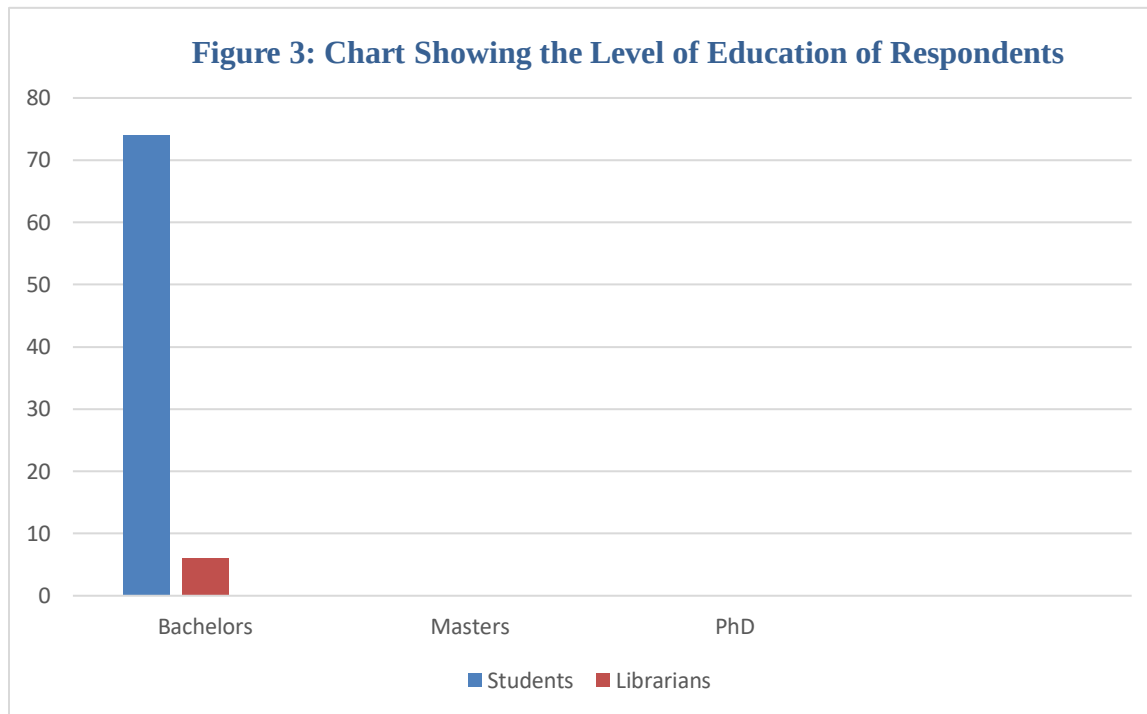


Source: Kicaobanga, Field Data, October 2024

The total number of respondents for this study were 80. 42 of these were between the ages of 20-24, 18 were in the age range between 25-29 years, 12 were between 30-34 years, five were within 35-39 years and three were between the age range of 40-44 years. None of the respondents were 50 years and above. The researcher used a scale to capture the age range of respondents from 18 to 59 years because the study participants included librarians employed by the institution and the employment age in Uganda is up to 59 and then retire at age 60 years. However, some people also return for undergraduate, masters, and PhD studies when they are beyond 50 years. Interestingly, from the graph, the age ranges between 20 to 29 years had higher statistics because

most people attain their undergraduate studies between the ages of 20 to 29 years as well as join formal or informal employment. Also, this age range represents majority of students in African Bible University.

