

Managing Knowledge in the Digital Age: Persuasive Case of ICT Dexterity of Librarians in State-owned University Libraries in Rivers State

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Abstract

This study examined managing knowledge in the digital age: the persuasive case of ICT dexterity of librarians in State-owned University Libraries in Rivers State, focusing on librarians' proficiency, availability of ICT facilities, and their dexterity in applying ICT tools for information resource management. A descriptive research design was adopted using a census sample of 21 professional librarians from Rivers State University Library and Dame Patience Jonathan Automated Library. Data were collected with a 24-item questionnaire titled Knowledge Management by Librarians in the Digital Age Questionnaire (KMLDAQ) and analyzed using mean statistics with a criterion mean of 2.50. Findings revealed that librarians possessed moderate ICT proficiencies, particularly in internet searches, word processing, and online resource acquisition, but lacked advanced skills in database management and library application software. Results further showed moderate availability of basic ICT facilities such as computers, scanners, and internet connectivity, but inadequate advanced tools like barcode readers. The study concluded that ICT remains pivotal to effective library operations and recommended continuous ICT training and adequate funding to enhance digital resource management and service delivery efficiency.

Keywords: Librarians, ICT Dexterity, Knowledge, Management, Information Resources

Introduction

Information and Communication Technology (ICT) is one of the ultimate discoveries of mankind which played extraordinary roles in changing the landscape of man and other establishments around the world of which libraries are not excused. The prominence of information technology in the library cannot be overemphasized as a result of the huge impact it has made in the library. ICT provides effective ways in executing information related activities. It provides convenience in terms of usage for the users, accuracy and preciseness of information. Emmanuel et al (2024) are of the view that the use of ICT encourages diversity and built a foundation for continuous innovative learning in the academic environments, it also reinterprets traditional library skills, and explore new ways of putting these skills to work through the effective use of ICT. The effectiveness of resources management in this century largely depends on ICT, such that libraries with necessary infrastructural facilities can tap the ICT proficiencies of their staff for appropriate resources management.

It remains interestingly true that the introduction of information technology to the library brought about increase in service delivery and information dissemination. Hence, one can say that the emergence of information technology made the library more effective. Fyneman and Oporum (2025) avows that academic library has to employ ICT facilities in the management of its resources for effective service delivery to its clienteles. Information resources are information carriers or materials bearing information which enable the library to fulfill its goal of meeting the information needs of its users. The resources in the library are obtainable in four broad formats consisting of print, non-print, audio-visual and electronic resources. These resources have been described by scholars as information carriers. Wiche and Oporum (2022) posits that the various library materials

in use are collectively regarded as information carriers because they bear information or ideas that could be found useful to information seekers in satisfying their information needs. Acquiring resources in the library is one thing and managing them for effective service delivery is another. It is therefore necessary for the library to manage its information resources as this will foster effective service delivery.

Statement of the Problem

The sole aim of the library is to provide services that are capable of satisfying the information needs of its users and in doing this, diverse information resources are required. Hence, the library selects, acquires and disseminates this resources. Acquiring information resources in the library is one thing and managing them for effective service delivery is another. Effective management of information resources is very crucial as it aids in the achievement of library objectives. It is true that ICT facilities could make tangible contributions in the management of information resources in academic libraries. With the emergence of ICT in libraries, librarians are supposed to be at the forefront of these technologies. Observation has shown that most academic librarians and libraries in Nigeria lack the required ICT skills and facilities for proper information resources management. It is in line with the above that the paper examined the management of knowledge in the digital age: persuasive case of ICT dexterity of librarians State-owned University Libraries in Rivers State.

Aim and Objectives

The aim of this study was to examine the management of knowledge by librarians. Precisely, the study sought to;

1. Identify the types of ICT proficiencies possessed by librarians in State-owned University Libraries in Rivers State.

2. Find out the types of ICT facilities available in State-owned University Libraries in Rivers State.
3. Examine the dexterity of librarians in the application of ICT facilities for the management of information resources in State-owned University Libraries in Rivers State.

Research Questions

The following research questions were formulated to guide the study;

1. What are the types of ICT proficiencies possessed by librarians in State-owned University Libraries in Rivers State?
2. What are the types of ICT facilities available in State-owned University Libraries in Rivers State.?
3. What are the dexterity of librarians in the application of ICT facilities for the management of information resources in State-owned University Libraries in Rivers State.?

