

Assessment of Library Staff Utilization of Information and Communication Technology in Medical Library Operations in College of Medicine and Health Sciences, Bingham University, Jos Campus.

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Abstract

The study assessed library staff utilization of Information and Communication Technologies in Medical Library operation in College of Medicine and Health Sciences, Bingham University, Jos Campus. Simple Random sampling was used in the study where fifty (50) Library Staff were selected. Questionnaire was used as the main instrument for data collection. Data collected was analyzed using descriptive statistics. The research findings revealed that: the use of ICTs in the library enhances efficiency and effectiveness of library routine tasks, saves time in library operations, provides effective referencing services and stores library records without distortion or defacement. The study concluded that the use of ICTs in libraries has greatly enhanced library operations and routines in acquisition, reference, circulation, cataloguing and serial control sections of the library. Library automation has always attracted a great number of users to the library as it makes access to information resources easier. The study recommends among others that: The College of Medicine and Health Sciences of Bingham University, Jos Campus should endeavor to put in place a full library automation for easy access by the library users. The Online Public Access Catalog (OPAC) should be a priority in library automation as it makes both staff and users' tasks easier. It is also an effective way of providing reference services; The College Library should be provided with full Internet Services which will enable its users to have access to library information resources from any location within the college. This is made possible when a library patron is issued a login identity during library registration. This may also improve users' patronage to the library.

Keywords: Information and Communication Technology, Library Staff Utilization,

Introduction

As the traditional custodian of information, librarians in the 21st century need to be aware of significant changes and as such employ their technological knowhow and intellectual masterpiece in order to retain the leading role of the academic libraries in supporting teaching, learning and research. This means that the 21st century Librarian will have to be armed with competent skills that will enhance the provision of effective library services to meet clients changing information needs. Nigerian academics libraries in the 21st century are gradually changing to fit into their clients' information seeking patterns.

The situation has brought about the establishment of digital libraries to compliment traditional ones. This is evidenced in the attempt to digitize library resources to cater for the information needs of new generation users, which is 21st century library users who exhibit much dexterity in using new sources and new technologies.

These changes brought by the information and communication technologies have impacted on the mode of providing information services. The traditional methods of information dissemination have given way to electronic means of communication. While the developments and applications of ICT in library operations have improved and facilitated the access and dissemination of information. It has equally provided new roles in information provision, dissemination and transfer. Moghaddam (2009) notes that one of the vital elements of success and dynamism is specialized human resources viz librarians. The success or failure of any organization depends to a large extent on the human capacity. Ikhemuemhe, (2005) argued that if librarians are to continue to make substantial contributions as information disseminators, they will have to understand and exploit ICT infrastructure and emerging technologies in delivering services to clients.

One of the major applications of information and communication technology is the automation of major library activities such as circulation, acquisition, serial control, cataloguing etc. Most of the specific tasks in these activities are routine and repetitive, and hence they are ready and hence they are readily amenable to automation. Automation involves the computerization of routine tasks hitherto being performed by human beings that is replacing man with machine. The objective of library computerization is to make the service of a library more effective and efficient. Library automation has many advantages in that it reduces the number of repetitive routine tasks, it is more effective and efficient than manual services, it generates library statistics easily, and more importantly, it speeds up library services.

Before a library embarks on the computerization, of its activities, the process must be well planned and designed. It is usual for systems analysts to thoroughly analyze the needs of the library, and then design an appropriate computerized system. According to Rowley (1980), there are six main steps in system analysis. These are: definition of objectives, feasibility study, definition phase, design phase implementation phase and evaluation phase. Thus, Libraries must state clearly what problems are being currently experienced, how would computerization reduces or eliminates the problems? And what does the library hope to achieve by computerizing its services? The answer to these questions would constitute the objectives of computerization and they would be so formulated.

Problem Statement

The use of ICT in Libraries has brought dynamism in the ways daily library operations and services were traditionally done. It facilitates speedy library operations, easy access of information and enhances service delivery in the library. Today, physical location of libraries is less important as long as the information is accessible. Anunobi and Edoka (2010) noted that there are copious studies and opinions on the use of ICT facilities for library operation and routines in general. Students of the college of Medicine

and Health Sciences, Bingham University, Jos Campus are highly engaged in clinical and lectures. They therefore have little or no time to patronize the library during working hours. The students are usually free from 7pm daily, about the same time the library staff closes because of the volatile nature of Jos; hence, there is underutilization of the library and its resources.

