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Research

Application of Information Communication Technology for the Preservation of Library and Information Resources in Academic Libraries

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The research study examined the application of information and communication technologies (ICT's) in the preservation of library and information resources in academic libraries "a case study of FCE library, Yola, Adamawa State, Nigeria". Four research questions guided the study and the study adopted a descriptive survey research design and the population of study is 34 staff of the FCE library. The research instrument was questionnaire, data were analyzed using descriptive statistics of simple percentage, frequency and tables. The findings of the study revealed that the application of (ICT) in the preservation of library and information resources is of utmost importance. Adoption and utilization of ICT has helped in prolonging the lifespan of library and information resources thereby reducing the threats faced by the deteriorating factors of library and information resources. Based on the findings of this study the threats were regarded as environmental threats (light, heat, humidity, dust and water), biological threats (microorganism, insects, rodents, cockroaches) and human threats (theft, mutilation, marking books with pen, using saliva to flip pages etc.). The study recommended that causes of deterioration of library and information resources which are environmental, biological, human and natural causes should be given due consideration through preventive measures and plan for during collection development of the library. Conclusively, preservation measures employ in the Federal College of Education Yola, Library have reduced book theft, mutilation, light, heat, dust, microorganism, insects, rodent etc.

Keywords: Information Communication Technologies (ICT's); Preservation; Library Resources; Academic Libraries; Nigeria.

INTRODUCTION

The organization, preservation and dissemination of information is essential to the effective exploitation of information resources in the library. Library is a repository of knowledge and a social institution saddled with the responsibility of disseminating knowledge to the people without any discrimination. Information collections are the priceless heritage of mankind as they preserve facts, ideas, thoughts, accomplishments and evidence of human development in multifarious areas, ages and directions (Osunride & Adetunla, 2017). However, academic libraries are referred to those libraries that are established in tertiary institutions to support and strengthen the academic programmes and curriculum of such tertiary institutions of learning. These include libraries of universities, colleges of education, polytechnics, mono-technics and other post-secondary educational institutions. Lawal and Opeola (2012) defined an academic library as any library that caters for the needs of those engaged in academic pursuits in higher institutions like the universities, colleges of education, colleges of agriculture and polytechnics.

The services provided by an academic library depend to a large extent on the quality and quantity of its collections and staff. For effective service delivery, it is necessary to equip the libraries with adequate information resources comprising of print and non-print information resources for the users. Ideally, academic libraries are expected to support their parent institutions in achieving their educational objectives. Thus, the main functions of academic libraries are acquisition, organization, preservation and dissemination of information resources to users.

Library resources are the information bearing materials which enable the library to fulfill its goal of meeting the information needs of its users (Adomi, 2008). Libraries in their effort to provide a broad array of resources to meet the needs of their users collect resources in various sizes and formats. These library resources can include manifestation of the "printed work, audio and video recordings, microforms, visual and electronic resources and generations of requisite equipment for accessing or listening to data stored on them". These resources constitute library collections that help in meeting the users' information needs.

To ensure library resources remain available to present and future generation of users, libraries and information centers need to engage in variety of preservative effort ranging from transferring of information from original format to more durable forms. For example, microfilming newspapers and books to make them last longer by converting them into readable micro-images and digitizing other information resources (Smith, 2007).

However, preserving intellectual and cultural heritage now becomes not only the academic commitment but also the moral responsibility of librarians, who are in charge, since proper dissemination of library resources is only possible when the documents are in good and usable condition. Preservation of deteriorating resources in libraries has become a global phenomenon to which libraries must aggressively respond if the mission of meeting the information needs of their patrons would be achievable in this era of dwindling budgetary allocation to libraries (Osunride & Adetunla, 2017).

According to Smith (2007) the purpose of preserving physical objects that contain information or hold memories is to ensure access to that information in future. Library resources exist in various forms like books, manuscripts, maps and microform, audio and video recordings. Hence, libraries need to understand the chemistry of those materials and how long a resource must be preserved and kept for use.