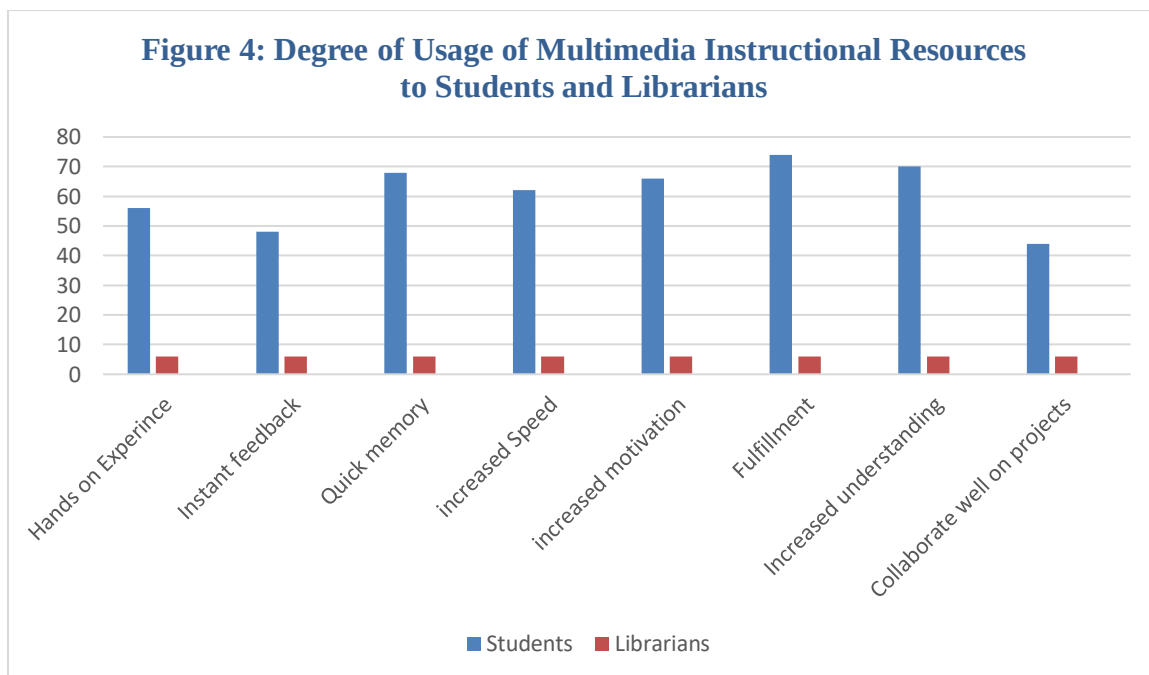
4.2.4 Level of Education of Respondents



Source: Kicaobanga, Field Data, October 2024

All 74 students were pursuing their bachelor's degrees while librarians have attained bachelor's degrees by the time of data collection. The study had no participant with Masters or PhD qualifications. This is because majority of the study participants are undergraduate students.

4.2.5 Degree of Usage of Multimedia Instructional Resources in ABU



Source: Kicaobanga, Field Data, October 2024

56 Students (76%) relate that using multimedia resources provides them with hands on experience, 48 students (60%) reports that they receive immediate assessment and feedback from librarians and professors, 68 students (85%) stated that they recall information faster upon using multimedia resources, 62 students (78) accesses information faster, 66 students (83%) have experienced increased motivation, 70 (95%) students report they gain more understanding when using videos in my studies, while 44 (59%) students stated they collaborate well on study projects with classmates, and all the students 74 (100) report they have fulfillment using multimedia resources. All six librarians agreed to each of these contributions of multimedia resources in their work and research when offering library services to patrons. Responses from respondents were grouped under one theme.

Discussion of Results

Multimedia instructional resources had significant impact on the lives of patrons such as helping patrons obtain information faster, giving hands on experience, receiving immediate assessment and feedback, quicker recall of information, gain more understanding, collaborating well on study projects with classmates, increased motivation and all the students said using multimedia resources gives them fulfillment.

These findings means that multimedia resources are in high use and have made great impact on the lives of users to facilitate information access for the teaching-learning process and research. Learning through multimedia provide opportunity for instruction and active learning and encourages students' engagement, it improves social skills and enable students to discover their passion and hidden talent. Furthermore, professors and librarians are able to assist in the teaching learning process, giving immediate assessment and providing instant feedback to learners that facilitate confidence building through affirmation. Professors and librarians engaging students in the production of multimedia contents provide opportunity for training, learning, and hands-on experience which improves students' understanding and promote effective learning. The use of audio, and audiovisual multimedia learning materials like music, graphics, animations, still images foster learning, memory and recall because moving images enables students to focus and pay attention that enforces registration and retention of information in the brain. Multimedia provides avenue for both face to face and virtual engagement that improves students' perception of subject concepts and motivation to learning and students learn to analyze, synthesize, and apply information.

