

UTILISATION OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR STORAGE AND RETRIEVAL OF STUDENTS' ACADEMIC RECORDS IN UNIVERSITY LIBRARIES IN BENUE STATE, NIGERIA

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Abstract

This study examined Utilization of Information and Communication Technology for storage and retrieval of students' academic records in University Libraries in Benue State, Nigeria. Three null hypotheses guided the study. Descriptive survey design was adopted for the study. The population for this study 39 academic library staff from three universities in Benue State namely; Rev. Fr. Moses Orshio Adasu University Makurdi, Joseph Sarwuan Taraka Univeristy Makurdi and University of Mkar, Mkar. The entire population of 39 academic library staff was used as sample size. Data was analysed using mean, standard deviation and analysis of variance. Findings revealed that computers, video ICTs, micro fiche reader, storage facilities (flash drives, floppy disks, optical disks, servers, printers, compact disk and memory (CD ROM) were available ICTs. It was found that video CDs, storage facilities (flash drives, floppy disks), printers, compact disk and memory (CD ROM) were highly utilized in the university libraries. Finally, the study found that inadequate ITC powered facilities, unstable electricity supply, insufficient technical knowledge and skills on the operation ICT equipment, unreliable and poor internet services and lack of funds to procure ICTs were major challenges of utilizing ICTs. The study concluded that that ICTs

are available in the university libraries. ICTs are not fully utilized due to prevailing challenges in the universities. It was recommended among others that university administrations should ensure all ICTs relevant for storage and retrieval of students' academic records are made available in the libraries.

Keywords: ICT, Storage and Retrieval, and Students' Academic Records Libraries

Introduction

University libraries are established with the aim to support the teaching, learning, and research functions of their parent institutions. Libraries academic "heart" of the university, providing curated information resources, academic space, and services to students, faculty, and researchers to advance knowledge and education. By serving as archives of student research, serving as repositories for intellectual output, and offering digital tools for monitoring academic achievement, university libraries are essential to the management of student academic records. University libraries and their associated archives store and ensure retrieval of various types of student academic records, ranging from active files used for administrative purposes to historical records preserved for posterity.

In the context of this study, students' academic records are the comprehensive, official records of a student's educational history, including enrollment dates, courses taken, grades, GPA, and degrees obtained, are called student academic records. These records, which are frequently kept in both paper and computer versions by educational institutions, are crucial for scholarship applications, employment verification, transfer applications, and legal documentation. Academic records management occupies a strategic position in the efficient and effective management of the university system. In fact, it is central in the administration of institutions of learning because it documents the planning and

implementation of appropriate course of services allowing proper monitoring of work. In the conventional paper based organizations such as the universities, paper continues to be viewed as the material for records in the administrative documentations (Igwoke, 2008 in Akor & Udens, 2013). These records are crucial for tracking a student's academic progress, validating their qualifications, and supporting institutional accountability. The library also keeps track of a student's academic records, including theses, dissertations, and project reports. Generally, record keeping must be guided by some level of confidentiality, proper maintenance, security, preservation of the content, context and for a long time (Iwhiwhu, 2007 in Luyormbya & Ndagire, 2020). These records are expected to be properly managed with the aid of information and communication technology (ICT).

Information and Communication Technology (ICT) refers to the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and telecommunications. Pratt et al. (2025) assert that ICT is the infrastructure and components that enable modern computing. ICT includes wireless network-powered mobile infrastructures and the internet. Alongside today's cutting-edge ICT components like smartphones, artificial intelligence (AI), and robotics, it also incorporates outdated technologies like landline telephone, radio, television, and broadcast. ICT also includes cloud computing services, video conferencing and collaboration tools, unified communications systems, mobile communication networks, the internet, the internet of things (IoT), the metaverse, and social media. The ICT world also includes more recent technologies like 5G, 6G, Web3, and quantum computing (Pratt et al., 2025).

ICT facilities are used to store students' records such as results and student transcripts. A study by Muhammad (2024) indicated that the ICTs and applications used for efficient record management are documents management systems, online portal, spreadsheet software, virtual learning management systems and library automation software. Other ICTs are Library Management Systems (LMS/ILS), RFID technology, OPAC, smart cards, and digital repository software like DSpace are examples of ICT systems used in university libraries to manage student academic records. By automating user authentication, categorization, and circulation, these solutions increase productivity and facilitate access to digital and academic data. Using Information and Communication Technology (ICT) is essential for university libraries to transition from traditional repositories to active, digital-centric learning hubs. ICT fully achieves the aims of university libraries supporting good academic records storage and retrieval.