Preservation of library and information resources and services are integral library operations that can make libraries to remain perpetually useful. Bassy, Abalaka, Dauda and Okikiri (2014) also defined preservation as activities which include all the managerial and financial considerations, including storage and accommodation provisions, staffing levels, policies, techniques, and methods involved in preserving library and archival materials and the information contained in them.

According to Idowu (2011), the traditional services (benefits) rendered by the library to the users include, readers' services, reference services, documents delivery service, borrowing renewing and reserving, computerized interactive search, technical service, IT service, e-library service, serials service, exhibition and display, user education, counseling service, reprographic services, Current Awareness Services (CAS), Selective Dissemination of Information (SDI) etc. However, the advent of (ICT) has expanded the scope of these services and the tools of information delivery.

The term Information and Communication Technology (ICT) as it relates to library and as noted by deWatteville and Gilbert (2000), is the acquisition, analysis, manipulation, storage and distribution of information; and the design and provision of equipment and software for these purposes. Daniel (2010) sees ICT as forms of technology that are used to create, store, transmit, share or exchange information. This broad definition of ICT includes such technologies as: radio, television, video, Digital Versatile Disk (DVD), telephone (both fixed line and mobile phones), satellite systems, computer and network hardware, software and the Internet, as well as the equipment and services associated with these technologies, such as videoconferencing and electronic mail. These different tools are able to work together to form our networked world.

Dafiaghor, (2012) explained that the use of information technology in Nigerian academic libraries has been profoundly affecting all aspects of information acquisition,

storage, and transfer. Its magnificent development has dramatically changed the mode of library operations and information services. Hundreds of thousands of monographic materials, journals, learning resources, databases, etc. are now available in electronic formats, and these materials can now be accessed from the remote corner of any country, thereby increasing the use of information and literature and the efficiency of information services in Nigerian tertiary institution. Users are now more independent than before; they can access to these electronic formats from their home computers and search databases according to their information needs.

The Federal College of Education Library, Yola was established together with the college to support the teaching and learning processes. When established in the year 1975/76, the library had no permanent structure to house its materials (books) instead the materials were housed in a small portion allocated to it in a corner of the cafeteria. Presently, the library is located between the Modibbo Adama Multipurpose Hall and Murtala Nyako Hostel, while the e-library is located in the former library building between the Directorate of Academic Programmes and the college clinic. At present, the library accommodates 834 students including the two (2) faculty/schools libraries. The College Library derived its name from the third provost of the college, Professor Mustafa Abba (PMA) Library.

STATEMENT OF THE PROBLEM

Owing to developments in science and technology over the past few decades, we are now in the midst of transition from essentially output of information in paper format to output in a variety of electronic media. Library materials are in wide variety of sizes, shapes and formats which often present problems in relation to library storage, preservation and access procedures. Some of the materials like television sets, cassettes, cartridges, film recording, computers etc. can prove heavy and cumbersome for handling, while others like slides, filmstrips and multi-media kits can prove very difficult to organize, shelve, preserve and control. It is necessary to mention that many library media resources are more vulnerable to careless treatment and abuses than books. The annoyance and frustration caused to users and audience by providing damaged or defective information materials can dent the reputation of a library and deflect a user's confidence in its services. And, this can be very monumental indeed.

The advent of ICTs has given librarians a face lift in the organization and preservation of information resources in libraries. Digital media have revolutionized information sources and advances in ICT have dramatically changed information provision. The recognition of the Nigerian

academic libraries, especially their roles in academic development remains very significant. Their tasks have been simplified by the use of ICT facilities in the acquisition, organization and preservation of library and information resources among others.

The researchers observed that the objectives and goals of any library are the provision of timely, current and relevant information to the users, and they find it difficult to come and use the available resources in the library since internet is there for them to utilize, with the current trend in the world. Why can't the FCE library adopt the application of ICT to preserve her library resources? Could it be that the FCE library do not have the right information resources for its users to preserve? Could it be that the type of ICT facilities available for the preservation of library and information resources are not adequate? Also could it be that the FCE library have not overcome the challenges of ICT application in the preservation of its information resources? It is against this background that this study is designed to examine the application of Information and Communication Technology in the preservation of library and information resources in FCE Yola library.