These findings are in agreement with previous studies that using multimedia resources for

educational instructional purposes provide opportunities for librarians, lectures and professors to provide immediate assessment and instant feedback to learners (Guan *et al.*, 2018). Multimedia allows training and learning (Larose-Kuzenko, 2021), foster memory and recall (Lindner *et al.*, 2021), improves social skills (Komodromos, 2020), increases students' perception of subject concepts and motivation to learning (Indah Septiani *et al.*, 2020; Zhu *et al.*, 2021), promote higher level thinking that helps students to discover their talents, hidden interests, and develop a career path (Tan, 2019). Thus, librarians and professors need to present explanations in words and pictures than solely in words such that knowledge and information shared to learners can be more beneficial than not having. As Jenlink (2012) notes, simultaneous presentation creates increased student understanding by stimulating mental structures established by the verbal and visual cognitive bases.

The availability of catalogued information on each multimedia instructional resources simplifies the process thus, making it easy for librarians to provide multimedia instructional information and learners to access information. The library intends to have majority of students use multimedia informational resources during lesson delivery, individual study time, facilitating student engagements like practical demonstrations, collaboration on projects and digital learning to facilitate onsite, distance, and e-learning (Conrads *et al.*, 2017). Thus, libraries play vital role in supporting the teaching-learning process through provision of online catalogues, courses, and information resources that aims at contributing to high quality onsite and Open Distance Electronic-Learning (ODEL) by educational institutions (Netwong, 2019).

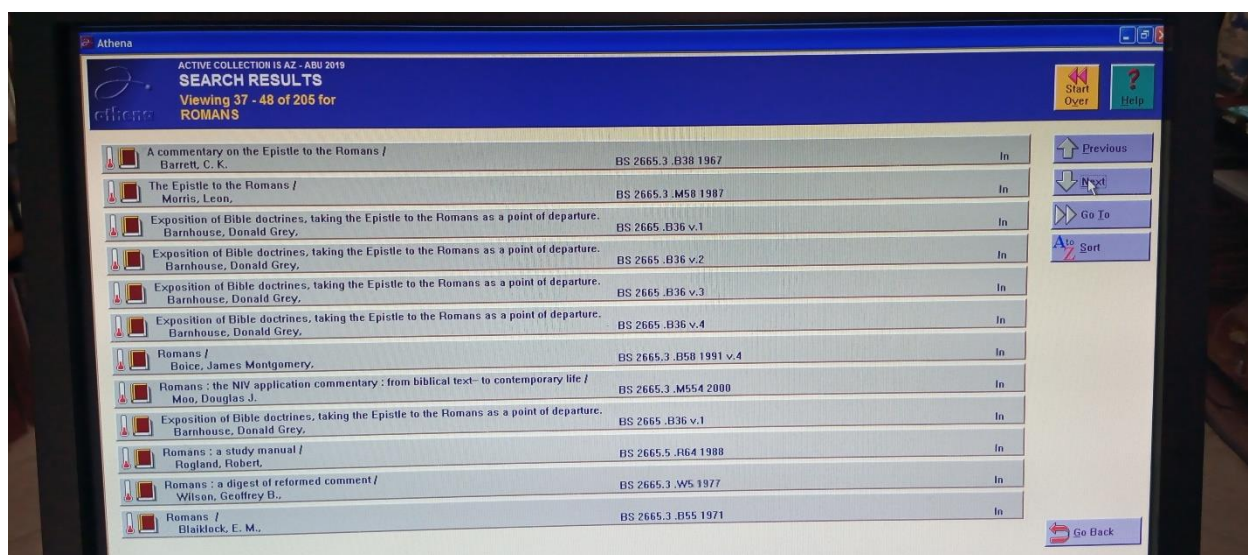
**4.2.6 Challenges Students and Librarians Experience Using Multimedia Resources
for Information Provision in African Bible University Library.**

