SCHOOL OF LIBRARY, ARCHIVES AND DOCUMENTATION STUDIES

(SLADS) - BAGAMOYO.

A RESEARCH REPORT ON:

AN ASSESSMENT ON ICT FACILITIES TO ENHANCE ACADEMIC PERFORMANCE TO STUDENTS IN COLLEGE: A CASE OF SCHOOL OF LIBRARY AND ARCHIEVES DOCUMENTATION STUDIES (SLADS)

BY

PAULINA DINO KISINGA

A Research Report to be Submitted at the School to Library, Archives and Documentation Studies as a Partial Fulfillment for the Requirement of the Award of Ordinary Diploma in Library and Information Management.

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CERTIFICATION

The undersigned certify that supervisor has read and hereby recommend for acceptance by the School of Library, Archives and Documentation Studies (SLADS) Bagamoyo. A Research Report entitled *"An assessment on ict facilities to enhance academic performance to students in college"* in a partial Fulfillment of the Requirements for the Award of Ordinary Diploma in Library and Information Management.

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MADAM SAILEN

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DEDICATION

This research report is dedicated to my highest almighty God, the creator and source of everything in the universe. To my beloved Mother Tekla Meena, my brother Andrea Kisinga and My sister Sarah Njwaga and also to my beloved Father Dino Kisinga I always pray for you, love you so much and I appreciate you're to my friends may the almighty God bless you.

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LIST OF ABBREVIATIONS

ICT	-	Information and Communication Technology
AI	-	Artificial Intelligence
LMS	-	Learning Management Systems
TESI	-	Tanzania Electronic Schools Initiative
HPC	-	high-performance computing

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ABSTRACT

This study Assessed on ICT Facilities to Enhance Academic Performance to Students in College at School of Library and Archives Documentation Studies (SLADS) College, Bagamoyo. The study was conducted to assess the availability of ICT facilities in colleges, to evaluate the level of utilization of ICT facilities by students and to examine challenges hindering the effective use of ICT for learning within the college. Effective ICT are essential for Enhanced Subject Knowledge, Acquisition Improvement in Language and Literacy Skills, Development of Higher-Order Thinking, Increased Student Engagement and Motivation, and Efficiency in Information Retrieval

The study employed a descriptive research design and adopted a mixed research approach, combining both quantitative and qualitative methods. Data were collected from 25 students and 5 staff members using questionnaires and interviews. The collected data were analyzed using descriptive statistics such as frequencies and percentages, while qualitative data were analyzed thematically. The findings were presented in tables and narrative form for easy interpretation.

The findings revealed that although some students benefited from ICT services and experienced satisfactory service delivery, there were challenges such Inadequate Infrastructure and Hardware Shortages Unreliable Power Supply and Connectivity Issues, Lack of Technical Support and Maintenance, Resistance to Change and Institutional Culture.

The study concludes that the effectiveness of the ICT services system delivery plays a crucial role in students' access to information at SLADS College. It recommends that ICT should improve communication, strengthen payment processing systems, and enhance awareness among students and reliable service delivery.

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LIST OF TABLES

Table 4.1: Distribution of Respondents by Gender N=30 ……..…….17

Table 4.2: Age Distribution of Respondents N=30 ……....18

Table 4.3: Level of Education N=30 ……...19

Table 4.4 Perceived impact of ICT usage on academic performance N=30 ……...22

Table 4.5 Major barriers to effective ICT utilization N=30 …….……...23

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LIST OF FIGURES

Figure 4.1 The status of ICT facilities in the college ……..20

Figure 4. 2 Students use available ICT facilities for academic work……...21

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TABLE OF CONTENTS

CERTIFICATION i
DECLARATION AND COPYRIGHT ii
ACKNOWLEDGEMENT iii
DEDICATION iv
LIST OF ABBREVIATIONS v
ABSTRACT vi
LIST OF TABLES vii
LIST OF FIGURES viii

CHAPTER ONE: INTRODUCTION

1.0 Introduction 1
1.1 Background of the Study 1
1.2 Statement of the Problem 3
1.3 Objectives of the Study 3
1.3.1 General Objective 3
1.3.2 Specific Objectives 3
1.4 Research Questions 4
1.5 Significance of the Study 4
1.6 Scope of the Study 4
1.7 Limitations of the Study 4
1.7.1 Inadequate of Fund 4
1.7.2 Lack of Experience 5
1.8 Definition of Key Terms 5

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction 6
2.1 The Status of ICT Facilities in Colleges 6
2.2 Availability of ICT Facilities for Academic Activities 7
2.3 The Impact of ICT Facilities Usage on Students' Academic Performance 9
2.4 The Major Barriers to Effective ICT Utilization in Colleges 11

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction 13
3.1 Research Design 13

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3.2 Research Approach 13
3.3 Area of the Study 13
3.4 Population 14
3.5 Sample Size 14
3.6 Sampling Procedures 14
3.7 Data Collection Method 14
3.7.1 Primary Data 15
3.7.2 Secondary Data 15
3.8 Data Analysis and Processing 15
3.9 Data Quality Control 16
3.9.1 Pilot Study 16
3.10 Research Ethics 16

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.0 Introduction 17
4.1 Demographic Characteristics of Respondents 17
4.1.1 Distribution of Respondents by Gender 17
4.1.2 Distribution of Respondents by Age 18
4.1.3 Level of Education 18
4.2 The Status of ICT Facilities in the College 19
4.3 Students' Use of Available ICT Facilities for Academic Work 20
4.4 The Impact of ICT Usage on Students' Academic Performance 22
4.5 The Major Barriers to Effective ICT Utilization in the College 22

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction 24
5.1 Summary of the Study 25
5.1.1 Age Distribution 25
5.1.2 Education Level 25
5.1.3 Gender Distribution 25
5.1.4 Solutions to the Challenges Faced by the Institution 25
5.2 Conclusion 25
5.3 Recommendations 26
5.4 Further Study 27
REFERENCE 27

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APPENDIX I: STUDENT QUESTIONNAIRE 30
APPENDIX II: LECTURER QUESTIONNAIRE 34
APPENDIX III: INTRODUCTION LETTER 37

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CHAPTER ONE

INTRODUCTION AND BACKGROUND OF THE STUDY

1.0 Introduction

This Chapter briefly describes the background to the study, the general objective of the study, the specific objectives research questions, scope of the study and limitations of the study, significance of the study and definition of the key terms