OBJECTIVES OF THE STUDY

The main objective of the study is to examine the application of Information Communication Technologies (ICT's) in the preservation of library and information resources in Federal College of Education, Yola.

Specifically, the following objectives were examined:

i.   To identify the types of library resources available and require preservation in FCE library Yola.
ii.   To determine types of ICT facilities available being used for the preservation of library and information resources in FCE library Yola.
iii.   To ascertain the extent to which ICT facilities have affected the preservation of library and information resources in FCE library Yola.
iv.   To determine the challenges facing the application of ICT facilities in the preservation of library and information resources in FCE library Yola

RESEARCH QUESTIONS

The following research questions were used to guide the study:

i.   What are the types of library and information resources are available and require preservation in FCE library Yola?

ii.   What are the types of ICT facilities are available and used for the preservation of library and information resources in FCE library Yola?
iii.   To what extent have the ICT facilities affected the preservation of library and information resources in FCE library Yola?
iv.   What are the challenges to the application of ICT facilities in the preservation of library and information resources in FCE library Yola?

REVIEW OF RELATED LITERATURE

Academic libraries are set up to mainly to support and pursue the objectives of their parent institutions such as teaching, learning, research and recreational purposes. The services provided by an academic library depend to a large extent on the quality and quantity of its collections and staff. For effective service delivery, it is necessary to equip the libraries with adequate information resources comprising of print and non-print information resources for the users.

According to Lawal and Opeola (2012) defined an academic library as any library that caters for the needs of those engaged in academic pursuits in higher institutions like the universities, colleges of education, colleges of technologies and polytechnics. Similarly, Osunride & Adetunla (2017), defined Library as a repository of knowledge and a social institution saddled with the responsibility of disseminating knowledge to the people without any discrimination. Information collections are the priceless heritage of mankind as they preserve facts, ideas, thoughts, accomplishments and evidence of human development in multifarious areas, ages and directions.

The aim and objective of any library is to meet the information needs of his/her users especially in the digital age. Olatokun (2008) noted that the library resources include but not limited to material resources, human resources and financial resources. Examples of media resources include computer hard-drive, databases, library software; non-book materials include CD ROMs, audio and video tapes, while print materials include pictures, magazines, books, maps & photographic materials etc.

Kaye (2005) stated that information resources refer to item or means through which individuals get the information of their choice. They are in wide variety of sizes, shapes and formats which often cause problems in relation to acquisition, storage, and access procedures. Some of the materials like television, cartridges, film recordings, audio and tape player etc. can be difficult to organize, shelf and control.

Information and communication technology (ICT) has been defined by various scholars from different perspectives. The term Information and Communication Technology (ICT) first appeared in the mid-1980s and was defined as "All kinds of electronic systems used for broadcasting telecommunications and mediated communications", with examples including personal computers, video games, cell phones, internet and electronic payment systems etc. (Parvez, 2011). Riyasat and Fatima, (2008) defined ICT as the integration of computing, networking and information processing technologies and their applications.

Aluko (2004) also described ICT as enabling technologies (both hardware and software) necessary for delivery of voice/audio, data (high speed and low speed) video, fax and internet services from point A to point B (or possibly to multiply B C etc.) using wired and wireless media protocol (IP) and non IP networks. However, in this context, information and communication technology is the use of electronic devices such as computers, telephones, internet, satellite system to store, retrieve and disseminate information in the form of data, text image and others.

The development and availability of Information and Communication Technologies (ICTs) in libraries have today not only increased and broadened the impact of information resources and brought them to their doorsteps, but also placed more emphasis on effective and efficient services. Their applications in libraries have indeed continued to ease and promote quick and timely access to and transfer of information resources that are found dispensed round the globe. In his study on the availability and use of ICTs in collection preservation/management, Nwalo (2005) listed the following ICT facilities used in the preservation of library resources to include; computers, DVDs, CDs, internet and telephones. deWatteville and Gilbert (2000) noted that the ICT includes; Computer, Internet, Digital camera, Webcam, Smart Card, Scanner, E-Books, Printers, Electronic Journals, WEB-OPAC, Animation, E-Mail, CD-ROM, DVD, RFID Technologies.