In the light of these problems, the study is designed to investigate librarians' opinion on the influence of ICT application of the library operations and routines in the Medical Library, College of Medicine and Health Sciences, Bingham University, Jos Campus.

Objectives

The study was based on the following objectives:

1. To identify the available information technologies in use in the libraries of Bingham University, Karu and Jos campuses
2. To determine the effects of information technologies on Job performance of the library staff
3. To identify areas of library operations and routines that needs ICT facilities for enhanced services
4. To determine challenges associated with the use of information technology in the library.

Literature Review

Lawani et al (1992), reported the first successful library computerization in Africa, when the International Institute of tropical Agricultural (ITTA) library computerized its services in 1984. It was an integrated computerization that included acquisition, cataloguing and circulation for 8 hours a day from 70 computer terminals both within and outside the library. A study by Adeniran (1998) shows that 72% of the 161 libraries surveyed in southern Africa was computerized as at 1994.

There are however reported cases of many failure of libraries in computerizing their services. Ogunleye (1997) reported the attempt made by the University of Ibadan (1975) Lagos (1982) and Ahmadu Bello University (1987) to automate their library services, which unfortunately failed.

Nkhoma (2003) recently reported the problems encountered at the Copper Belt University Library computerization efforts. Some of the problems listed include: inaccurate costing of the selection of wrong software. Ogunleye (1997) in an earlier study had noted the computerization of the library services of most Nigerian Universities failed because there was no evidence of any system analysis carried out. Also, most of the libraries lacked trained personnel. Having decided to computerize a library, it is important to evaluate all the available software to be used before a selection is made. It is particularly important to ensure that the software selected has been used by comparable libraries, and those libraries are satisfied with it. The suppliers of the software selected must also be reliable. Automation is particularly important where the tasks are repetitive. Many of library tasks are repetitive and could easily be computerized. This could definitely save a lot of staff time which they can use for other non-routine activities.

Similarly, in the cataloguing section, where the cataloguer often has to ensure that all documents have three minimum access points: author, title and subject, computerization can considerably reduce this task. The charging and discharging of records at the circulation desk can easily be taken over by the computer. A library may computerize one particular activity of the library such as acquisition, cataloguing or circulation, or it may be an integrated computerization in which all the services would be computerized. There are many software applications for one single module of computerization or integrated module. Depending on the capabilities of libraries in Africa, some have selected only one type of service for computerization while many have embarked on integrated computerization.

The internet is an important product of information and communication technology. It is a vast collection of information sources of interlinked computer networks. It is usually referred to as a network of networks. A great number of computers are interconnected worldwide, and the information sources in each computer are made available to all users who have access to the internet. Through the internet one can access bibliographic and full-text database, library catalogues on OPAC, electronic mail, newspapers, magazines, constitutions of various countries, electronic commerce etc. One of the most important facilities on the internet is the World Wide Web which consists of a series of various computers that are linked to the internet through the use of hypertext transfer protocol (Http). Websites can be created on the internet and they can be accessed through a browser. Each website has its Universal Resource Locator (URL) - website address. There are many internet applications. They include e-mail, mailing list, Usenet, downloading of relevant information etc. in downloading of relevant information; a user can access the websites of libraries on the internet. Most journals are available electronically. Published with their full-texts on the web. Most of these journals are freely accessible to any user. Daily Newspapers are also accessible on the internet. Capron (2000) revealed that mail, telephone, television, radio, books, newspapers and periodicals are the traditional ways users send and receive information. However, data communications with the aid of computer transmits data over communication lines such as telephone lines since the mid-1960s. Internet use has today, revolutionized access to information for the business world, libraries, education and individuals.

The justification of this study is in the central and critical role that IT plays in library operations as attested to by Nwizu (2008), that the use of audiovisual and electronic resources has broken the barriers of time and distance. Oguniola (2004) opined that IT is applied to the operation of libraries and information centers to ensure that information delivered is timely, accurate, precise and relevant. Bierman (1980) in Madu (2002) defined library automation as the use of computers and associated technology to do exactly what has been done in libraries with the justification of reduced cost and or increased performance. Thus, automation helps in the acquisitions, organization, storage and dissemination, of information in libraries. Generally, IT applies to library services in a number of ways, which include: Acquisitions, cataloguing, circulation, serials and user services.