1.1 Background of the Study

The integration of Information and Communication Technology (ICT) in higher education has transitioned from a luxury to a fundamental necessity for pedagogical evolution. ICT facilities encompassing hardware such as computers and interactive whiteboards, software applications, and high-speed internet connectivity serve as the infrastructure for modern knowledge construction. The efficacy of these facilities was often measured by their ability to enhance student performance, which is defined not only by grades but by the acquisition of 21st-century skills such as digital literacy and collaborative problem-solving. Globally, the "Digital Revolution" has fundamentally altered the landscape of tertiary education. In developed economies, the focus has shifted from mere access to "ubiquitous computing," where students interact with technology seamlessly across campus environments. According to UNESCO, the integration of ICT in education is a strategic priority to ensure inclusive and equitable quality education. In the United States and Europe, colleges have moved toward "Smart Campuses" utilizing Artificial Intelligence (AI) and Learning Management Systems (LMS) like Canvas or Moodle to provide personalized learning paths. Research indicates that when ICT facilities are robust, there was a significant correlation with improved student engagement and research capabilities. However, even in technologically advanced nations, a "second-level digital divide" exists, focusing not on the lack of hardware but on the gap in the quality of use and the pedagogical skills of instructors to leverage these tools effectively. In the 21st-century, Information and Communication Technology (ICT) was critical for educational modernization, offering tools for research, interactive learning, and improved academic performance. In the last decades, with fast improving computing This tremendous technological change was now affecting all manufacturing and service firms, including teaching and learning. Higher education plays a very important role through its graduates who occupy leadership positions in education as researchers, teachers, consultants and managers. Graduates of higher education

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are saddled with the responsibility to create and apply new knowledge and innovations. They also provide analytical perspectives on the problems of development and services rendered to the public and private sectors.

In Africa, the adoption of ICT in colleges was characterized by rapid growth tempered by significant structural challenges. The "leapfrogging" phenomenon whereby African nations bypass traditional wired infrastructure for mobile technology has made smartphones a primary tool for accessing educational content. Organizations such as the African Union, through its "Agenda 2063," emphasize that the transformation of the continent relies heavily on the integration of ICT in education and vocational training. Despite this vision, many African colleges face "technological marginalization" due to high costs of bandwidth, erratic power supply, and a lack of localized digital content. In many Sub-Saharan regions, the student-to-computer ratio remains high, often exceeding 50:1 in public institutions, which severely limits hands-on practice and impacts overall academic performance. Furthermore, the dominance of English-language software creates a linguistic barrier for students in non-Anglophone regions, complicating the interface between the student and the facility. Ebo (2013) explains that the term, Information and Communication Technology (ICT) was the system used for handling information; it includes multi- media, the internet, other devices like video, cameras and mobile telephones. Quadri and Abomoge (2013) define a university undergraduate as “a university student who has not yet received a first degree or the body member of a university or a college who has not received a first degree; a student in any school yet to complete his or her course”. In an attempt to clarify the concept of “competence”, Weinert (2001) relates the term to the Greek notion of arête, meaning excellence or being the best. Also, it is compared to the Latin term, Virtus, a kind of moral excellence generally understood as what people can do rather than what they know. Competence is synonymous to ability, aptitude, capability, effectiveness and skills.

In Tanzania, the government has recognized ICT as a catalyst for socio-economic development, as outlined in the National ICT Policy of 2003 and its subsequent revisions. For Tanzanian colleges and teacher training institutions, the integration of ICT is seen as a solution to the shortage of physical textbooks and the need to modernize the workforce. Initiatives such as the Tanzania Electronic Schools Initiative (TESI) have attempted to bridge the gap, yet the reality in many diploma and degree-granting colleges remains challenging. It connotes discrete skills and activities that individuals can perform (Allan, 2011). Kyoshaba (2009) in Cambridge

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University Reporter (2003) states that academic achievement was frequently defined in terms of performance in examination, academic achievement, performance in tests, and course work.

1.2 Statement of the Problem

In colleges learning process ICT facilities and tools are not merely delivery mechanisms but are cognitive scaffolds that allow students to visualize complex data, simulate scientific phenomena, and collaborate across geographical boundaries (Zafar, 2019).

Recognizing the importance of digitization, governments and educational ministries have launched significant initiatives to bolster ICT infrastructure. For instance, many national "Education Formalization" plans have been enacted to provide universal broadband access to campuses and to subsidize the procurement of hardware for students. In various regions, the government has partnered with private telecommunications firms to establish "Digital Campus" projects, aiming to integrate big data and cloud computing into the daily administrative and academic life of colleges (Yan, 2024).

However, if these facilities are obsolete, poorly maintained, or inaccessible, they create a "digital bottleneck" that stifles academic growth and prevents students from achieving their full potential (Zafar, 2019). Therefore, this study aims at assessing on ICT facilities to enhance academic performance to students at the School of Library and Archives and Documentation Studies (SLADS).

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study was to assess ICT Facilities to enhance academic performance to students in colleges.

1.3.2 Specific Objectives

The specific objectives include:

i. To assess the availability of ICT facilities in colleges.

ii. To evaluate the level of utilization of ICT facilities by students.

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iii. To examine challenges hindering the effective use of ICT for learning.

1.4 Research Questions:

i. What was the status of ICT facilities in the college?

ii. How often do students use available ICT facilities for academic work?

iii. What are the major barriers to effective ICT utilization in the college?

1.5 Significance of the Study

Information and Communication Technology (ICT) has fundamentally restructured the pedagogical landscape of the twenty-first century, evolving from a supplementary tool to a core infrastructure of modern education. In the context of higher education, ICT encompasses a broad spectrum of digital resources, including hardware such as laptops and interactive whiteboards, software applications for data management and content creation, and the pervasive connectivity of the internet. The integration of these technologies was theorized to enhance cognitive flexibility by allowing students to engage with information through multiple modalities visual, auditory, and interactive there by improving retention and understanding. However, the relationship between ICT investment and measurable academic achievement remains a subject of intense scholarly debate, as the efficacy of technology was often mediated by socio-economic factors, teacher competence, and the specific nature of the digital tools employed.

1.6 Scope of the study

The study would base on an Assessment of ICT Facilities to Enhance Academic Performance to Students in college. where the study expected to be conducted at School of Library, Archives and Documentation studies (SLADS).

1.7.0. Limitations of the Study

1.7.1 Inadequate of Fund

Budget allocated for this study may not be enough to cover all the necessary costs. In order to overcome this challenge, the researcher will use sustainable budget to accomplish the study and ensure every penny budget was used for the purpose and for the most informant things only.

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1.7.2 Lack of Experience

Experience is considered as a limitation because a researcher had no experience, since it was first time to conduct a research study. Therefore, research expects to get assistance from a supervisor and other people who are experienced in doing research.

1.8 Definition of Key Terms

1.8.1 Information and Communication Technology (ICT)

Is a broad term for all technologies used to handle information, combining computing (hardware, software) with telecommunications (internet, wireless, phones) to create, process, store, transmit, and share data, enabling modern digital interaction and global connectivity (Bonam, 2021).

1.8.2 Information

Is a processed organized data presented in a meaningful context to reduce uncertainty and enable communication or decision-making (Dirk, 2017).