The early preventive measures against theft and mutilation of library and information resources by earlier libraries included warning, chaining, pledging, cataloguing and copying (Raffensperger, 2010). According to Griffiths and Krol (2009), during the Greek and Roman civilizations, papyrus rolls were stamped with ownership stamps as well as copying of documents. The libraries retain the original and loan out copies to library users. In the middle ages, monastic libraries demanded deposits from patrons or patrons made pledges of returning the materials safe to the library before they were given the materials.

Preservation is a word, which is as old as the materials. The term implies proper storage of physical object, how the objects are kept in good order and arrangement. Preservation has been defined by various scholars. According to International Federation of Library Association (IFLA 2008), preservation includes storage and accommodation, provision, staffing levels, policies,

techniques and methods involved in preserving library and archive materials and information contained in them. Preservation may be viewed as the totality of processes and operations involved in the protection of information resources against damages, or deterioration. Preservation may involve four related activities which are; maintenance, examination, conservation and restoration.

Maintenance: The daily care of information resources and archives, particularly in the current and semi-current records environ; when they are housed in offices, libraries or record centres; maintenance ensures the general protection of information resources against environmental hazards or other physical dangers.

Examination: This is preliminary procedure taken to determine the original information resources and structure of an item and to determine the extent of its deterioration, alteration or loss.

Conservation: Conservation refers to the intrusive protection of information resources or archival materials by the minimal physical and chemical treatments necessary to resist further deterioration, which will not adversely affect integrity of the original.

Restoration: Restoration involves the repair of an item when aesthetics and reproduction of the original appearance is more important than the preservation of the integrity of the item. Restoration is generally viewed as an archival activity.

The challenges of application of ICTs in the preservation of library resources in African countries is enormous. Emmanuel and Alfred (2008) in their study on the challenges of managing information and communication technologies for education in Tanzania noted that while new technologies have added value to library services by presenting new modes of collecting, storing, retrieving and providing information, they have also brought new challenges and aggravated some of the challenges that had faced libraries before. The challenges relate to acquisition of ICTs, preservation of electronic resources, maintenance and security issues, training of users, and general lack of awareness and commitment among library stakeholders

Sivakumaren, Geetha and Jeyaprakash (2011) in their study on ICT facilities in university libraries in India found that computers, printers, scanners and photocopiers were most of the facilities used and the application of ICTs has increased the library functions and users expectations have increased due to development in technologies. Jordan (2003) was of the opinion that barriers to adequate ICT skills training in developing countries arose from both lack of ICT literacy and the fact that many local library schools failed to integrate ICTs into their curricular has greatly affected the performance of library staff. Other barriers or constraints as enumerated by Ashcroft

and Watts (2005) include shortage of technology literate staff in libraries, the lack of skilled human resources to install and manage computer networks, and poor funding to develop ICT skills in existing staff.

Zaid (2008), Afolabi & Abidoye (2011) noted some of the challenges encountered in the library in ICT application to include:

Lack of adequate finance and cost of ICT facilities: The current downturn in the Nigerian economy has affected the educational sector and libraries are no exceptions. Lots of equipment and manpower are needed for successful automation of library services.

RESEARCH METHOD

The descriptive survey method was adopted for this study to examine the application of information and communication technologies (ICT's) in the preservation of library and information resources in Federal College of Education, Yola.

Population of the study

The population for this study consists of the thirty four (34) staff which comprised of; The Chief Librarian, Divisional Heads, Unit Heads, Para-Professionals and Non-Professional staff of the Federal College of Education Library, Yola.

Sample and Sampling Technique

The entire population of the staff is 34, and was used without sampling because the population is manageable. This type of technique where the whole population was used is called concensus survey. The consensus survey technique according to Nworgu, (2015: 91) is where the entire population is studied without sampling.