Ogusola (2004), Ekong (2005) pointed out that in some of the first-generation University libraries, University of Benin Library, Kashim Ibrahim Library (ABU), University of Nigeria Nsukka Library and a few others, digitization is taking place in many of their libraries and library information networks are established with connectivity through the University campus network to the internet. The Centre for learning Resources (CLR) Covenant University, Ota has been placed on the platform of full application of ICT because funds are made available for such innovations. Ogunsola (2004) declared that Librarians or any member of the academic community at Obafemi Awolowo University Library can now easily find information concerning any book in the library of congress in the US.

In the light of technological inventions in library operation, the Medical Library of College of Medicine and Health Sciences, Bingham University, Jos Campus should be provided with information technology to key into the Federal Ministry of Education resolve on the establishment of the National Virtual (Digital) library project, to provide, in an equitable and cost-effective manner, enhanced access to national and international library and information resources and to share locally available resources with libraries all over the world using digital technology, among other objectives. The card catalogue and subsequently, the Online Public Access Catalogue (OPAC) have historically represent the central element as an organization and the centre of the automated system managing both the collection and the services relating to it. The library catalogue has always been viewed as a tool for the location, represented by topographic signatures. This is the justification behind the greater use of the library than other facilities for obtaining specific information; that is, the user resorts to the library OPAC because after query, he or she may wish to consult the original document, if it has not been viewed by other means (Villen-Rueda, et al. 2007).

Methodology

The study adopted a survey research design. The principle of this research design was to seek the opinion of library staff in addressing the problem of under-utilization of library resources by users of the Medical Library, College of Medicine and Health Sciences, Bingham University Jos. The target population for this study was the staff of the University Library, Annex Library Staff, Medical Library staff and all the departmental Library Staff of Bingham University, Karu and Jos Campuses. Simple Random sampling was used in the study where fifty (50) Library Staff were selected. Questionnaire was used as the main instrument for data collection, data collected was analyzed using descriptive statistics represented in frequencies, mean scores, percentages and standard deviation.

Results and Discussion

Fifty (50) copies of questionnaire were administered to the respondents. Forty-eight (48) questionnaires representing 96% were duly completed, returned and found useful for the analysis. The tables below present the responses of the respondents.

Table 1: Extent of Usage on Available of ICTs in the Library.

ICTs Usage	VH		H		U		L		VL		TOTAL	%	MEAN	%	ST.D
	F	%	F	%	F	%	F	%	F	%					
Photocopy machine	20	40.0	20	40.0	6	12.0	2	4.2			48	100	1.79	14.12	.824
Computers	10	20.8	18	36.0	8	16.7	8	16.7	4	8.3	48	100	2.54	20.04	1.237
Printers	12	25.0	26	54.2	4	8.3	4	8.3	2	4.2	48	100	2.13	16.81	1.024
Internet facility	4	8.3	20	41.7	8	16.7	10	20.8	6	12.5	48	100	2.88	22.73	1.214
Laminating machine	2	4.2	4	8.3	26	54.2	8	16.7	8	16.7	48	100	3.33	26.28	.996

KEY: VH = Very High, H = High, U = Undecided

The table above shows the responses of the respondents on the extent of the usage of ICT facilities in the library studied. It indicates that laminating machine is highly utilized with a mean score of 3.33 (26.28%). The internet facility has the second highest mean score of 2.88 (22.73%), followed by the use of computers with a mean score of 2.54 (20.40%). ICTs that recorded the least utilizations are the photocopy machine with a mean score of 2.13 (16.81%) and 1.79 (14.12%) respectively. The analysis indicates that laminating machine is the most utilized due to the high number of patrons that laminate library I.D cards and other documents. Internet facility and computer has the second and third highest usage because the two ICTs are dependents on each other to function effectively to a large extent. The internet and computers attracts a wide range of users because it enables them to acquire and disseminate information easily. Printers and photocopy machine are the least utilized ICTs in the library because of the cost of printing and photocopying documents. It could also own to the fact that users own storage devices that can be used in copying documents to be later viewed or copied into their personal computers. Most library users use cloud services which limits the use of hard copy documents.

Table 2: Effects of ICTs on Job Performance of the Library Staff.