1.8.3 College Students

Are individuals pursuing higher education at universities, community colleges, or technical schools, marking a pivotal phase of intellectual growth and, often, young adulthood (Sadhu, 2021).

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CHAPTER TWO

LITERATURE REVIWE

2.0 Introduction

According to Creswell (2014) literature review was the comprehensive analysis of existing research literature on a specific topic within a particular field of study. On the other hand, literature reviews in the process of going through various secondary sources of information that explained similarly with the current research topic.

2.1 The Status of ICT Facilities Colleges

Information and Communication Technology (ICT) in a college context refers to the diverse set of technological tools and resources used to transmit, store, create, share, or exchange information Katari (2023). In higher education, these facilities encompass hardware (computers, servers, tablets), software (Learning Management Systems, research tools), and connectivity infrastructure (high-speed internet, Wi-Fi networks). The integration of ICT is no longer viewed as a luxury but as a fundamental pillar of the modern academic environment, facilitating what is known as "blended learning "a mix of traditional face-to-face instruction and digital interaction.

The status of ICT facilities in a college is typically evaluated based on three primary dimensions: infrastructure, accessibility, and pedagogical integration. Infrastructure refers to the physical and digital backbone, such as Fiber-optic cabling and data centers Dirk (2017). Accessibility measures the ratio of devices to students and the availability of campus-wide Wi-Fi. Finally, pedagogical integration examines how effectively faculty utilize these tools to enhance student learning outcomes and research competences. The current status of ICT in colleges varies significantly based on institutional funding and geographic location, yet several universal trends have emerged. Most contemporary colleges have transitioned from isolated "computer labs" to ubiquitous computing environments where digital access is integrated into every classroom, library, and common area.

Infrastructure and Connectivity: The backbone of college ICT is high-speed broadband. Modern institutions prioritize "pervasive Wi-Fi," ensuring that students can access the university intranet and the global web from any point on estate Katari (2023). Many colleges

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now utilize Cloud Computing to host student data and applications, reducing the need for massive on-site server farms and allowing students to access specialized software (like CAD or statistical packages) from their personal laptops via virtual desktops.

Learning Management Systems (LMS): A central component of a college's ICT status is its LMS, such as Canvas, Moodle, or Slate Dirk (2017). These platforms serve as digital hubs where professors post syllabi, host discussion forums, collect assignments, and provide real-time feedback. The status of an LMS is considered "advanced" when it includes integrated plagiarism detection, automated grading for objective tests, and data analytics to identify students at risk of failing.

Smart Classrooms and Multimedia: The traditional lecture hall has been replaced by "Smart Classrooms." These facilities are equipped with interactive whiteboards, high-definition projectors, and lecture-capture systems (like Panopto or Echo360) that record audio and video of the class for later (2021). This is particularly vital for "flipped classroom" models, where students watch lectures at home and use class time for interactive problem-solving.

Specialized Research and Digital Libraries: For colleges, the ICT status is also defined by the digital library. Subscriptions to academic databases (JSTOR, ScienceDirect) and the use of institutional repositories for faculty research are normal Sadhu (2021). Furthermore, specialized departments often house high-performance computing (HPC) clusters for complex simulations in physics, engineering, and data science.

2.2. Availability of ICT Facilities for Academic Activities

The integration of Information and Communication Technology (ICT) into the educational landscape has fundamentally altered the pedagogical relationship between instructors and beginners Bonam (2021). Traditionally, education relied on a "banking model" where knowledge was deposited by the teacher into the student; however, modern ICT properties reaching from interactive whiteboards and tablets to complex Learning Management Systems (LMS)have shifted the focus toward a student-centered, constructivist approach. According to authoritative texts on educational technology, ICT was defined as a diverse set of technological tools and resources used to transmit, store, create, share, or exchange information. These include hardware such as computers and physical networking infrastructure, as well as software

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applications that facilitate cognitive development, language acquisition, and subject-specific mastery.

The Role and Impact of ICT in Modern Education**,** the primary advantage of ICT in the classroom was its ability to enhance student engagement through multisensory incentives Katari (2023). Research indicates that ICT has a significant positive effect on student learning, particularly in subject knowledge acquisition, with an observed effect size of approximately 0.59. This suggests that students using digital tools often outperform those in traditional settings because technology allows for "scaffolding"a process where digital prompts help students reach higher levels of understanding than they could achieve alone. Furthermore, ICT promotes autonomy and flexibility, allowing for self-paced learning that accommodates various learning styles, which is particularly beneficial in diverse classrooms.

However, the transition to a digital-first environment was not without challenges. Critics and researchers note that excessive screen time can lead to "cognitive overload," where the brain was overwhelmed by the sheer volume of interactive stimuli, potentially hindering deep information dispensation Dirk (2017). Additionally, the "digital divide" remains a critical concern; students in rural or impoverished areas often face barriers such as erratic electricity, high data costs, and a lack of hardware, which can exacerbate existing educational inequalities.

Frequency and Patterns of ICT Usage for Academic Work: The frequency with which students utilize ICT facilities for academic purposes varies significantly based on the level of education, the availability of infrastructure, and institutional procedures Bonam (2021). In higher education, ICT usage is nearly constant, as students rely on digital libraries, word processors, and collaborative platforms for research and assignments. In primary and secondary settings, usage is often more structured and dependent on teacher integration.

Usage frequency can be defined as the regularity and duration with which a student interacts with digital tools to achieve specific learning purposes Sadhu (2021). This is often measured through "User Habits," which categorize students into heavy, moderate, or light users based on their daily or weekly interaction with school-provided or personal ICT resources.

To illustrate how a student might use available ICT facilities, consider the following scenario: A secondary school student, "Amina," was tasked with a research project on climate variation Katari (2023). Her usage of ICT facilities follows a systematic pattern: Initial Research: Amina

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visits the school's e-library during her free period to access peer-reviewed journals and digital encyclopedias. Collaboration: In the evening, she uses a cloud-based word processor (like Google Docs) to collaborate in real-time with three classmates, sharing notes and drafting the report simultaneously. Data Analysis: She uses a spreadsheet application to create graphs representing temperature changes over the last century, applying mathematical formulas to her data set. Submission: Finally, she uploads her completed work to the school's Learning Management System (LMS) before the deadline, where her teacher provides immediate digital feedback. In this example, the "frequency" was high because the student interacts with at least four different ICT interfaces within a single 24-hour period to complete a single academic task.

2.3. The Impact of ICT Facilities Usage on Students' Academic Performance

Information and Communication Technology (ICT) is a comprehensive term that encompasses all technical means used to handle information and aid communication. It includes the hardware (computers, mobile phones, servers), software (applications, operating systems), and the network infrastructure (the internet, Wi-Fi, satellite systems) that allow people and organizations to create, store, process, and transmit data in a digital (2017). The impact of Material and Communication Technology (ICT) on academic performance was a multifaceted phenomenon that bridges cognitive development, resource accessibility, and pedagogical efficiency. While traditional textbooks provide a linear path to knowledge, ICT offers a non-linear, interactive, and multisensory environment that can significantly alter how students process information.

