

EXPLORING THE USE OF ICT IN THE LEARNING PROCESSES OF LIBRARY AND INFORMATION SCIENCE STUDENTS IN POLYTECHNICS IN SOUTH-SOUTH NIGERIA

BY

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ABSTRACT

This study examined the use of Information and Communication Technology (ICT) in learning by students in library and information science departments in polytechnics located in the South-South region of Nigeria. Delta State Polytechnic, Ogwashi-Uku and Auchi Polytechnic, Edo State are the area of study. The population chosen for the study is made up of 200 students out of 420 students that constitute the population of library and information science students of the two polytechnics. A survey design was employed, and data was collected through questionnaires. Out of 200 distributed copies, 153 were returned. The findings revealed that one of the primary reasons for low usage of ICT facilities by students was their irregular engagement with the available resources. The study found that the overall use of ICT by students was at an average level. In light of this, the study recommends that library and information science students in these polytechnics should maximize the use of ICT facilities to a greater extent, as this would help them fully benefit from the resources available. Furthermore, it is suggested that library staff should adopt a more user-friendly approach, and students should acquire essential IT skills to navigate ICT tools effectively. Additionally, it is recommended that the school libraries be equipped with stable internet access to facilitate student access to a wider range of information resources, including computers, printers, and the internet.

Keywords: ICT, Library, ICT Facilities, Information, Science.

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Introduction

Information and Communication Technology (ICT) has become an indispensable component of higher education, equipping students with the digital competencies required for academic success and employability. Employers increasingly expect graduates to possess not only disciplinary knowledge but also ICT skills that enable them to access, process, communicate, and apply information effectively in diverse work environments (Awolowo, 2020). ICT encompasses computers, software, communication networks, and other digital technologies that facilitate the creation, storage, retrieval, and dissemination of information (Benjamin, 2000).

The widespread adoption of ICT has transformed teaching, learning, and research in higher institutions. Undergraduate students increasingly rely on internet resources, electronic databases, online journals, and digital communication tools to support their academic activities. Effective utilization of these resources, however, depends largely on students' ICT competencies, including information searching, document preparation, data management, electronic communication, and digital literacy (Tariq & Okoro, 2021). These competencies enable students to locate, evaluate, organize, and present information efficiently while promoting independent learning and lifelong education.

ICT skills also enhance students' academic performance by providing access to current information, reducing the time required for research, and facilitating collaboration beyond geographical boundaries (Ogunseye, 2021). Nevertheless, possessing basic computer knowledge alone is insufficient. Students require broader digital literacy skills to maximize the benefits of internet resources and other emerging technologies in higher education (Awolowo, 2020).

Despite the growing importance of ICT in education, evidence suggests that many Nigerian graduates still possess inadequate digital competencies required in today's workplace (Anyamene, Nwokolo, & Anyanwu, 2017). Although governments and educational institutions have invested in ICT infrastructure and promoted technology integration in teaching and learning, disparities in students' ICT skills remain a major concern. This situation is particularly important for Library and Information Science (LIS) students, whose future professional responsibilities depend heavily on the effective use of digital information resources and technologies.

Previous studies have emphasized the educational benefits of ICT integration, including improved learning outcomes, enhanced access to information, and increased student engagement (Dawam et al., 2009; UNESCO, 2022). However, limited empirical evidence exists regarding how ICT skills influence internet utilization among undergraduate Library and Information Science students in Nigerian polytechnics. This study therefore investigates the ICT skills possessed by undergraduate Library and Information Science students and examines how these skills influence their utilization of internet resources for academic purposes.

Information and Communication Technology (ICT) comprises digital technologies used for creating, storing, processing, retrieving, and communicating information. These technologies include computers, the Internet, multimedia applications, mobile devices, communication networks, and other electronic resources that support teaching, learning, and research (Yusuf,

2019). ICT has transformed educational practices by improving access to information, promoting interactive learning, and enhancing communication among students and lecturers.

Several scholars have described ICT from different perspectives. Bamdele (2006) views ICT as the application of computers, telecommunications, and Internet technologies to support human activities, while Ozoji and Jimoh (2007) define it as the electronic processing and dissemination of information using digital devices. Similarly, Ofulue (2007) emphasizes ICT as a collection of electronic technologies employed for instructional, administrative, and communication purposes. These definitions collectively indicate that ICT serves as a fundamental tool for knowledge creation, dissemination, and utilization.