Review of Literature

Academic Libraries

The academic library is an integrated part of any academic institution. It is the focal point or the heart of educational research. Academic libraries are libraries attached, found or established in post-secondary institutions. These post-secondary institutions include; Universities, Polytechnics, Colleges of Education and other tertiary institutions. According to Oyegunle (2013), academic libraries are information centres established in support of the mission of their parent institutions to generate and equip people with knowledge in order to serve the society and advance the well-being of mankind. An academic library is the library that serves institutions of higher learning with information resources for supportive teaching, research and learning activities towards the realisation of the objectives of the institution (Obi et al., 2020). The sole aim of the academic

library is to support teaching, learning and research. The post-secondary institutions are ultimately established for teaching, learning and research. Hence, academic libraries ensures that the educational objectives of the parent institution is attained through the provision of pertinent information resources capable of meeting the teaching, learning, research and the information needs of the students, staff and the user community.

Remarkably, academic libraries are primarily established to support the curriculum and to provide literature support to the programmes of their parent institution. Academic libraries are established by institutions of higher learning, such as Universities, Polytechnics, Colleges as well as Mono-technics; they are located in a quiet environment within the premises of academic institution. Men and Isreal (2017) mentioned that the main function of academic library is to serve as an auxiliary to its parent institution in carrying out its objectives. The academic library is an important intellectual resource of an academic community, as it helps the university to fulfill the curriculum requirements and promote reading culture and research. These libraries are seen as the hub of academic activities of a higher institution of learning. They are established in order to help their parent institution, achieve their goals of teaching and learning, research and community services. Academic libraries are seen as the heart or nerve centres of institutions of higher learning where all academic activities revolves.

Information Resources

Information resources are information carriers or materials bearing information which enable the library to fulfill its goal of meeting the information needs of its users. The resources in the library are obtainable in four broad formats consisting of print, non-print, audio-visual and electronic resources. Wiche and Oporum (2022) expressed that the various library materials in use are collectively regarded as information carriers because they bear information or ideas that could be

found useful to information seekers in satisfying their information needs. Mmejim and Omehia (2020), mentioned that information resources contain ideas, thoughts and researches carried out by great scholars, philosophers, librarians, inventors as well as historians for the betterment of the society and their ideas and thoughts when documented serves as great cultural and national heritage. Whong and Ezra (2016) postulated that library information resources include not only traditional print-on-paper media like books, journals, newspapers, and maps, but also audiovisual materials like cinematograph film records, audiocassettes, video cassettes, projectors, microfiches, Compact Disk Read Only Memory (CD-ROM), computer software, online databases, electronic books and e-journals and other media via the internet.

Information and Communication Technology in Libraries

The introduction of ICT to library operations changed many activities of the library, ranging from the ways information are been gathered, processed and disseminated which were done manually but now automated. Library staff are expected to acquire ICT proficiencies that will enable them to undertake new roles as expected by the new environment in which they now function. ICT has prominently enhanced library and information resources management. Today, library services and access to information resources is greatly improved by the use of ICT. Omosor (2014) stated that with ICT library management and services are taking on new meanings and constructs. ICT has provided libraries especially academic libraries with new opportunities to enhance their resource management system. Fyneman and Oporum (2025) avows that it could also be seen as any technological infrastructure that can be used for gathering, processing, storing and disseminating information. ICT involves the use of systems (computers and telecommunications) for storing, retrieving and sending information.

ICT facilities are technologies that enable us to record, store, process, retrieve, transmit and receive information. These technologies includes: computers, micrographics, facsimile transmission, telecommunication as well as micro-electronics. Echem et al. (2024) contends with the fact that ICT has prominently influenced library operations such that storage, processing and dissemination of information are been coordinated by library automation. With the above assertion, academic libraries in Nigeria are now witnessing a drastic amalgamation of ICT facilities into library practices and operations. Oyedokun et al. (2018) are of the view that this development calls on librarians to assume a new role and acquires skills and proficiencies relevant to today information handling and management as demanded by today's knowledge society and users' preference for remote access to information. ICT tools are been used in libraries to manage library more competently and as well tailor users' information need more meritoriously.