The following points detail the specific impacts of ICT on student achievement, drawing from authoritative educational research and meta-analyses:

Enhanced Subject Knowledge: Meta-analytic studies have demonstrated that ICT has a substantial positive effect on subject-specific learning, with an estimated effect size of 0.59 Katari (2023). . This is particularly evident in mathematics and science, where digital simulations and virtual laboratories allow students to visualize abstract concepts that are difficult to grasp through static text.

Improvement in Language and Literacy Skills: ICT tools, such as interactive e-books and language-learning software, provide immediate phonological feedback and multisensory

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stimuli. This has been shown to improve vocabulary acquisition and reading comprehension (effect size ≈ 0.24) by engaging students in active rather than passive literacy practices.

Development of Higher-Order Thinking: The use of ICT encourages "scaffolding," where digital prompts assist students in problem-solving tasks. This fosters critical thinking and analytical skills, as students must evaluate, synthesize, and apply information from diverse digital sources rather than simply memorizing facts.

Increased Student Engagement and Motivation: The "gamification" of knowledge using educational apps that reward progress rises student persistence Katari (2023). When students find the learning process interesting and interactive, they spend more time on task, which directly correlates with improved grades.

Personalized and Self-Paced Learning: ICT allows for "differentiated instruction," where software adapts to a student's individual step Bonam (2021). High-performing students can move ahead to advanced modules, while struggling students receive additional remedial exercises, ensuring that no learner was left behind due to the average pace of a classroom.

Collaborative Learning and Social Construction of Knowledge: Digital platforms like wikis, blogs, and cloud-based documents facilitate group labor Sadhu (2021). This collaborative environment mirrors the "Social Development Theory," suggesting that students learn more effectively when they can interact with peers to solve problems and share perspectives.

Efficiency in Information Retrieval: The transition from physical libraries to digital databases has drastically reduced the time required for investigate Sadhu (2021). Students can access thousands of peer-reviewed journals and global resources instantly, allowing more time for the actual analysis and writing phases of academic work.

Bridging the Gender and Ability Gap: Research indicates that when ICT was integrated effectively, gender differences in mathematics and science performance tend to reduce Dirk (2017). Furthermore, assistive technologies (such as speech-to-text) enable students with learning disabilities to perform at levels comparable to their peers, fostering an inclusive and high-achieving environment.

In conclusion, the integration of ICT into education acts as a powerful catalyst for academic excellence by transforming the student from a passive recipient of information into an active,

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self-regulated beginner Bonam (2021). While challenges such as the digital divide and cognitive overload must be managed, the overwhelming evidence suggests that ICT usage significantly boosts academic performance across various disciplines. Ultimately, the effectiveness of these tools is not inherent in the hardware itself, but in the pedagogical strategy and the duration of the intervention, which must be carefully aligned with the student's developmental stage.

2.4. The Major Barriers to Effective ICT Utilization in Colleges

The identification of barriers to Information and Communication Technology (ICT) integration was critical for institutional growth. Katari (2023). While the potential for digital transformation was high, several systemic, structural, and pedagogical obstacles often prevent colleges from realizing the full benefits of these technologies. Based on authoritative research in educational technology and institutional management, the following eight points represent the primary barriers to effective ICT utilization in a college environment:

Inadequate Infrastructure and Hardware Shortages: The most fundamental barrier was the lack of physical possessions Bonam (2021). Many institutions suffer from an insufficient number of computers, outdated hardware that cannot support modern software, and a lack of specialized facilities such as language labs or high-speed server lodgings. Without a 1:1 or 2:1 student-to-computer ratio, frequent and meaningful access remains impossible.

Unreliable Power Supply and Connectivity Issues: In many regions, particularly in developing economies, intermittent electricity was a significant deterrent. Frequent power outages can damage sensitive equipment and disrupt the flow of digital lessons. Furthermore, low bandwidth or lack of campus-wide Wi-Fi prevents students and faculty from accessing cloud-based resources and research databases.

Lack of Technical Support and Maintenance: The "total cost of ownership" for ICT includes ongoing conservation Sadhu (2021). Many colleges invest in hardware but fail to employ dedicated technical staff. When a device malfunctions or software requires updating, the lack of immediate technical assistance leads to "technology abandonment," where expensive equipment sits idle due to minor technical glitches.

Resistance to Change and Institutional Culture: Psychological barriers are often as formidable as physical singles Katari (2023). Some faculty members perceive ICT as a threat to their

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authority or as an unnecessary complication to a proven prospectus. A conservative institutional culture that does not reward innovation can stifle the adoption of new digital tools.

Lack of Clear ICT Policies and Strategic Planning: Effective utilization requires a road map Sadhu (2021). Many colleges lack a formal ICT policy that outlines goals for integration, standards for digital assessment, and protocols for data privacy Without a centralized strategy, ICT use remains fragmented, with some departments excelling while others lag behind.

Overwhelming Curricular Demands and Time Constraints: The pressure to complete a dense syllabus often leaves teachers with little time to experiment with new knowledges Bonam (2021). Integrating ICT into a lesson plan requires significant preparation time that is often not accounted for in a standard teaching load. Consequently, ICT is often viewed as an "add-on" rather than an integral part of the learning process.

The effective utilization of ICT in a college setting is not merely a matter of purchasing equipment; it is a complex interplay of infrastructure, human capital, and institutional will. While hardware and connectivity form the necessary foundation, the "soft" barricades such as teacher training, pedagogical shift, and strategic policy are often the most difficult to overwhelmed Katari (2023). For a college to truly benefit from the digital revolution, it must move beyond sporadic technology use and toward a holistic integration where ICT serves as a seamless tool for inquiry, collaboration, and knowledge creation. Addressing these eight barriers requires a sustained commitment from both government bodies and institutional leadership to ensure that technology enhances, rather than complicates, the educational experience.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter explains various aspects that will be applied in carrying out the research study, it explains the research design, research approach, target population, area of the study, sample size, sampling technique, validity and reliability, and ethical considerations are also included.

3.1 Research Design

Research design refers to an arrangement or plan of research work for collection and analysis of data (Hancock, 2021). The most important decision in research design was the choices to be made concerning the research approach since it helps to determine how a particular study will be. The researcher employed a descriptive design.

3.2 Research Approach

A research approach is a plan of action that gives direction to conduct research systematically and efficiently (Daniel, 2019). The research methodology comprises three research approaches according to Neuman (2003) which are qualitative, quantitative and mixed method approach. The researcher used a mixed method approach where both qualitative and quantitative methods was used to collect and analyze data. In this study, these approaches will help the researcher to obtain more details and specific information about the problem of the study.