In higher education, ICT availability is considered essential for effective instructional delivery. Adequate access to computers, Internet facilities, digital libraries, projectors, multimedia devices, and educational software enhances teaching effectiveness and supports students' independent learning (Sawyer, 2020). However, studies indicate that ICT facilities in many Nigerian tertiary institutions remain inadequate, limiting their effective utilization for teaching and learning (Bassey, Akuegwu, & Udida, 2009).

ICT utilization refers to the extent to which available digital technologies are employed for instructional, learning, communication, and research activities. The integration of ICT has shifted education from teacher-centred approaches to more interactive, learner-centred environments. It supports online learning, collaborative activities, virtual communication, information retrieval, and computer-assisted instruction (Apagu & Wakili, 2015).

Common ICT tools used in education include computers, Internet services, multimedia projectors, interactive software, electronic libraries, video conferencing, and mobile technologies. Effective utilization of these resources depends largely on their availability, users' digital competence, institutional support, and reliable electricity and Internet connectivity. Consequently, merely providing ICT facilities does not guarantee improved learning outcomes unless they are effectively utilized by both lecturers and students.

ICT accessibility refers to the ease with which users can obtain and effectively use ICT facilities and digital resources regardless of location or physical ability. Accessible ICT resources promote equal learning opportunities and enhance academic productivity by providing timely access to electronic information. International standards, particularly those developed by the World Wide Web Consortium (W3C), emphasize inclusive design to ensure that digital resources are usable by all categories of learners, including persons with disabilities.

In educational institutions, accessibility depends on the availability of functional ICT infrastructure, affordable Internet services, assistive technologies, and institutional policies that encourage equitable access to digital resources.

Despite the growing importance of ICT in education, several challenges hinder its effective utilization in Nigerian tertiary institutions. These include inadequate ICT infrastructure, unstable electricity supply, poor Internet connectivity, insufficient funding, high cost of ICT equipment, shortage of skilled personnel, and limited ICT competence among lecturers and students (Albirini, 2006; Anyamene, Nwokolo, & Anyanwu, 2017). Resistance to adopting technology-based teaching methods and inadequate institutional support further constrain ICT integration into teaching and learning.

Addressing these challenges requires sustained investment in ICT infrastructure, continuous staff training, improved Internet services, and supportive institutional policies that promote effective ICT integration in higher education.

Previous studies have extensively examined ICT availability, accessibility, and utilization in higher education. However, relatively few studies have specifically investigated how ICT resources are utilized for learning by Library and Information Science students in Nigerian tertiary institutions. This study addresses this gap by examining the availability, accessibility, and utilization of ICT resources for learning among Library and Information Science students.

Statement of the Problem

Despite the increasing integration of Information and Communication Technology (ICT) into higher education, concerns remain regarding the availability, accessibility, and effective utilization of ICT facilities by students in Nigerian polytechnics. Although ICT has transformed information access, communication, and learning, many students continue to encounter challenges such as inadequate ICT infrastructure, limited access to digital resources, and insufficient ICT competencies. These challenges may hinder effective learning, particularly among Library and Information Science (LIS) students whose academic and professional activities depend heavily on digital information resources. Furthermore, empirical studies examining ICT utilization among LIS students in South-South Nigerian polytechnics remain limited. This study therefore investigates the availability, accessibility, utilization, and challenges associated with ICT use among Library and Information Science students in Auchi Polytechnic, Edo State, and Delta State Polytechnic, Ogwashi-Uku.

Objectives of the Study

The study aimed to examine the utilization of ICT facilities for learning among Library and Information Science students in selected polytechnics in South-South Nigeria. Specifically, the study sought to:

1. determine the ICT facilities available to Library and Information Science students;
2. examine students' level of satisfaction with the available ICT facilities;
3. determine the extent of ICT utilization for learning;
4. assess students' level of access to ICT facilities; and
5. identify the challenges associated with ICT utilization among the students.