It has observed that there is poor nature of student academic records storage and retrieval in many university libraries, particularly in Benue State. These libraries are characterized by a reliance on manual systems, where most of the students' records are kept on paper. The ICTs for storing and retrieving student academic records in the universities is heavily skewed toward online admissions, registration, and fee payments, rather than comprehensive electronic, long-term record archiving, which remains partially manual. This leads to slow, unreliable, and sometimes insecure access to crucial student data. It is against this background that the study is designed to examine Information and Communication Technology (ICT) as a shelter for storage and retrieval of students' academic records in University Libraries in Benue State, Nigeria.

Research Questions

1. What is the level of availability of ICTs for storage and retrieval of students' academic records in university libraries?
2. What is the extent of utilization of ICTs for storage and retrieval of students' academic records in university libraries?
3. Identify the challenges affecting availability and utilization of ICTs for storage and retrieval of students' academic records in university libraries?

Hypotheses

1. There is no significant difference between the mean responses of academic library staff of the three universities on the level of availability of ICTs for storage and retrieval of students' academic records
2. There is no significant difference between the mean responses of academic library staff of the three universities on the extent of utilization of ICTs for storage and retrieval of students' academic records
3. There is no significant difference between the mean responses of academic library staff of the three universities on the challenges affecting availability and utilization of ICTs for storage and retrieval of students' academic records

Literature Review

Level of Availability of ICTs for Storage and Retrieval of Students' Academic Records

In a report by Atah *et al.* (2023), digital record keeping is widely available and accessible by students in universities. Mesagan, *et al.* (2022) claimed that ICTs are available and accessible for usage in the libraries. Similarly, findings by show that ICTs are

available and accessible to records managers as they use it to store students records such as the students results (summary sheets) 100% and student transcripts. The most readily available ICT resources in the libraries were computers, and Online Public Access Catalogue (OPAC). Seidu et al. (2022) revealed that ICT facilities available for managing students' records in the school include computers, printers, handsets, photocopiers, and diskettes.

Extent of Utilization of ICTs for Storage and Retrieval of Students' Academic Records

A study conducted by Mesagan, *et al.* (2022) revealed that university libraries use ICTs for storage and retrieval of students' academic records. Afriyie *et al.* (2020) reported high ICT integration in processing, sending, storing, retrieving, receiving and recovering records. It was established that the institution does not have records management policy and records backup policy and therefore records managers cannot dispose non-vital records. Oladokun, et al. (2022) ICTs are efficiently used in schools due to prevailing challenges. Stressing further, Bentil (2025) noted that the extent of usage ICTs is limited to few.

Challenges affecting Availability and Utilization of ICTs for Storage and Retrieval of Students' Academic Records

According to Oladokun et al. (2022), insufficient knowledge and skills on how to operate ICT equipment, ignorance of the advantages of ICT devices, administrators' reluctance to use ICT gadgets, inadequate physical facilities/equipment, sporadic disruption of electricity supply and inadequate funds to provide ICT devices were challenges in using ICT to manage students' academic records. Accuracy, and security, widespread adoption is hindered by limited training, poor infrastructure, and high costs.

Also, Afriyie *et al.* (2020) identified operational challenges such as virus infection; lack of dedicated backup storage facilities, poor and unreliable internet services, information loss, and lack of ICT equipment replacement policy as basic challenges affecting use of ICT in schools.

Methodology

This study was conducted using Joseph Sarwuan Tarka University Makurdi, Benue State University Makurdi and University of Mkar, Mkar, Benue State. The study adopted a descriptive survey design. The population for this study 39 academic library staff from the three universities in Benue State. There 23 academic library staff in Rev. Fr. Moses Orshio Adasu University Makurdi, 13 in Joseph Sarwuan Taraka Univeristy Makurdi and 3 in University of Mkar, Mkar. The entire population of 39 academic library staff was used as sample size. Instrument for the study was a structured questionnaire titled 'SRICTSRSAR'. The questionnaire was validated by two experts; one from the Department of Educational Foundations and General Studies Benue State University Makurdi and the other one in the Department of Computer Science, Joseph Sarwuan Tarka University Makurdi. In order to ascertain the reliability of the instrument, it was trial-tested and the coefficient of 0.90 was obtained. The data collected was analysed using arithmetic mean, standard deviation and analysis of variance.