Table 3: Challenges Students and Librarians Experience Using Multimedia Resources for Information Provision in African Bible University Library		
Challenges	Students	Librarians
Catalogue computer has more text multimedia resources, few audiovisual and other multimedia resources	74	6
Catalogue computer is very slow and sometimes breaks down hindering search process	70	6
Only one available catalogue computer thus, students queue to use catalogue computer	52	6
Unavailable internet and slow internet speed that makes it difficult to access website materials	34	4
Lacking understanding of the features on catalogue computer, difficulty logging in, and accessing information on catalogue computer	54	0
Difficulty to locate a particular resource present on catalogue computer yet physically unavailable in the library	23	0

Source: Kicaobanga, Field Data, October 2024

4.2.6.1 The Library has More Text Resources, Few Audiovisual and Other Multimedia Resources

Figure 5: Sample of Search Results



Source: Kicaobanga, Field Data, October 2024

The Library Catalogue computer has more text multimedia resources, few audiovisual and other multimedia resources. This concern was noted by both students (74) and all six librarians. That meant, other patrons have to wait to access the same information causing delay in information access and retrieval. Further, there were no records of other multimedia resources in the catalogue entry except text materials. Other forms of multimedia resources available in the library were in a separate section of the library. Because most students were unaware, they missed the opportunity to use other available multimedia resources.

4.2.6.2 Slowness and Breakdown of Catalogue computer

Patrons reported that the catalogue computer was very slow and sometime broke down hindering the search process (70). All six librarians concur with students on this issue. Slowness

of the catalogue computer occurred because the catalogue computer was too old and outdated. Again, like any other machine, computers break down due to over usage, lack of care, and old age. The slowness and break down potentially caused hindrance and delay in retrieving and accessing information that interferes with uptake of information.

4.2.6.3 Delay in the Retrieval Process Due to Only One Catalogue Computer

Patrons (52) and all six librarians noted that there was only one available catalogue computer for information retrieval and access thus, students queue to use the catalogue computer. Having a single available catalogue computer to serve about 100 people consumes time and causes delay. This challenge arises due to inadequate funding to the library to finance activities.

4.2.6.4 Unavailable Internet and Slow Internet Speed

Patrons (34 students) and (4 librarians) noted that unavailable internet and slow internet speed made it difficult to access web materials. This challenge caused delay in information access and retrieval.

4.2.6.5 Difficulty Logging in and Accessing Information on Catalogue Computer

Some students (54) indicated that they do not understand features on the catalogue computer, experience difficulty logging in and accessing information on the catalogue computer. Availability of this challenge meant patrons could not obtain information required for their research. This could have been due to wrong log into the computer. The setting on the catalogue computer enables only one library staff to log in and the rest of the users can freely access and retrieve information. Students who try to enter through staff login lack information on student's login credentials. Most probably, this challenge arises if students do not take library user education course where patrons learn features on catalogue computer and how to use it.

4.2.6.6 Difficulty Locating a Particular Resource Present on the Catalogue Computer

Three (23) students stated that it was difficult to locate a particular resource present on catalogue computer yet it is physically unavailable. The difficulty could be that the resource in question was in use by another student or although the resource was appearing in the catalogue, it could be lost, weeded out and marc records remain unedited to remove the entry from library database.

Discussion of Results

Students and librarians reported that catalogue computer has more text multimedia resources, few audiovisual and other multimedia resources, is slow and sometimes breaks down hindering search process, only one available catalogue computer thus, students queue to use catalogue computer, unavailable internet and slow internet speed that makes it difficult to access website materials, lacking understanding of the features on catalogue computer, difficulty logging in, and accessing information on catalogue computer, difficulty to locate a particular resource present on catalogue computer yet physically unavailable in the library. These challenges arise due to inadequate funding to the library to finance its activities, unskilled personnel, power outages without standby generators, inability to service library computers in time, and students lack of ICT skills amongst students to operate library computers and multimedia information resources. This means that the teaching-learning process and research experience interferences and disruptions that affect completion of assignments in time and being untimely on deadlines and completing the syllabus, and discouragement.