3.3 Area of the Study

Ngechu (2014) defines an area of study as the limit of the study or problem. The study was conducted at School of Library Archives and Documentation Studies. The School of Library Archives and Documentation Trainings is selected because; there are few numbers of related studies that have been conducted in the area as well as the familiarity of the researcher with the study environment.

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3.4 Population

According to Cresswell (2012), a population was defined as a group of individuals who have similar features that help them to be different from other groups. As it can be an entire collection of people, animals, plants or things from which we may collect data. It is the entire group we are interested in and wish to describe or draw a conclusion. In this study, the researcher used a population not less 300 respondents from School of Library, Archives and Documentation Revisions which include Lectures and Students.

3.5 Sample size

According to Kumar (2005) sample size was the small number of individuals which selected from population as generalization of the study. The sample size of this study was 30 respondents that comprised of 20 students and 10 will be ICT Technicians as the key informants of the study.

3.6 Sampling Procedures

Sampling techniques was methods where researcher uses to select a population's representatives that can be used to make inferences or generalization on the whole population concerning an existing theory (Taherdoost, 2018). In this study, both probability and non-probability sampling techniques will be used to select the sample required by the study. The probability sampling technique that was used in the study was random sampling technique. This technique was used to select students to fill questionnaires. On the other hand, a non-probability technique called purposively sampling was used to obtain key informant from library staff that will be included in interviews.

3.7 Data Collection Method

Data collection was the process of gathering and measuring information on the variable of interest in an established systematic style that enables one to answer stated research questions (Kabir, 2016).In this study, the researcher used two major sources of data collection which include primary and secondary sources since the combination of these methods improves validity and reliability.

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3.7.1 Primary Data

Primary data refers to the data from sources that the researcher directly collects through interviews, observation and questionnaires. Primary data are those which are collected with a fresh hand for the first time, and thus happen to be original. Primary data was collected from the sample population by using questionnaire, and interview methods.

3.7.1.1 Questionnaire Method

According to Kabir (2016) questionnaire was a research tool which includes a series of written and printed questions that are in a systematic order to gather information from the respondents. A structured questionnaire was administered electronically and in person, consisting of both c losed and openended questions. It is designed to gather data on ICT usage, perceived benefits , and encountered challenges.

3.7.1.2 Interview Method

Interview was one of the instruments of data collection that involves one to one meeting at which one was asked the target questions related to the research problem (Rwagoshora, 2006). This study used a semi-structured interview to obtain data, whereas a semi-structured interview was a kind of interview that employs a blend of closed-ended questions and open-ended questions. The researcher used this method to collect key information from Lectures since it allowed rearranging any query accordingly to acquire appropriate information.

3.7.2 Secondary Data

Secondary data refers to data that was collected by someone other than the user (Raj, 2005). Secondary data will be collected by reviewing documents related to the study. Secondary data in this study collected through reviewing research reports of other scholars' theses and dissertations, books, journals and articles (secondary sources) related to the study.

3.8 Data analysis and processing

Krishna (2004) defines data analysis as the means of critical examination of the assembled and grouped data for studying the characteristics of the object under the study and for defining arrangements of association among the variable connecting to it. The researcher obtained both quantitative and qualitative data, and each has its way of analyzing data. As in quantitative, data can be analyzed by a statistical method by using excel and Statistical Product and Service

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Solutions (SPSS) but qualitative data will be analyzed by using the content analysis method since qualitative data are in form of the word not numerical.

3.9 Data quality Control

3.9.1 Pilot Study

According to (Codete, 2017) pilot study refers to small scale preliminary studies. A pilot study was typically conducted with a small representative sample identical to but not including the group to be studied (Orodho, 2010). The main reason for conducting the pilot study is to test the weaknesses and strengths of research instruments to correct their weaknesses and also help the researcher to be familiar with the research instruments.

3.10 Research Ethics

Research refers to things which should be done or not to be done by the researcher before, during and after obtaining the data from the field (Bhattacherjee, 2012). To ensure ethical consideration, the researcher will introduce the purpose of the research to the respondents, this brought honesty and cooperation to participate in the study. Also, the researcher will use the information obtained from the field for academic purposes only while maintaining the confidentiality of the respondents who will participate in this study, lastly, the researcher ensured that all relevant sources involved in this study acknowledged to avoid plagiarism in conducting this research.

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CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.0. Introduction

This chapter presents analyses and discusses data obtained from the field of study. The study assessed the contribution of academic libraries in providing health information to students. Data was collected from Hospital in Bagamoyo District. Questionnaire and interview methods were used to collect data. The tables and figures were used to present the findings; also, the discussion of those findings has been made in this chapter. The specific objectives of this study were; to identify the ways used by an organization on provision of ethical issue among record users, to identify importance of accessing health information among record users, and to find out the challenges facing the provision of ethical issues in record management.

4.1 Demographic Characteristics of Respondents

In social science research personnel characteristics of respondents have very significant role to play in expressing and giving the responses about the problem, keeping this in mind, in this study a set of personal characteristics namely, age, sex, education and occupation of the 30 respondents have been examined and presented in this chapter.

4.1.1 Distribution of Respondents by Gender

Gender is an important variable in a given social situation which is variably affected by any social or economic phenomenon and globalization is not an exception to it. Hence the variable gender was investigated for this study. Table number 4.1.1 illustrates the results:

Table 4.1.1 Distribution of Respondents by Gender

N=30

Gender	**Frequency**	**Percentage**
Female	12	40%
Male	18	60%
Total	**30**	**100%**

Source: Field Data, (2026)

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The findings from Table 4.1.1 above shows that 12 (40%) were female and 18 (60%) were males. This implies that at study area males were participated more. Even female was few compared to males but were paid full cooperation that why study was successfully. During investigation it was observed that male students are many compared to female because the college is providing science courses and male are willing to leaning this course compare to female.

4.1.2 Distribution of Respondent by Age

Age of the respondents was one of the most important characteristics in understanding their views about the particular problems; by and large age indicates level of maturity of individuals in that sense age becomes more important to examine the response. Table 4.1.2 below indicates age of respondents;

Table 4.1.2: Age Distribution of Respondents **N=30**

Age Distribution of Respondents	**Frequency**	**Percentage**
20 – 25	14	45%
26 – 30	4	15%
31 – 35	6	15%
36 and above	4	25%
Total	**30**	**100%**

Source: Field Data, (2026)

The findings from Table 4.2 above reveals that 14 (44.6%) of respondents aged between 20-25 years, 4 (13.3%) aged between 26-30 respondents, 6 (20%) respondents aged 31-35, and 4 (13.3%) were aged between 36 years and above. These respondents were able to accesses and use the different information about ethical issues and matching those people who live in one area especially. This age group was purposely how ethical issues are being appeared because the researcher had a faith to this age because they were wise and had a free mind to provide relevant data according the nature of study.