Results and Discussion

Research Question 1:

What is the level of availability of ICTs for storage and retrieval t of students' academic records in university libraries?

Table 1: Mean and Standard Deviation on the Level of Availability of ICTs for Storage and Retrieval of Students' Academic Records in University Libraries (N = 39)

S/N	ICT Tool	Mean	Std. Dev.	Remarks
1	Computers	3.33	0.98	Available
2	Internet	2.26	1.04	Not Available
3	Dropbox	2.46	0.94	Not Available
4	Microsoft oneDrive/sharedPoint	1.69	1.08	Not Available
5	V/sat	2.21	1.19	Not Available
6	Video CDs	3.69	0.61	Available
7	Micro fiche reader	3.56	0.64	Available
8	Video machine	1.79	0.95	Not Available
9	Storage facilities (flash drives, floppy disks)	3.79	0.41	Available
10	Online public access catalog (OPAC)	1.71	0.92	Not Available
11	Optical disks	3.92	0.48	Available
12	Servers	3.69	0.61	Available
13	Printers	3.08	1.13	Available
14	Google drive	2.10	1.05	Not Available
15	Compact Disk	3.13	0.98	Available
16	Memory (CD ROM)	2.94	1.21	Available
Grand Mean		2.84	0.89	

Result in Table 1 shows that out of 16 ICTs used for storage and retrieval students' academic records, 10 had their mean values ranged from 2.94 to 3.92 and were above the benchmark of 2.50. this implies that the 10 tools (computers, video CDs, micro fiche reader, storage facilities (flash drives, floppy disks, optical disks, servers, printers, compact disk and memory (CD ROM)) were available in the university libraries.

Research Question 2:

What is the extent of utilization of ICTs for storage and retrieval students' academic records in university libraries?

Table 2: Mean and Standard Deviation on the Extent of Utilization of ICTs for Storage and Retrieval of Students' Academic Records in University Libraries (N = 39)

S/N	ICT Tool	Mean	Std. Dev.	Remarks
1	Computers	2.18	0.99	Not Utilized
2	Internet	2.08	0.77	Not Utilized

3	Dropbox	2.18	1.05	Not Utilized
4	Microsoft oneDrive/sharedPoint	2.00	0.92	Not Utilized
5	V/sat	2.05	0.83	Not Utilized
6	Video CDs	3.23	0.99	Utilized
7	Micro fiche reader	1.67	0.89	Not Utilized
8	Video machine	1.74	0.91	Not Utilized
9	Storage facilities (flash drives, floppy disks)	3.31	0.86	Utilized
10	Online public access catalog (OPAC)	2.15	1.13	Not Utilized
11	Optical disks	2.15	1.23	Not Utilized
12	Printers	2.92	1.35	Utilized
13	Servers	2.08	0.98	Not Utilized
14	Google drive	1.77	0.99	Not Utilized
15	Compact Disk	2.95	1.05	Utilized
16	Memory (CD ROM)	2.72	0.86	Utilized
Grand Mean		2.29	0.99	

Result in Table 2 shows that out of 16 ICTs available for storage and retrieval students' academic records, only 5 had their mean values ranged from 2.72 to 3.31. The remaining 11 items had their mean values ranged from 1.67 to 2.18 which were below the benchmark of 2.50. This means that only 5 ICTs (Video CDs, Storage facilities (flash drives, floppy disks), Printers, Compact Disk and Memory (CD ROM)) are highly utilized in the university libraries.

Research Question 3:

Identify the challenges affecting availability and utilization of ICTs for storage and retrieval of students' academic records in university libraries?

Table 3: Mean and Standard Deviation on the Challenges affecting Availability and Utilization of ICTs for Storage and Retrieval of Students' Academic Records in University Libraries (N = 39)

S/N	ICT Tool	Mean	Std. Dev.	Remarks
1	Insufficient technical knowledge and skills on the operation ICT equipment	3.23	0.93	Agree
2	Conserved attitude among library staff	2.74	1.14	Agree
3	Inadequate ITC powered facilities	3.38	0.91	Agree
4	Unstable electricity supply	3.33	0.84	Agree
5	Unreliable and poor internet services	3.13	1.23	Agree
6	Lack of funds to procure ICTs	3.13	1.23	Agree
7	Inadequate security to protect ICT devices,	2.56	1.14	Agree
8	Poor/inadequate training of library staff	2.77	1.22	Agree
Grand Mean		3.04	1.08	

Result in Table 3 shows that all the 8 items had their mean values ranged from 2.56 to 3.38 which were above the benchmark of 2.50. This means that all the 8 items are challenges affecting availability and utilization of ICTs in the university libraries.