These findings align to existing literature that highlights challenges multimedia users experience. It is quite expensive to acquire electronic gadgets and multimedia resources,

establishing multimedia studio where librarians, faculty, and students can produce quality multimedia contents for research and instructional purposes (Enakrire & Ocholla, 2017; Komolafe *et al.*, 2019). Creating and using multimedia content is knowledge intensive requiring digital literacy skills (Anyim, 2018) and multimedia contents have large volumes that consume much bandwidth to upload or navigate on the internet (Karaagac *et al.*, 2019; Nauman *et al.*, 2020).

4.2.7 Approaches to Ensure Improved Use of Multimedia Instructional Resources in African Bible University Library

Table 4: Approaches for Improving the Use of Multimedia Instructional Resources in African Bible University		
Strategies for Improving Use	Students	Librarians
Repair catalogue computer and improve its speed by improvising quick access tools	67	6
Avail more computers in the library and enhance internet connectivity	70	6
Teaching library skills to students, conduct trainings in the use of multimedia, and encourage peer to peer learning	56	6
Have separate section in the library that concentrates on multimedia, replace lost multimedia resources, engage students to work in multimedia library, and use multimedia resources	46	4
Improve the technology of library management system	53	5

Source: Kicaobanga, Field Data, October 2024

4.2.7.1 Repair Catalogue Computer and Improve its Speed

67 students and all six librarians propose repairing catalogue computer and improving its speed by improvising quick access tools will make the computer faster and better suited to serve

patrons. It will eliminate delay and enhance quick access and retrieval of multimedia informational material.

4.2.7.2 Avail more Computers in the Library and Enhance Internet Connectivity

Both students (70) and all six librarians agree that availing more computers in the library and quick internet speed would make it easier for patrons to access multimedia resources whose function is enhanced by internet connectivity thereby eliminating obstacles to information access and retrieval.

4.2.7.3 Teaching Library Skills to Students, Conducting Trainings in the Use of Multimedia, and Encouraging Peer to Peer Learning

56 students and all six librarians agree that Library user education equips users with knowledge and skills to access and evaluate various library information material obtaining the best from them. Library user education and peer to peer learning motivate patrons to build interest in library resources and services and eliminates naivety concerning activities of the library, resources, and services that the library provides to patrons.

4.2.7.4. Allocate Space for Multimedia Resources and a Librarian to Engage Students to Use Multimedia Resources

46 students and four librarians suggested having a separate section in the library that concentrates on multimedia resources, replacing lost multimedia resources, engaging students to work in multimedia library motivates students to use multimedia resources because of exposure they have when working in the multimedia studio/library.

4.2.7.5 Improve the Technology of Library Management System

53 students and five librarians agree the current library management system lacks

connectivity to the internet implying patrons cannot directly search for multimedia resources beyond library's physical space. With improved technology and access to the internet, patrons can access and retrieve desired multimedia resources. Information technology is crucial for development and bears great weight in service delivery.

Discussion of Results

Students and librarians suggest that strategies to improve provision of multimedia instructional resources could improve through repairing catalogue computer and improving its speed by improvising quick access tools, availing more computers in the library and enhancing internet connectivity, teaching library skills to students and conduct trainings in the use of multimedia, encouraging peer to peer learning, having a separate section in the library that concentrates on multimedia, replacing lost multimedia resources, engaging students to work in multimedia library and using multimedia resources, and improving the technology of library management system. This means that if ABU works towards implementing these suggestions, multimedia use for information provision would have more impact on learners through rendering quality service. These findings align with existing literature on improving uptake of multimedia resources by users in education. Adequate power supply to run systems and machines to facilitate library service focusing on improving professionalism in all dimensions of service delivery, through training and skilling of librarians in digital skills, data literacy, and 21st century skills will create a suitable training environment in the library to produce learners fit for the market place to meet societal demands. Libraries require information and communications technology infrastructures such as internet, projectors, and computers for automation and rendering services, projectors, etc., to meet the needs of information workers and users (Enyi & Okoh, 2020; Hanief

& Jefriana (2018). Government support and increased funding enable libraries to acquire multimedia resources, ICT infrastructures including internet, and train staff to run the library and meet needs of patrons hence, encouraging integration of ICT and multimedia usage into educational curriculum that aim at preparing staff and students to meet market place demands in the current century (Anyim, 2018; Ryan, 2020).