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4.1.3 Level of Education

The researcher found that it was very essential to get information on level of education of the respondents because level of education differences influences. So, the aim was to see the response rate from each level of education and how do they perceive provision of health information. Data were analyzed and results presented in Table 4.1.3:

Table 4.1.3 Level of Education (N=30)

Level of education	**Frequency**	**Percentage%**
Certificates	12	40%
Diploma	8	26.6%
Degree	6	20%
Masters	4	13,3%
Total	**30**	**100%**

Source: Field Data (2026)

Findings from Table 4.1.3 above shows that 12 (40%) had certificate, 8 (26.6%) were Diploma, 6 (20%) had Degree, while 4(13.3%) had Master's Degree. The finding of the study found that the study used respondents with different level of education. This implies that including respondents with different education levels can provide a range of perspectives on the research topic 40% was certificate students. This attributed by the fact that certificate studied as module was willing and showed a lot of cooperation in this study. This finding implies that certificate level was respondents who participated much in this study.

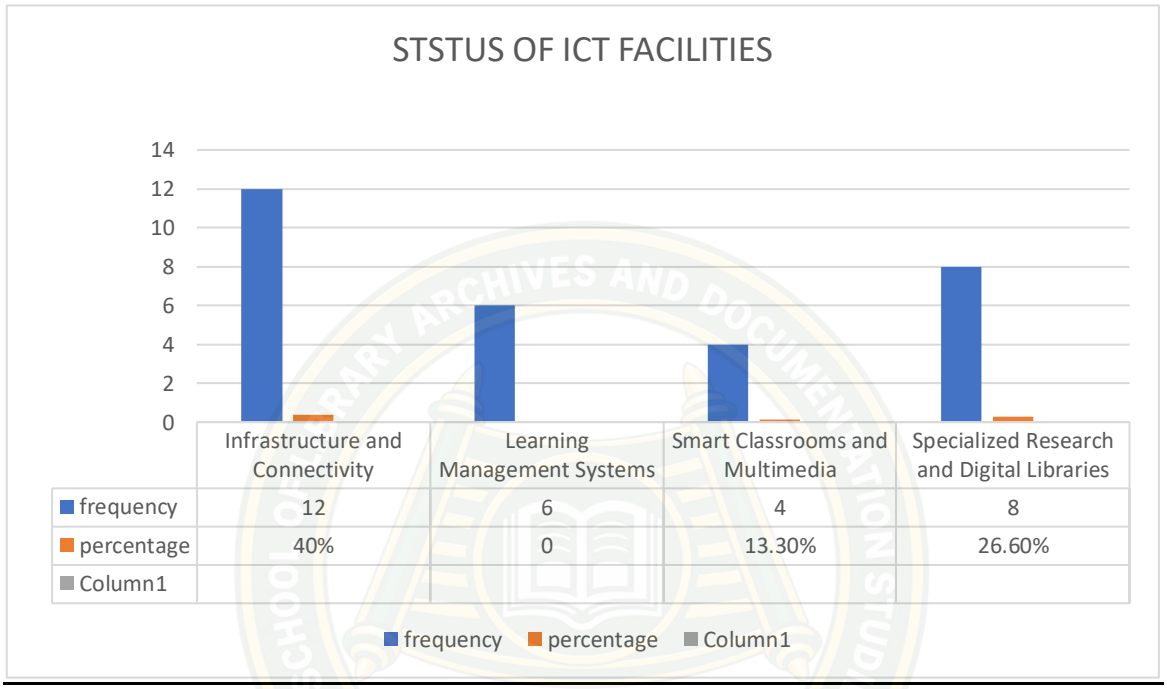
This distribution suggests that the majority of the respondents have foundational or intermediate academic training, which is a significant factor when analyzing the integration of ICT into the curriculum.

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4.2 The status of ICT facilities in the college

The status of ICT facilities in colleges typically reveals a gap between availability and student needs. Findings usually highlight issues with infrastructure, accessibility, and maintenance. Figure 4.2 indicate the findings:

Figure 4.2 The status of ICT facilities in the college **N=30**



Source as Field Data (2026)

Findings from Figure 4.2 above shows that 12(40%) were Infrastructure and Connectivity,6(20%) were Learning Management Systems, 4(13.3%) were Smart Classrooms and Multimedia and 8(26.6) were Specialized Research and Digital Libraries

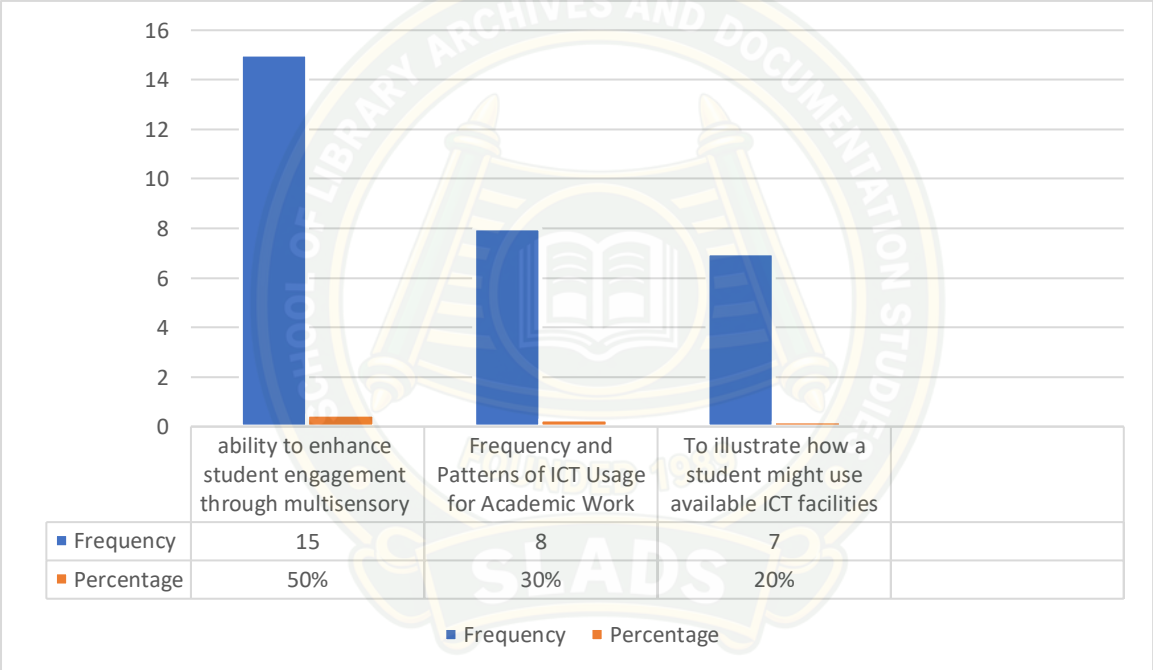
The data suggests that representing the largest share of institutional investment and strategic focus. This aligns with established academic discourse which posits that while advanced tools like AI and VR offer pedagogical potential, their effectiveness is contingent upon a robust underlying digital capacity. The reliance on infrastructure (40%) underscores the necessity of stable, high-speed access as a prerequisite for any meaningful digital pedagogical shift. Furthermore, the 26.6% allocation toward specialized research and digital libraries highlights the critical role of information access in higher education, where the ability to retrieve and synthesize scholarly data is a primary driver of academic performance.