Instrument for Data Collection

The study used a structured instrument for data collection. The questionnaire is made up of two sections; A and B. Section "A" provides demographic information of the respondents while section "B" contains the variables that has to do with the study.

Method of Data Analysis

Data were analyzed using descriptive statistics of simple percentage, frequency and tabular presentation in which appropriate descriptive analysis was used to infer meaning to the data in the table.

RESULTS

Research Question 1: What types of library and information resources are available and require preservation in FCE library, Yola?

Table 1: Distribution on types of library and information resources available and require preservation in FCE library Yola.

Types of library and information resources	No of Respondents	Percentage (%)
Print format	21	62
Non-print format	5	15
Others	8	23
Total	**34**	**100**

Sources: Field Survey, 2020.

Table 1 above shows that respondents were staff of Federal College of Education Yola Library. Out of the 34 respondents, 21 which are 62% preferred that the printed format of library and information resources require more preservation, 5 of the respondents which represents 15% preferred Non-printed format while the remaining 8 respondents (23%) preferred others i.e. the combination of both printed and non-printed format.

Research Question 2: What types of ICT facilities are available and being used for the preservation of library and information resources in FCE library Yola?

Table 2: Distribution on types of ICT facilities that are available and being used for the preservation of library and information resources in FCE library Yola.

Types of ICT facilities	No of Respondents	Percentage (%)
CD-ROM	0	-
Computer	3	8
Photocopiers	0	-
Printers	0	-
Flash-Drive	0	-
Internet	3	8
Scanners	0	-
All of the above	28	82
Others	0	-
Total	**34**	**100**

Sources: Field Survey, 2020.

Table 2 above shows that out of the 34 respondents representing 100%, 3 respondents representing 8% agreed that the library is equipped with computer, 3 respondents representing 8% selected internet while the remaining 28 respondents representing 82% believed the library is equipped with CD-ROM, computer, photocopiers, flash-drive, internet and scanners.

Research Question 3: To what extent have the ICT facilities affected the preservation of library and information resources in FCE library Yola?

Table 3: Distribution on the extent of ICT facilities that have affected the preservation of library and information resources in FCE library Yola.

Effect of preservation	No of Respondents	Percentage (%)
Refreshing	0	-
Digitization	7	20
Binding	1	3
Environmental control	1	3
All of the above	25	74
Total	**34**	**100**

Sources: Field Survey, 2020.

From the Table 4 above, out of 34 respondents, 7 respondents representing 20% agreed that digitization is the ICT measure that the FCE library Yola being used to preserve library and information resources in FCE library Yola, 1 respondent representing 3% selected binding, 1 respondent representing 3% selected environmental control, while 25 respondents representing 74% selected all of the above which are refreshing, digitization, binding and environmental control as ICT measures that the FCE library Yola being used to preserve library and information resources in FCE library Yola.

Research Question 4: What are the challenges to the application of ICT facilities in the preservation of library and information resources in FCE library Yola?

Table 4: Distribution on challenges to the application of ICT facilities in the preservation of library and information resources in FCE library Yola.

Challenges of ICT application	No of Respondents	Percentage (%)
Inadequate funding	0	-
Shortage of manpower	0	-
Power outage	7	20
Staff attitude towards ICT use	2	6
Occasional system failure	1	3
Poor infrastructure facilities	4	12
Poor ICT skills	3	9
Poor maintenance	2	6
All of the above	15	44
Total	34	100

Sources: Field Survey, 2020.

From the table above, out of 34 respondents, 7 respondents representing 20% agreed that the challenges to the application of ICT facilities in the preservation of library and information resources in FCE library Yola is power outage, 2 respondents representing 6% selected staff attitude towards ICT use, 1 respondent representing 3% selected occasional system failure, 4 respondents representing 12% selected poor infrastructure facilities, 3 respondents representing 9% selected poor ICT skills, 2 respondents representing 6% selected poor maintenance, 15 respondents representing 44% selected all of the above challenges which are inadequate funding, shortage of manpower, power outage, staff attitude towards ICT use, occasional system failure, poor infrastructure facilities, poor ICT skills and poor maintenance as challenges impeding the effective and efficient application of ICT facilities in the preservation of library and information resources in FCE library Yola.