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents information on summary of findings, the conclusions and the recommendations of the study.

5.2 Summary of Finding

This chapter contains information from findings of the study. The study was intended to examine the use of multimedia resources for information provision at the African Bible University. African Bible University library uses text, graphics, audiovisuals, audio with and without words for information provision. The researcher presents this summary in accordance with the research objectives similar to the way information was presented in chapter four.

5.2.1 Degree of Use of Multimedia Instructional Resources for Information

Provision in African Bible University Library

Both librarians and students agree that using multimedia resources provides them with hands-on experience, they receive immediate assessment and feedback from librarians and professors, they are able to recall information faster upon using multimedia resources, access information faster, experience increased motivation, gain more understanding, collaborating well on study projects with classmates, increased motivation and all the students said using multimedia resources gives them fulfillment. Multimedia resources are a great way to provide information to learners and library patrons of all categories and have a great impact on enhancing the teaching-learning process and research.

5.2.2 Challenges Students and Librarians Experience While Using Multimedia Resources for Information Provision in African Bible University Library

Both library staff and students admitted that there were challenges they faced while using multimedia instructional resources in ABU library. These challenges include: Catalogue computer has more text multimedia resources, few audiovisual and other multimedia resources, catalogue computer is very slow and sometimes breaks down hindering search process, there is only one available catalogue computer thus, students queue to use catalogue computer, unavailable internet and slow internet speed that makes it difficult to access website materials, lack of understanding of the features on catalogue computer, difficulty logging in, and accessing information on catalogue computer, and Difficulty to locate a particular resource present on catalogue computer yet physically unavailable in the library.

5.2.3 Approaches African Bible University Can Apply to Improve Use of Multimedia Instructional Resources

Both librarians and students suggested that ABU Library could: repair the catalogue computer and improve its speed by improvising quick access tools, avail more computers in the library and enhance internet connectivity, teach library skills to students, conduct trainings in the use of multimedia, and encourage peer to peer learning, have separate section in the library that concentrates on multimedia, replace lost multimedia resources, engage students to work in multimedia library, and use multimedia resources, and improve the technology of library management system.

5.3 Conclusions

The conclusions of this section were presented according to the objectives of the study as similar to the way it was presented and discussed in chapter four.

5.3.1 Degree of Use of Multimedia Instructional Resources for Information Provision in African Bible University Library

According to data gathered from patrons, the extent of use of multimedia resources in African Bible University is high. Multimedia instructional resources had significant impact on the lives of patrons such as helping patrons obtain information faster, giving hands on experience, receiving immediate assessment and feedback, quicker recall of information, they gain more understanding, collaborate well on study projects with classmates and all the students and using multimedia resources gives them fulfillment, increased motivation, and fulfilment.

5.3.2 Challenges Students and Librarians Experience Using Multimedia Resources for Information Provision in African Bible University Library

Both library staff and students admitted that there were challenges they faced while using multimedia instructional resources in ABU library. These challenges include: Catalogue computer has more text multimedia resources, few audiovisual and other multimedia resources, catalogue computer is very slow and sometimes breaks down hindering search process, there is only one available catalogue computer thus, students queue to use catalogue computer, unavailable internet and slow internet speed that makes it difficult to access website materials, lack of understanding of the features on catalogue computer, difficulty logging in, and accessing information on catalogue computer, and Difficulty to locate a particular resource present on catalogue computer yet physically unavailable in the library. These challenges can potentially hamper use of

multimedia resources in the library as well as hinder uptake of other library services.