Variables (Effects)	SA		A		U		D		SD		TOTAL	%	MEAN	%	ST.D
	F	%	F	%	F	%	F	%	F	%					
Improved efficiency and effectiveness	14	29.2	32	66.7	2	4.2					48	100	1.75	22.44	.526
Time saving	30	62.5	14	29.2	2	4.2	2	4.2			48	100	1.50	15.72	.772
Enhanced reference services	8	16.7	24	50.0	16	33.3					48	100	2.17	28.44	.694
Undistorted information resources statistical record	14	29.2	18	37.5	8	16.7	8	16.7			48	100	2.21	28.96	1.031

KEY: SA=Strongly Agreed, A=Agreed, U=undecided, D=Disagree, SD=Strongly Disagree

Table 2 indicates the responses of the respondents on the impacts of ICTs on job performance of the library staff. The mean score of respondents who Agreed that the use of ICTs in the library provides undistorted information resources statistical record stood at 2.21(28.96%). Enhanced reference services recorded a mean score of 2.17 (28.44%), while improved efficiency and effectiveness has a mean score of 1.75 (22.94%), and time saving recorded a mean score of 1.50 (15.72%). It shows that Information generated and stored using ICTs have restricted access. Hence, distortion is minimized to the barest minimum. The ICTs according to the analysis shows that it has great impact on librarian' job on referencing, as searching and location of information resources are made easy. It improves efficiency and saves time. ICTs have impacted on librarians' job by easing information generation, processing, storage and dissemination. Librarians have updated their selves with library automation to remain relevant in the field.

Table 3: Areas of Library Operations and Routines that Needs ICTS for Enhanced Services.

Library Section	SA	A			U			D			SD			TOTAL	%	MEAN	%	ST.D
		F	%	F	%	F	%	F	%	F	%	F	%					
Circulation	34	70.8	12	25.0	2	4.2								48	100	1.33	17.73	.559
Reference	24	50.0	22	45.8	2	4.2								48	100	1.54	20.53	.582
Acquisition	22	45.8	18	37.5	8	16.7								48	100	1.71	22.08	.743
Cataloguing	32	66.7	14	29.2	2	4.2								48	100	1.38	18.04	.570
Serial Control	24	50.0	22	45.8	2	4.2								48	100	1.54	20.53	.582

KEY: SA=Strongly Agreed, A=Agreed, U=undecided, D=Disagree, SD=Strongly Disagree

The table above shows the responses on areas of library operations and routines that need ICTs for enhancing services. Acquisition section recorded the highest mean score of 1.71 (22.08%), followed by reference and serial control sections with mean scores of 1.54 (20.53%) for each section, Cataloguing and circulation sections recorded 1.38 (18.04%) and 1.33 (17.73%) respectively. Acquisition section recorded the highest mean owing to the fact that most of the acquisition section activities are done with the use of ICTs such as computers, Internet and e-mails for sending requisitions and receiving and printing of invoices. Referencing is done electronically using the Online Public Access Catalog (OPAC) to access information resources with ease, while electronic journals can be downloaded through the Internet. Checking-out and checking-in of information resources can be done electronically using the OPAC in the circulation section. Classification or class marks of information resources could be assigned using the Online Library of Congress Classification Scheme.

Table 4: Challenges Associated with the Use of ICTS in the Library.

Challenges	SA		A		UND		D		SD		TOTAL	%	MEAN	%	ST.D
	F	%	F	%	F	%	F	%	F	%					
Erratic power supply	32	66.7	10	20.8	4	8.3	2	4.2	0	0.0	48	100	1.50	15.72	.825
Frequent computer breakdown	8	16.7	24	50.0	8	16.7	8	16.7	0	0.0	48	100	2.33	24.42	.953
Inadequate ICT skills of library staff	20	41.7	16	33.3	6	12.5	6	12.5	0	0.0	48	100	1.96	20.54	1.031
Inadequate library infrastructure	14	29.2	28	58.3	2	4.2	2	4.2	2	4.2	48	100	1.96	20.54	.944
Low Internet services	22	45.8	20	41.7	2	4.2	2	4.2	2	4.2	48	100	1.79	18.79	1.010

KEY: SA=Strongly Agreed, A=Agreed, U=undecided, D=Disagree, SD=Strongly Disagree

Table 4 indicates the analysis of the respondents on the challenges associated with the use of ICTs in the library. Frequent computer breakdown has the highest mean score of 2.33 (24.42%), inadequate ICT skills of library staff have a mean score of 1.96 (20.54%) and inadequate library infrastructure recorded a mean score of 1.96 (20.54%) as well. Low Internet services recorded a mean score of 1.79 (18.76%), while erratic power supply has a mean score of 1.50 (15.72%). From the analysis, it could be deduced that inadequate library infrastructure has affected the utilization of library services.