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4.3 Students use available ICT facilities for academic work

The data extracted from the study's graphical findings illustrates the distribution of student perspectives across three primary functional areas of ICT integration. When presenting data regarding student usage, researchers often categorize ICT engagement into three primary domains: information retrieval, academic communication, and digital content production. Quantitative analysis frequently demonstrates a positive correlation between the intensity of ICT usage and academic outcomes, often expressed through regression models. Figure 4.2 shows the results:

Figure 4.3 Students use available ICT facilities for academic work



Source as Field Data (2026)

Findings from Figure 4.2 above shows that 7(23%) were ability to enhance student engagement through multisensory 8(30%) Frequency and Patterns of ICT Usage for Academic Work and 7(20%) To illustrate how a student might use available ICT facilities.

> *When these factors are combined, they show that **73.3%** of the core feedback is distributed evenly across engagement, regular usage, and practical application. For college administrators, this means that simply providing hardware is insufficient. To truly enhance academic performance, the college must ensure that the infrastructure supports*

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high-speed multimedia rendering (for multisensory engagement), maintains high uptime (for consistent usage patterns), and offers clear user orientations so students know exactly how to leverage the available resources.

4.4 The impact of ICT usage on students' academic performance

Respondents were further asked to indicate the extent to which the use of ICT facilities has influenced their academic performance. Their responses were recorded and are summarized in Table 4.4 below.

Table 4.4 Perceived Impact of ICT Usage on Academic Performance N=30

Perceived Impact	**Frequency**	**Percentage**
Greatly improved performance	16	53.3%
Moderately improved performance	9	30%
No notable change	5	16.7%
Total	**30**	**100%**

Source: Field Data, (2026)

The findings from Table 4.4 above shows that 16 (53.3%) of the respondents reported that ICT usage had greatly improved their academic performance, 9 (30%) indicated that it had moderately improved their performance, while 5 (16.7%) reported no notable change. This implies that the majority of the respondents perceived ICT facilities as beneficial to their academic work, particularly in areas such as research, communication with lecturers, and access to learning materials. The few respondents who reported no notable change attributed this mainly to limited access time and unfamiliarity with some of the available digital tools.

This finding is consistent with the view that ICT usage promotes scaffolding and self-paced learning, which allows students to engage more actively with course content and consequently improve their academic outcomes.

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4.5 The major barriers to effective ICT utilization in the college

The study further sought to establish the major barriers hindering effective utilization of ICT facilities in the college. Respondents were asked to identify the challenges they encounter, and the findings are presented in Table 4.5 below.

Table 4.5 Major Barriers to Effective ICT Utilization **N=30**

Barrier	Frequency	Percentage
Inadequate infrastructure and hardware	11	36.7%
Unreliable power supply and connectivity	8	26.7%
Lack of technical support and maintenance	6	20%
Resistance to change and limited digital skills	5	16.7%
Total	**30**	**100%**

Source: Field Data, (2026)

Findings from Table 4.5 above indicates that 11 (36.7%) of the respondents cited inadequate infrastructure and hardware as the major barrier to effective ICT utilization, 8 (26.7%) mentioned unreliable power supply and connectivity, 6 (20%) pointed to lack of technical support and maintenance, while 5 (16.7%) attributed the challenge to resistance to change and limited digital skills. This implies that although the college has made efforts to provide ICT facilities, the inadequacy of infrastructure together with power and connectivity challenges remain the most pressing obstacles limiting the extent to which students and staff can make full use of the available technology.

These findings confirm that the effective utilization of ICT is not merely a matter of availability of equipment, but also depends on reliable infrastructure, technical support, and a supportive institutional culture that embraces digital change.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0. Introduction

This chapter, the researcher presents the following sections: discussion of findings, implication of the findings, recommendations, limitations of the study, conclusion, and suggestion for further studies and summary of the study.

5.1 Summary of the study

The study was summarized through main objective as indicate in the following subtitle

5.1.1 Age Distribution

The findings showed that most respondents were aged between 20–25 years (45%), followed by those aged 36 years and above (25%), 26–30 years (15%), and 31–35 years (15%). This indicates that the majority of the participants were young adults who are actively involved in using ICT facilities for learning and were able to provide reliable information for the study.

5.1.2. Education Level

The study found that 40% of the respondents were certificate students, 26.6% were diploma students, 20% held degree qualifications, and 13.3% had master's degrees. This shows that respondents came from different educational backgrounds, providing diverse opinions on the availability and use of ICT facilities in the college.

5.1.3. Gender Distribution

The findings revealed that 18 respondents (60%) were male and 12 respondents (40%) were female. This indicates that male respondents formed the majority of the study participants, although both genders contributed valuable information to the research.

5.1.4. Solutions to the Challenges Faced by the Institution

Based on the findings, the institution can improve ICT utilization by implementing the following measures: Increase investment in ICT infrastructure and modern computer equipment, Improve internet connectivity and ensure a reliable power supply, Provide regular maintenance and technical support for ICT facilities, Organize ICT training programs to

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improve students' and staff's digital skills and Encourage a positive attitude toward ICT adoption through awareness and continuous support.

5.2 Conclusion

The study concluded that ICT facilities play an important role in supporting teaching, learning, and research at the School of Library, Archives and Documentation Studies (SLADS). Most students frequently used ICT facilities for research, assignments, project writing, exam preparation, and accessing learning resources. The use of ICT improved access to information, enhanced communication, reduced the time required for research, and supported academic performance. However, the effective use of ICT was limited by challenges such as inadequate ICT infrastructure, poor internet connectivity, unreliable power supply, lack of user awareness, and insufficient technical support. Therefore, improving ICT facilities, infrastructure, and user training is essential to maximize the benefits of ICT in higher education.

Finally, the study went further to reduce the gap between availability and utilization of ICT facilities by providing solutions and strategies to the already identified problems which were indicated as militating factors towards utilization of the ICT facilities.

5.3. Recommendations

The following recommendations are made:

i. The problem of inadequate awareness can be addressed by the library management the library should give more education to users on the use of ICT resources. Training courses and library public relations programmed (both traditional and electronic), should be organized for awareness and guide to effective use of ICT facilities among the users of the library.
ii. Purchase and building of power station to ensure regular power supply because these resources could only be utilized using power supply.
iii. The skills of librarians on ICT based resources should be updated; to enable them direct the users on the use of ICT resources for research purposes. The skill can be connected through seminars, workshops, conferences and short course training of the staff. There should be constant training and re-training so as to make them flow with current trends.
iv. Improving the Speed of Internet Connectivity to provide speedy access and utilization of these ICT facilities.