Research Questions

The study was guided by the following research questions:

1. What ICT facilities are available to Library and Information Science students in the selected polytechnics?
2. What is the level of students' satisfaction with the available ICT facilities?
3. To what extent do Library and Information Science students utilize ICT facilities for learning?
4. What is the level of students' access to ICT facilities?

5. What challenges do students encounter in the utilization of ICT facilities?

Methodology

This study adopted a descriptive survey research design to investigate the use of Information and Communication Technology (ICT) facilities among Library and Information Science (LIS) students in selected polytechnics in Nigeria. The descriptive survey design was considered appropriate because it enables the collection of data from a representative sample and facilitates the description of existing conditions, opinions, and practices without manipulating the study variables. The target population comprised all undergraduate students in the Department of Library and Information Science at Auchi Polytechnic and Delta State Polytechnic, Ogwashi-Uku. The total population of the study consists of 420 library and information science students. A simple random sampling technique was employed to ensure that every student had an equal opportunity to participate in the study. A total of 200 students were selected. Data were collected using a structured questionnaire developed by the researcher. The questionnaire consisted of two sections. Section A elicited respondents' demographic information, while Section B contained items addressing the availability, accessibility, utilization, satisfaction, and challenges associated with ICT facilities in the selected polytechnic libraries. The questionnaire was subjected to face and content validation by experts in Library and Information Science and Educational Research at Ambrose Alli University. Their observations and recommendations were incorporated into the final version of the instrument to ensure clarity, relevance, and adequacy of the items. The researcher personally administered the questionnaires to the selected respondents with the assistance of departmental representatives. Participants were informed of the purpose of the study and assured of confidentiality. The completed questionnaires were collected immediately after completion to maximize the response rate. The data collected were coded and analyzed using descriptive statistics, including frequency counts, percentages, mean scores, and standard deviations. Frequency counts and percentages were used to summarize respondents' demographic characteristics and responses to dichotomous items, while mean and standard deviation were used to determine the extent of respondents' satisfaction and access to ICT facilities. The results were presented in tables for ease of interpretation.

Data Analysis

Research Question 1: Availability of ICT Facilities

ICT Facility	Available n (%)	Not Available n (%)
Computer	153 (100.0)	0 (0.0)
Internet connection	153 (100.0)	0 (0.0)
Printer	153 (100.0)	0 (0.0)
Photocopier	153 (100.0)	0 (0.0)
Fax machine	21 (13.7)	132 (86.3)
Scanner	141 (92.2)	12 (7.8)
Digital scanner	102 (66.7)	51 (33.3)
Camera	97 (63.4)	56 (36.6)
Reprographic machine	132 (86.3)	21 (13.7)
Projector	83 (54.2)	70 (45.8)
Slide projector	102 (66.7)	51 (33.3)
CD-ROM	128 (83.7)	25 (16.3)
OPAC	92 (60.1)	61 (39.9)

Satellite dish	89 (58.2)	64 (41.8)
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Table 1: Availability of ICT Facilities

Computers, internet connections, printers, and photocopiers were reported as available by all respondents (100%). Fax machines were the least available ICT facility (13.7%).

Research Question 2: Students' Satisfaction with ICT Facilities

ICT Facility	Mean (M)	SD
Computer	4.06	0.81
Internet connection	4.39	0.87
Printer	4.62	0.92
Photocopier	4.54	0.90
Fax machine	2.27	0.45
Scanner	3.02	0.60
Digital scanner	3.62	0.72
Camera	4.56	0.91
Reprographic machine	4.04	0.80
Projector	3.10	0.62
Slide projector	3.75	0.75
Flash	4.67	0.93
OPAC	3.99	0.79
CD Rom	3.77	0.75
Grand Mean	3.91	0.73

Table 2: Students' Satisfaction with ICT Facilities

The highest satisfaction rating was recorded for flash (M = 4.67), while fax machine (M = 2.27) received the lowest rating. The grand mean of 3.91 indicates an overall high level of satisfaction with ICT facilities.