Table 4: ANOVA Result on the Availability of ICTs for Storage and Retrieval of Students' Academic Records in University Libraries

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Remarks
Between Groups	1.877	2	0.939	10.802	.000	Rejected
Within Groups	3.128	36	0.087			
Total	5.005	38				

Result in Table 4 shows an F - value of 10.802 with a p - value of 0.000 which is less than a pre-determined value of 0.05 at 38 degree of freedom. This result is a statistically significant. This shows that there is a significant difference between the mean responses of academic library staff of the three universities on the level of availability of ICTs for storage and retrieval of students' academic records. This finding affirms a report by Mesagan, *et al.* (2022) who claimed that ICTs are available and accessible for usage in the libraries. Also,

the findings aligns with Seidu et al. (2022) which revealed that ICT facilities available for managing students' records in the school include computers, printers, handsets, photocopiers, and diskettes.

Table 5: ANOVA Result on the Extent of Utilization of ICTs for Storage and Retrieval of Students' Academic Records in University Libraries

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Remarks
Between Groups	0.827	2	0.414	2.250	.120	Not Rejected
Within Groups	6.617	36	0.184			
Total	7.444	38				

Result in Table 5 shows an F – value of 2.250 with a p - value of 0.120 which is greater than a pre-determined value of 0.05 at 38 degree of freedom. This result is not statistically significant. This shows that there is no significant difference between the mean responses of academic library staff of the three universities on the extent of utilization of ICTs for storage and retrieval of students' academic records. The finding agrees with Afriyie *et al.* (2020) who reported high ICT integration in processing, sending, storing, retrieving, receiving and recovering records. However, the finding disagree with Oladokun, et al. (2022) who reported that ICTs are efficiently used in schools due to prevailing challenges. Also, the finding disagrees with a report by Bentil (2025) which found that the extent of usage ICTs is limited to few university libraries.

Table 6: ANOVA Result on the Challenges affecting Availability and Utilization of ICTs for Storage and Retrieval of Students' Academic Records in University Libraries

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Remarks
Between Groups	3.606	2	1.803	3.871	.030	Not Rejected
Within Groups	16.767	36	0.466			
Total	20.373	38				

Result in Table 6 shows an F – value of 3.871 with a p - value of 0.030 which is less than a pre-determined value of 0.05 at 38 degree of freedom. This result is not statistically significant. This shows that there is a significant difference between the mean responses of academic library staff of the three universities on the challenges affecting availability and utilization of ICTs for storage and retrieval of students’ academic records. The findings collaborates a report by Oladokun et al. (2022) which revealed that insufficient knowledge and skills on how to operate ICT equipment, ignorance of the advantages of ICT devices, administrators’ reluctance to use ICT gadgets, inadequate physical facilities/equipment, sporadic disruption of electricity supply and inadequate funds to provide ICT devices were challenges in using ICT to manage students’ academic records. Also, the finding agrees with Afriyie *et al.* (2020) who identified virus infection; lack of dedicated backup storage facilities, poor and unreliable internet services, information loss, and lack of ICT equipment replacement policy as basic challenges affecting use of ICTs in schools.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. The university administrations should ensure all ICTs relevant for storage and retrieval of students’ academic records are made available in the libraries.
2. The university librarians should ensure that all available ITCs in the libraries are fully utilized for storage and retrieval of students’ academic records.
3. University administration should organize training workshops for academic library staff on how to use ICTs for storage and retrieval of students’ academic records

4. The university administrations should ensure that qualified personnel with good technical knowledge and skills on the operation ICT equipment are employed into ICT division of the libraries.

Conclusion

Good archive of student academic records is crucial for all students. The process helps in maintaining operational efficiency, ensuring legal compliance, and supporting the long-term educational and professional success of students. This study concludes that ICTs are available in the university libraries. However, the ICTs are not fully utilized due to prevailing challenges in the universities.

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