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v. There should be education of undergraduate research students on the use of ICT based library resources. This will help to sensitize the undergraduate researchers on the importance of ICT resources available in libraries.

5.4. Area for further study

Having undertaken a study on availability and utilization of ICT based library resources by undergraduate students of School of library Archive, and documentation studies and as a result of research being a continuous process, and also based on the limitations of the present study the following the following suggestions were made for further studies;

i. Further research in this area should be undertaken with more universities included in the study and hence, a larger sample size to enable greater confidence in generalization of results.
ii. Since a private university was used for this study, there should be replication of the study in other state and federal university libraries in Nigeria where they have not been studied.
iii. The Study of User's Awareness of ICT based library Resources Available in Academic, Public, National or Special libraries.
iv. Effect of the Use of ICT facilities on the Academic Performance of University Undergraduate in South-Eastern Zone of Nigeria.

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APPENDIX I

STUDENT QUESTIONNAIRE

I am **Paulina Dino Kisinga**, the student from School of Library, Archives and Documentation Studies (SLADS), Pursuing Ordinary Diploma in Library and Information Management. Am undertaking the research title *"**AN ASSESSMENT ON ICT FACILITIES TO ENHANCE PERFORMANCE TO STUDENTS IN COLLEGE**.*

". Kindly, I beg you to fill my questionnaire according to your knowledge.

Please select the most appropriate option for each question.

1. How often do you use the college's computer laboratories for academic assignments?

   A) Daily

   B) 2–3 times a week

   C) Rarely

   D) Never

2. How would you rate the reliability of the campus Wi-Fi/Internet connection?

   A) Excellent

   B) Satisfactory

   C) Unreliable

D) No access provided

3. Which ICT tool do you find most helpful for understanding complex course material?

   A) Learning Management Systems (e.g., Moodle, Canvas)

   B) Multimedia presentations (Videos/Slides)

   C) Specialized software (e.g., SPSS, AutoCAD, MATLAB)

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D) Online research databases

4. Do you own a personal laptop or tablet for your studies?

   A) Yes, and I use it on campus

   B) Yes, but I only use it at home

   C) No, I rely entirely on college facilities

   D) No, but I share one with others

5. How proficient do you feel in using digital research tools (e.g., Google Scholar, JSTOR)?

   A) Highly proficient

   B) Moderately proficient

   C) Beginner

   D) Not proficient

6. Does the use of ICT in lectures increase your engagement with the subject?

   A) Significantly increases

   B) Slightly increases

   - C) No impact
   - D) It is distracting

7. What is the biggest barrier to your use of ICT facilities on campus?

   A) Insufficient number of computers

   B) Poor internet speed

   C) Limited opening hours of labs

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D) Lack of technical support/skills

8. How often do you communicate with lecturers via digital platforms (Email/LMS)?

A) Frequently

B) Occasionally

C) Rarely

D) Never

9. Have you received formal training from the college on how to use academic ICT tools?

A) Yes, a comprehensive orientation

B) Yes, but it was insufficient

C) No, I am self-taught

D) No training was offered

10. To what extent has ICT improved your overall GPA/grades?

A) Significant improvement

B) Moderate improvement

C) No noticeable change

D) My grades have declined due to digital distractions

11. Which facility requires the most urgent upgrade?

A) Computer hardware

B) Internet bandwidth

C) Digital library resources

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D) Printing and scanning services

12. Do you prefer "Blended Learning" (mix of online and face-to-face) over traditional lectures?

    A) Strongly prefer Blended

    B) Prefer traditional only

    C) No preference

    D) Undecided

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APPENDIX II

LECTURER QUESTIONNAIRE

1. How frequently do you integrate ICT tools into your classroom teaching?

   A) Every lecture

   B) Most lectures

   C) Occasionally

   D) Never

2. What is your primary goal when using ICT in education?

   A) To deliver content more efficiently

   B) To encourage student collaboration

   C) To facilitate remote access to materials

   D) To comply with institutional policy

3. How would you rate the technical support provided by the college IT department?

   A) Very responsive and helpful

   B) Moderately helpful

   C) Slow/Inefficient

   D) Non-existent

4. Which factor most hinders your integration of technology in teaching?

   A) Lack of personal digital skills

   B) Inadequate classroom infrastructure (e.g., broken projectors)

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C) Lack of time to prepare digital content

D) Student lack of access to devices

5. Do you believe the current ICT facilities are sufficient for the college's curriculum?

   A) Fully sufficient

   B) Partially sufficient

   C) Insufficient

   D) Obsolete

6. How has ICT affected your ability to assess student performance?

   A) Made it much faster and more accurate

   B) Slightly improved the process

   C) No change

   D) Made it more complicated

7. What type of professional development in ICT do you require most?

   A) Basic computer literacy

   B) Advanced use of LMS and online pedagogy

   C) Data analytics for student monitoring

   D) Use of AI and emerging technologies

8. How do you perceive the impact of ICT on student academic discipline?

   A) Improves research quality

   B) Encourages self-directed learning

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C) Increases plagiarism and distractions

D) Both A and B

9. Does the college provide a budget or resources for you to develop digital courseware?

   A) Yes, ample resources

   B) Limited resources

   C) No, I use my own resources

   D) Not applicable

10. In your opinion, what is the most essential ICT facility for enhancing student performance?

    A) High-speed campus-wide Wi-Fi

    B) Virtual Learning Environments (VLE)

    C) E-libraries and digital journals

    D) Interactive smartboards in classrooms

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APPENDIX III: INTRODUCTION LETTER

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

TANZANIA LIBRARY SERVICES BOARD

SCHOOL OF LIBRARY, ARCHIVES AND DOCUMENTATION STUDIES

TO:
PAULINA DINO KISINGA
SLADS
P.O.BOX 227
BAGAMOYO

25/05/2026

RE: REQUEST FOR DATA COLLECTION

The above heading is concerned,

This is to inform you the permission has been granted to you to collect data on the study titled *"An Assessment on an ICT Facilities to Enhance Performance to students in College the Use of Artificial Intelligences in Learning among Colleges Students."*

We hope that the study will be used for academic purposes only and not otherwise.

With kind regards,

SCHOOL OF LIBRARY ARCHIVES AND DOCUMENTATION STUDIES
P. O. Box 227
BAGAMOYO - TANZANIA

LYIMO P.Z

ACADEMIC OFFICER

Ukuni; Block S;Plot 96; P.O BOX 227, Bagamoyo Pwani; Tel: +255-023-2440501;Fax;023-2440338 email: slads@tlsb.go.tz/management@slads.ac.tz ;website: www.slads.ac.tz

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