Research Question 3: Utilization of ICT Facilities for Learning

Purpose of Use	Yes n (%)	No n (%)
Personal study	153 (100.0)	0 (0.0)
Assignment	153 (100.0)	0 (0.0)
Social media	138 (90.2)	15 (9.8)
Research work	125 (81.7)	28 (18.3)
Leisure	66 (43.1)	87 (56.9)
Project work	145 (94.8)	8 (5.2)
Preparation of notes	19 (12.4)	134 (87.6)

Table 3: Utilization of ICT Facilities for Learning

ICT facilities were most frequently used for personal study, assignments, and project work, while preparation of notes was the least reported use.

Research Question 4: Extent of Access to ICT Facilities

ICT Facility	Mean (M)	SD
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Computer	4.06	0.81
Internet connection	4.39	0.87
Printer	4.62	0.92
Photocopier	4.69	0.93
Fax machine	2.27	0.45
Scanner	3.03	0.60
Digital scanner	3.62	0.72
Camera	4.63	0.91
Reprographic machine	4.04	0.80
Projector	3.10	0.62
Slide projector	3.75	0.75
Flash	4.67	0.93
OPAC	3.99	0.79
Satellite dish	3.77	0.75
Grand Mean	3.97	0.79

Table 4: Extent of Access to ICT Facilities

Photocopier (M = 4.69), Flash (M = 4.67), and camera (M = 4.63) recorded the highest access ratings, whereas fax machine (M = 2.27) recorded the lowest. The grand mean of 3.97 indicates a generally high level of access to ICT facilities.

Research Question 5: Challenges Facing the Use of ICT Facilities

Challenge	Strongly Agree n (%)	Agree n (%)
Poor knowledge of usability	103 (67.3)	50 (32.7)
Technophobia (fear of technology)	131 (85.6)	22 (14.4)
Attitude of library staff	88 (57.5)	65 (42.5)
Lack of awareness of ICT facilities	19 (12.4)	134 (87.6)
Insufficient ICT facilities	43 (28.1)	110 (71.9)
System breakdown	129 (84.3)	24 (15.7)

Table 5: Challenges Facing the Use of ICT Facilities

The major challenges identified were technophobia, system breakdowns, poor knowledge of ICT usability, insufficient ICT facilities, and lack of awareness of available ICT resources.

Discussion

The findings indicate that core ICT facilities such as computers, internet connections, printers, and photocopiers are widely available in the selected polytechnic libraries. This supports previous studies that reported the increasing integration of ICT infrastructure into academic libraries in Nigeria.

Respondents also reported high levels of satisfaction and access to commonly used ICT facilities, particularly printers, photocopiers, internet services, and flash resources. The relatively low ratings for fax machines and projectors suggest that these facilities are either outdated, inadequate, or less relevant to current academic activities.

ICT facilities were primarily utilized for personal study, assignment completion, research work, and project preparation, demonstrating the important role of digital resources in

supporting students' academic activities. However, the limited use of ICT for note preparation indicates that many students may still rely heavily on traditional methods for organizing learning materials.

The study further revealed that several barriers hinder optimal ICT utilization. These include technophobia, inadequate user skills, system failures, insufficient ICT facilities, and unsatisfactory staff attitudes. These findings are consistent with earlier studies that identified inadequate ICT support systems and limited digital competencies as major constraints to effective ICT use in Nigerian higher institutions.

Conclusion

This study established that ICT facilities are available and generally accessible to Library and Information Science students in the selected polytechnics. The facilities are widely used for academic purposes, particularly for personal study, assignments, research, and project work. Nevertheless, challenges such as technophobia, inadequate ICT skills, insufficient facilities, system breakdowns, and limited awareness continue to constrain effective utilization. Addressing these challenges is essential for maximizing the educational benefits of ICT resources in academic libraries.

Recommendations

- Management of the selected polytechnics should provide additional ICT facilities to meet the growing needs of students.
- Reliable internet connectivity and regular maintenance of ICT infrastructure should be prioritized.
- Continuous ICT literacy training should be organized for students to improve their competence and confidence in using digital resources.
- Library staff should adopt more user-friendly and supportive attitudes toward students seeking assistance.
- Awareness campaigns should be conducted regularly to inform students about available ICT facilities and services.
- Mechanisms for reducing system breakdowns and ensuring prompt technical support should be established.

These measures would enhance the effective utilization of ICT facilities and improve learning outcomes among Library and Information Science students in the selected polytechnics.

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