ICT Dexterities of Librarians

ICT proficiency denotes the overall know-how (knowledge and skills) necessary to generate, store, organize, evaluate, retrieve and disseminate information in electronic form or any other format. Oyedokun et al. (2018) defined the ICT proficiency of library staff to be a combination of skills, knowledge, and attitude related to library technologies which are essential to the success of parent institutions, personal performances and capacity building. Thus, librarians need to continuously update their proficiency to be able to function excellently in an ICT environment especially in academic libraries. Library staff need skills that will enable them use ICT for management of library and information resources. . Echem et al. (2024) affirmed that library staff are expected to possess the following ICT proficiencies; operating system, packages and programming languages, web awareness, technical skills, knowledge of online services, technical skills, elementary programming languages skills, project management skills, CD-ROMs/OPAC search skills, web

and other electronic databases search skills, database management, web development, management of multiple media, metadata skills, word processing skills, spread sheet skills, database skills, electronic presentation skills, web navigation skills, website design skills as well as e-mail, management skills (Emmanuel et al., 2024). There is need for library staff to be appropriately armed with adequate ICT proficiencies that will assist them in handling users' information needs and management of information resources in the library.

Research Methodology

A descriptive research design was used in the study. A 24 items questionnaire titled: Knowledge Management by Librarians in the Digital Age Questionnaire (KMLDAQ) was used to gather information from librarians. The study population was selected from among the 21 professional librarians employed at Rivers State University Library and Dame Patience Jonathan Automated Library in Rivers State. Since the population is not large, the study used the census sampling technique to use the 21 professional librarians as sample size. Mean was used to answer the research questions. Data for the study were collected by the researchers. Mean was used to answer the research questions. Items with the Criterion Mean of 2.50 and above were accepted while items below the Criterion Mean of 2.50 were rejected.

Results

Table 1: Mean scores of ICT proficiencies possessed by librarians

S/N	Item	X	CM	Remark
1.	Internet search proficiency	2.78	2.50	Agree
2.	Spread sheet proficiency	2.58	2.50	Agree
3.	Online book selection/acquisition proficiency	2.81	2.50	Agree
4.	Word processing (Microsoft word) proficiency	2.70	2.50	Agree
5.	Electronic presentation (Power point) proficiency	2.55	2.50	Agree
6.	Uploading/downloading of document	2.41	2.50	Disagree

7.	Database management proficiency	2.21	2.50	Disagree
8.	Scanning of document	2.52	2.50	Agree

Table 1 shows the mean scores of ICT proficiencies possessed by librarians. The results indicate that the respondents agreed that they possess proficiency in several ICT-related tasks, including Internet search proficiency ($\bar{x} = 2.78$), spreadsheet proficiency ($\bar{x} = 2.58$), online book selection/acquisition proficiency ($\bar{x} = 2.81$), word processing using Microsoft Word ($\bar{x} = 2.70$), electronic presentation using PowerPoint ($\bar{x} = 2.55$), and scanning of documents ($\bar{x} = 2.52$). However, they disagreed on their proficiency in database management ($\bar{x} = 2.21$) and uploading/downloading of documents ($\bar{x} = 2.41$). The mean scores, which range between 2.52 and 2.81, suggest that librarians generally possess moderate ICT proficiency, especially in routine computer applications and online operations. Their relatively higher competence in Internet searching and online book selection/acquisition indicates familiarity with digital information retrieval and collection development tools. Conversely, the lower mean score in database management ($\bar{x} = 2.21$) reflects a skill gap in more advanced ICT functions that require specialized technical knowledge.

Table 2: Mean scores of available ICT facilities

S/N	Item	<i>X</i>	CM	Remark
9.	Computers	2.78	2.50	Agree
10.	Photocopiers	2.56	2.50	Agree
11.	Scanners	2.67	2.50	Agree
12.	Barcode readers	2.01	2.50	Disagree
13.	Functional digital cameras	2.33	2.50	Disagree
14.	CDs/DVDs	2.51	2.51	Agree
15.	Internet facilities	2.74	2.50	Agree
17.	Printers	2.87	2.50	Agree

Table 2 presents the mean scores of available ICT facilities in the libraries. The results show that the respondents agreed that several ICT facilities are available for library operations. These include computers ($\bar{x} = 2.78$), photocopiers ($\bar{x} = 2.56$), scanners ($\bar{x} = 2.67$), CDs/DVDs ($\bar{x} = 2.51$), internet facilities ($\bar{x} = 2.74$), and printers ($\bar{x} = 2.87$). However, they disagreed on the availability of barcode readers ($\bar{x} = 2.01$) and functional digital cameras ($\bar{x} = 2.33$). The mean scores, which range between 2.51 and 2.87, suggest that the libraries possess a moderate level of ICT facility availability, particularly in basic equipment used for document processing, printing, and information access.