Conclusion

The study assessed library staff utilization of Information and Communication Technologies in Medical Library operation in College of Medicine and Health Sciences, Bingham University, Jos Campus. Based on the findings of the study, it could be concluded that the use of ICTs in libraries has greatly enhanced library operations and routines in acquisition, reference, circulation, cataloguing and serial control sections of the library. Library automation has always attracted a great number of users to the library as it makes access to information resources easier. The analysis shows the impact of ICTs on library operations and routines as thus; Information or records stored in electronic format cannot be easily distorted or defaced like those stored in printed materials. The analysis also indicated enhancement in reference services, efficiency and effectiveness in library operations as well as less time spent on daily library tasks. The study also points out inadequacy in library infrastructure, which results to low Internet services, frequent computer breakdown due to fluctuating electric voltage and non-updated computer software; inadequate library infrastructure affects the acquisition of ICTs skills by library staff.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. The college of Medicine and Health Sciences of Bingham University, Jos Campus should endeavor to put in place full library automation. When this is achieved, all of the library information resources are digitized for easy access for library users. The Online Public Access Catalog (OPAC) should be a priority in library automation as it makes both staff and users' tasks easier. It is also an effective way of providing reference services.
2. The college library should be provided with full Internet Services which will enable its users to have access to library information resources from any location within the college. This is made possible when a library patron is issued a login Identity during library registration. This may also improve users' patronage to the library.
3. An alternative electric power source should be provided to the library to curtail erratic power supply and to ensure consistent library automation services are enjoyed by users. This would enhance efficiency and effectiveness in library operations and routines.

4. Library staff development and training should be supported by the college to enable library staff to be equipped with skills and practices that commensurate with current library trends and practices globally.

References

- Adediran, O.R. (1998) A Survey of Library software in Southern Africa. *African Journal of Library, Archives and Information Science*, 8(2) 131 – 152
- Aina, L. O. (2004) Coping with the Challenges of Library and Information Delivery Services. The need for Institutionalized Professional Development, Nigerian Library Association Conference proceedings.
- Anunobi, Chinwe V. and Edoka, Benson E., "Use of ICT Facilities for Serials Functions in Southern Nigeria Federal University Libraries" (2010). *Library Philosophy and Practice* (e-journal).355.
<http://digitalcommons.unl.edu/libphilprac/355>
- Capron, H.L. (2000) *Computers: Tools for an Information Age*. 6th Edition. Upper Saddle River, N.J: Prentice hall,
- Ekong, V.E. (2005) Advancing the Role of ICT in Nigerian University Libraries. *The Information Technologist*.Vol.2(2) 96-105
- Ikhemueh, G. (2005). MTN Connects UNILAG with virtual library. *Vanguard Newspaper*, 21. Internet society. 2014 Global Internet Report 2015: Mobile Evolution and Development of the Internet.
- Lawani, S.M., et.al (1992) Large Scale Library Automation: An African Success Story. *African Journal of Library, Archives and Information Science*, 2 (1) 1-16
- Madu, E.C. (2002) Computerized Reference source and Traditional Printed Reference Source: A Comparison of the Old and the New in Library Services. *Information Science and Technology for Library Schools in Africa*. Madu E.C. et.al (ed) Ibadan: Evi- Coleman Publications.
- Moghaddam, F. M. (2009). Omni culturalism: Policy solutions to fundamentalism in the era of fractured globalization. *Culture & Psychology*, 15, 337–347.
- Nkhoma, B.P. (2003) A Critical Analysis of Library Computerization at the Copperbelt University, Zambia. *African Journal of Library, Archives and Information Science*, 13 (2) 131-152.
- Nwizu, S.C. (2008) Analysis of ICT Usage in Information Generation and Dissemination by Distance Education (DE) Participants: Implications for the Attainment of the Millenium Development Goals in Nigeria. In Boucouvalas, M., and Aderinoye, R. (Eds) *Education for Millenium Development: Essays in Honour of Professor Michael Omolewa*, Vol.2.
- Ogunloye, G.O. (1997) Automating the Federal University Libraries in Nigeria. *African Journal of Library Archives and Information Science*, 7(1) 71-79.
- Ogunsola, L.A. (2004) Nigeria University Libraries and the Challenges of Globalization: The Way Forward. *Electronic Journal of Academic and Special Librarianship*. Vol.5 (2-3).
- Rowley, J.E. (1980) *Computers for Libraries*. New York: K.G. Saur.
- Villen-reuda et.al (2007) The Use of OPAC in a Large Academic Library: A Transactional Log Analysis Study of Subject searching. *The Journal of Academic Librarianship*, 33 (3), 327-337.