SUMMARY OF FINDINGS

The following summaries of findings were derived from the result presented above.

1.   The study revealed that 21 respondents which are 62% preferred that the printed format of library and information resources require more preservation, 5 of the respondents which represents 15% preferred Non-printed format while the remaining 8 respondents (23%) preferred others i.e. the combination of both printed and non-printed format.

2.   The study also revealed that 3 respondents representing 8% agreed that the library is equipped with computer, 3 respondents representing 8% selected internet while the remaining 28 respondents representing 82% believed the library is equipped with CD-ROM, computer, photocopiers, flash-drive, internet and scanners. More so, 4 respondents representing 12% believed that "Acquisition" is library function where ICT facilities are applied for the preservation of library and information resources, 18 respondents representing 53% agreed on "storing", 10 respondents representing 29% agreed on "preservation", while the remaining 2 respondents representing 6% believed other library functions.

3.   The study also revealed that 7 respondents representing 20% agreed that digitization is the ICT measure that the FCE library Yola being used to preserve library and information resources in FCE library Yola, 1 respondent representing 3% selected binding, 1 respondent representing 3% selected environmental control, while 25 respondents representing 74% selected all of the above which are refreshing, digitization, binding and environmental control as ICT measures that the FCE library Yola being used to preserve library and information resources in FCE library Yola.

4.   The challenges impeding the effective and efficient application of ICT facilities in the

preservation of library and information resources in FCE library Yola are inadequate funding, shortage of manpower, power outage, staff attitude towards ICT use, occasional system failure, poor infrastructure facilities, poor ICT skills and poor.

DISCUSSION OF FINDINGS

Based on the study, it is revealed that the application of information and communication technology (ICT) in the preservation of library and information resources is of utmost importance. Adoption and utilization of ICT has helped in prolonging the lifespan of library and information resources thereby reducing the threats faced by the deteriorating factors of library and information resources.

The application of ICT mainly digitization which is the conversion of printed materials to digital format through the use of scanners and cameras has put all the deteriorating factors in check. Also ICT facilities such as theft detectors, scanners, printers, computers, photocopies etc. have helped in supporting the main goal of academic libraries (Federal College of Education Yola Library) which is to meet the information needs of its users. More so, based on the findings of this study, the challenges associated with application of (ICT) in the preservation of library and information resources in the Federal College of Education Yola Library are inadequate funding, shortage of manpower, power outage, staff attitude towards ICT use, occasional system failure, poor infrastructure facilities, poor ICT skills and poor maintenance.

CONCLUSION

Based on the findings of the study, it is concluded that the preservation measures employ in the Federal College of Education Yola Library have reduced book theft, mutilation, light, heat, dust, microorganism, insects, rodent etc. but has not stopped it. Also, preservation of library and information resources is the backbone of any library since replacement of library and information resources is very expensive for libraries in developing countries. It is also important that academic libraries take very strict measures to safeguard against loss or willful damage. Main causes of deterioration of library and information resources should be giving due consideration and planned for during collection development.

RECOMMENDATIONS

The following recommendations are made on the findings of this study:

1. The types of library and information resources available in the library that requires preservation should be given close attention such as textbook, newspaper etc. this can be done through hiring the right staff in FCE library Yola.
2. The types of ICT facilities such as CD-ROM, computer, photocopiers, flash-drive, internet and scanners etc. being used by academic libraries should be available at all time in FCE library Yola.
3. ICT measures such as Digitization, Refreshing, Binding and Environmental control should be used to preserve library and information resources in FCE library Yola.
4. The challenges/problems associated with the application of ICT facilities in the preservation of library and information resources in FCE library Yola should be treated by providing adequate funding, adequate manpower, constant power supply, staff exhibiting good attitudes towards ICT use, provision of UPS to support system failure, provision of adequate infrastructure facilities, provision of adequate ICT skills and constant repairs.

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