5.3.3 Approaches to Ensure Improved Use of Multimedia Instructional Resources in African Bible University Library

Both librarians and students suggested that ABU Library could: repair the catalogue computer and improve its speed by improvising quick access tools, avail more computers in the library and enhance internet connectivity, teach library skills to students, conduct trainings in the use of multimedia, and encourage peer to peer learning, have separate section in the library that concentrates on multimedia, replace lost multimedia resources, engage students to work in multimedia library, and use multimedia resources, and improve the technology of library management system. These strategies would enhance optimum utilization of multimedia resources in the library.

5.4 Recommendations

Based on the study findings and conclusions drawn from the study, the researcher came up with the following recommendations.

5.4.1 Improve the Technology of Library Management System

The available library management system cannot meet the current demands of library patrons. Patrons are more oriented to digital systems and so ABU library need to migrated to digital realms in order to serve patrons better. Patrons can view, order, book, rent resources and as well access and retrieve information online.

5.4.2 Grant more Time for Library User Education

To address the problem of lack of understanding of the features on catalogue computer, difficulty logging in and accessing information on catalogue computer, students need to

undertake library user education course. Library user education course provide training that equip students with knowledge and skills to access, evaluate, and utilize information. It arouses research interest and curiosity to explore available library services and resources. Students need acquaintance with multimedia resources to fully embrace using them to address information needs. The library can introduce a single password for logging into the catalogue computer that will make it easy for both students and librarians to log in and access information without obstacles.

5.4.3 Replace Catalogue Computer

To address the problem of slowness or breakdown of the catalogue computer hindering search process, repairing catalogue computer and improving its speed by improvising quick access tools or replacing it with a new one will fasten the search process. Libraries exist to facilitate the learning process by making information readily available, offering comfort with ease and giving patrons a sense of enjoyment and fulfilment.

5.4.4 Collaboration with Lecturers

Librarians collaborating with lecturers to interest students to use multimedia resources can boost uptake of multimedia resources by patrons. Scheduling classes in the library and using library multimedia resources to facilitate the class eases tension towards multimedia resources.

5.4.5 Displaying Multimedia Resources, Replacing Lost Multimedia Products, Improving Media, Information, and News Literacy

To tackle the challenge of difficulty to locate a particular resource present on catalogue computer yet physically unavailable in the library requires having a separate section in the library that concentrates on multimedia resources, replacing lost multimedia resources, engaging students

to work in multimedia library, and using multimedia resources to demystify unavailability of multimedia resources, drawing patron's attention to the resources, and encouraging use. Use of electronic boards to displaying multimedia resources creates awareness towards availability of resources and attract attention.

5.4.6 Recruit Skilled Staff

The researcher recommends ABU recruit more personnel skilled in library and information science and information technology to support students during search and use, and training them in multimedia and handle matters that require information technology.

5.4.7 Strong Internet Connectivity

Addressing unavailable internet or sometimes slow internet speed requires upgrading the network to strong internet connectivity with robust wireless network. This means more students and staff can log into a stable network to access web information and Online Public Access Catalogue.

5.4.8 Provide More Catalogue Computers to Patrons

Respondents noted that there is only one available catalogue computer thus, students queue to use catalogue. ABU Library can provide another catalogue computer to address this challenge so that patrons do not waste time queuing to use a single computer. Further, in case one computer breaks down, the alternate catalogue computers remain useful eliminating a situation where no one can search or retrieve information.

5.4.9 Provide More Computers in the Library

ABU library can have separate computers allocated to multimedia use where students without laptops easily access resources they need and can view, read and study while in the

library.

5.5 Areas of Further Research

- i. Multimedia communication: Impact on research, professionalism, and library services.
- ii. Uses and application of multimedia
- iii. Contribution of multimedia on student's performance
- iv. The role of multimedia in the teaching and learning process

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APPENDIX 1

CONSENT FORM

Title of the Study

Examining The Use of Multimedia Resources for Information Provision at African Bible
University

Principal Investigator

Kicaobanga Praisegrace Joy

Librarian

African Bible University

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Purpose of Study

You are being asked to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information. The purpose of this study is to examine the extent and effective use and propose strategies for improving use of multimedia instructional resources in African Bible University Library.