Table 3: Mean scores of the dexterity of librarians in the application of ICT facilities for the management of information resources

S/N	Item	X	CM	Remark
18.	I can select and acquire information resources online through the online publisher catalogue	2.68	2.50	Agree
19.	I can catalogue/classify information resources with the use of library application software	2.41	2.50	Disagree
20.	I can print digitized information resources using printer	2.89	2.50	Agree
21.	I can save, retrieve and disseminate information resources with the library management software	2.45	2.50	Disagree
22.	I can scan information resources in the library using scanners	2.70	2.50	Agree
23.	I can backup information resources into storage devices like; DVDs and CDs	2.56	2.50	Agree
24.	I can use barcode reader in securing information resources	2.31	2.50	Disagree

Table 3 presents the mean scores on the dexterity of librarians in the application of ICT facilities for managing information resources. The findings reveal that respondents agreed they could select and acquire information resources online through publishers' catalogues ($\bar{x} = 2.68$), print digitized materials using printers ($\bar{x} = 2.89$), scan library materials ($\bar{x} = 2.70$), and back up resources using storage devices like DVDs and CDs ($\bar{x} = 2.56$). However, disagreed on their ability to catalogue/classify information resources using library software ($\bar{x} = 2.41$), to save, retrieve, and disseminate information with library management software ($\bar{x} = 2.45$), and to use barcode readers for securing resources ($\bar{x} = 2.31$). The mean scores, which range between 2.56 and 2.89, indicate that librarians exhibit moderate dexterity in using ICT for basic operations but show limited competence in more technical, software-based tasks.

Discussion of Findings

The findings of research question one is in line with Emmanuel et al. (2024) whose study found out that library staff possess ICT proficiencies in; word processing skills, spread sheet skills as well as electronic presentation skills. This implies that librarians are fairly proficient in basic and intermediate ICT applications but there is still a need for continuous professional training, particularly in database management and advanced digital library operations, to enhance their overall ICT competency and service delivery efficiency (Omosor, 2014).

The findings of research question two is in support of Whong and Ezra (2016), who in their research found out that certain ICT facilities exist in Nigerian libraries which include; computers, photocopiers, scanners, printers, CDs/DVDs as well as internet facilities. This also aligns with Fyneman and Oporum (2023) whose study emphasized that adequate ICT infrastructure is vital for enhancing library efficiency and supporting digital service delivery.

The findings of research question three suggests that while librarians can effectively use ICT tools for simple information handling, there is a gap in advanced digital management skills such as cataloguing and automation. Echem et al. (2024) observed that without adequate ICT training and exposure to integrated library systems, librarians may struggle to fully leverage technology for efficient information resource management. Oyedokun et al. (2018) noted that many librarians possess basic ICT operational skills but often lack advanced competencies in using specialized library software.

Conclusion

The paper considered managing knowledge in the digital age: the persuasive case of ICT dexterity of librarians. ICT facilities are used in libraries to manage library resources more professionally. The impact of ICT in libraries cannot be over-emphasized, as there is no division and section of the library that has not been shaped and reshaped with the advent of ICT. It has strengthened operations in the academic library by providing the necessary support for enhanced library services. It could be concluded that ICT has instituted a paradigm shift in the management of information resources and as such library staff are to swing with this wave so as to adequately manage information resources.

Recommendations

Based on the findings of the study, the following recommendations were made;

1. For academic libraries to appropriately manage its information resources in this technological age, they must ensure that library staff are adequately trained and retrained to initiate and manage technological or ICT tools.
2. Academic libraries should be adequately funded by parent bodies as this will encourage the acquisition of ICT facilities.
3. Librarians should as a matter of urgency develop the attitude of acquiring necessary ICT dexterities whether or not they are told to do so.

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