Benefits

- i. Learning through multimedia provide opportunity to library instructors for immediate assessment and instant feedback to learners.
- ii. Engaging students in the production of multimedia contents provide opportunity for

training, learning, and hands-on experience.

- iii. Engaging students in the production of learning content in the form of assignments improves students' understanding and promote effective learning.
- iv. The use of audio, and audiovisual multimedia learning materials using music, graphics, animations, still images foster learning, memory, and recall.
- v. Multimedia helps to improve student's learning abilities and foster long termmemory. Engaging students through face to face and multimedia improvesparticipation of learners.
- vi. Enhanced learning through multimedia resources increases students' perception of subject concepts and motivation to learning.
- vii. Use of multimedia promote higher level thinking that helps students to discover their talents, hidden interests, and develop a career path.
- viii. With higher level thinking patrons and librarians exercise cleverness to analyze, synthesize, and evaluate information.

Confidentiality

Your responses to this [survey] will be anonymous.

Please do not write any identifying information on your [survey]. OR for the purposes of this research study, your comments will not be anonymous. Every effort will be made by the researcher to preserve your confidentiality including the following:

- i. Assigning code names/numbers for participants that will be used on all research notes and documents.
- ii. Keeping notes, interview transcriptions, and any other identifying participant information in a locked file cabinet in the personal possession of the researcher.

- iii. Participant data will be kept confidential except in cases where the researcher is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse and suicide risk.

Contact Information

If you have questions at any time about this study, or you experience adverse effects as the result of participating in this study, you may contact the researcher whose contact information is provided on the first page.

Voluntary Participation

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

Consent

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

APPENDIX II

QUESTIONNAIRE GUIDE FOR STUDENTS

SECTION A: Respondent Information

For each of the following questions, please tick what applies to you.

Gender:

☐ Male

☐ Female

Age bracket

☐ 20-24

☐ 25-29

☐ 30-34

☐ 35-39

☐ 40-44

☐ 45-49

Highest level of education

☐ Bachelor's Degree

☐ Master's Degree

☐ PhD

Section B: Degree of Use of Multimedia Instructional Resources for Information Provision in African Bible University Library

How has using multimedia information resources in the library help in your studies and research? Tick all that apply.

- i. It has given me hands on experience
- ii. I receive immediate feedback
- iii. It has increased my speed for looking for the right information material
- iv. I am able to recall information faster
- v. It has increased my motivation to learning/research
- vi. It has given me fulfillment in my learning and conducting research
- vii. I gain more understanding when I use videos in my studies
- viii. I and my classmates we collaborate well on our study projects

Section C: Challenges Students and Librarians Experience Using Multimedia Resources for Information Provision in African Bible University Library

What challenges do you face when using multimedia resources for information searching?

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Section D: Approaches to Ensure Improved Use of Multimedia Instructional Resources in African Bible University Library

What can ABU do to improve use of multimedia resources in the library?

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APPENDIX III

INTERVIEW GUIDE FOR LIBRARIANS

SECTION A: Respondent Information

For each of the following questions, please tick what applies to you.

Gender:

- ☐ Male
- ☐ Female

Age bracket

- ☐ 20-24
- ☐ 25-29
- ☐ 30-34
- ☐ 35-39
- ☐ 40-44
- ☐ 45-49
- ☐ 50-54
- ☐ 55-59

Highest level of education

- ☐ Bachelor's Degree
- ☐ Master's Degree

☐ PhD

Section B: Degree of Use of Multimedia Instructional Resources for Information Provision in African Bible University Library

How has using multimedia information resources in the library helped students in their studies and research?

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Section C: Challenges Students and Librarians Experience While Using Multimedia Resources for Information Provision in African Bible University Library

What challenges do you face when using multimedia resources for information searching?

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Section D: Approaches to Ensure Improved Use of Multimedia Instructional Resources in African Bible University Library

What can ABU do to improve use of multimedia resources in the library?

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