

AVAILABILITY AND UTILIZATION OF INFORMATION AND COMMUNICATION TECHNOLOGY RESOURCES IN NIGERIAN ACADEMIC LIBRARIES

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Abstract

Purpose-Information Communication Technology (ICT) as a terminology has overtaken information technology (IT) because of its appropriateness, and its utilitarianism. ICT is heavily utilized in the storage processing and dissemination of information. It has made the organization of information very efficient, the delivery of basic information services more effective and the dissemination of information to users easier. The study was carried out to determine the availability and use of ICT resources in academic libraries in Ondo State

Design/method/approach- Descriptive survey was adopted for the study, five objectives were formulated to guide the study, the sample size for the study is 90 respondents, and multi stage sampling technique was used. Such as purposive sampling to select three institutions out of the six in the state, secondly, random sampling was used to draw out 30% of the users in the selected institutions. Structured questionnaire and direct observation method was used by the researcher instruments used to collect data. The research was analyzed using percentages, and mean for the questionnaire and direct observation method to cross check availability of each item in the checklist.

Findings- The results revealed that the most readily available ICT resources in the libraries were computers, and Online Public Access Catalogue (OPAC), it also revealed that users use ICTs for reprography, browsing the internet and downloading of PDF files in the libraries, it likewise revealed that ICTs were available and accessible for usage in the libraries.

Implication-The provision of information communication technology is highly needed for its availability and utilization and there is no gainsaying that this calls for urgent attention of the library management for effective utilization by library users.

Originality/value: This study encourages libraries and information science professionals and management to be proactive in the provision of ICTs to users while users should also make adequate use of it in their information retrieval.

Keywords: Availability, Utilization, Information Communication Technology, Resources in Academic Libraries

Introduction

Over the years, growing knowledge of the critical importance of educational development for lifelong learning had led to increased calls for improved aides to information retrieval and use that meet the contemporary education needs of students and instructors. Libraries, worldwide, since the last two decades, have undergone significant metamorphosis from a purely traditional manual service delivery system to a more dynamic technologically driven system. In Nigeria, this change has

become more manifest only in the new millennium. Like a cyclone, the technology driven environment has taken over the library and is taking it to unprecedented heights in knowledge acquisition, management, and communication.

Information Communication Technology (ICT) as a terminology has overtaken information technology (IT) because of its appropriateness,

and its utilitarianism. Whereas (IT) was used to describe the new technology in the mid- 80s up to mid 90s, focusing on computer, ICT since the beginning of this decade, is a new concept that emphasizes the use of technology for development. Information and Communications Technology on their own emphasizes the uses of computer and other technologies such as telephone to process, transport, and transfer voice and other data singularly or mixed with least interference or distortion of content.

Despite the transformative advantages they bring to service delivery in all spheres, there is, however, a lukewarm attitude of the Nigeria government to the provision of ICT infrastructure and facilities at the level comparable to international standards have been generally lamented by Okiy (2010). Some important steps required to be taken by government in this regard are not only the formulation but also the visible implementation of an ICT policy for the nation. For the opinion of Esharenana and Stella (2010), ICT policies and strategies are essential tools to define Africa's response to the challenges of globalization and nurture the emergence at on African information society. Okiy (2010) asserted that while many African countries including Nigeria have national ICT policy in place very little progress has been achieved in most cases in policy implementation. Confronted with the challenges of the provisions of ICT in our library, many academic libraries have resorted to the use of funds from the Education Trust Fund (A Government Agency to provide ICT facilities to the libraries (Okiy, 2010).

ICT has radically transformed most of the services provided by a library. ICT is heavily utilized in the storage processing and dissemination of information. It has made the organization of information very efficient, the delivery of basic information services more effective and the dissemination of information to users easier. It has eliminated a lot of routine and respective task in a library. It is a technology set for information management; acquisition, storage, organization, processing, retrieval and transmission or dissemination. It has been observed that with ICTs the value of information has increased tremendously

because it has become more accessible and achieving client's expectations has increased, and libraries are able to provide better services because of the potentials and capabilities of the new technologies. Zaid (2010) avers that "the need for information technology especially in libraries cannot be over emphasized because an automated library has the potential of satisfying library patrons' needs beyond the capabilities of the manual system".

The new technologies raise expectations for increased library service. ICT is seen as a contemporary reaction to the difficulties and complexities of library problems posed by the information age challenges. Today the revolutionary trend brought by the coming of ICTs has made the role of ICTs very cardinal to library operations. ICTs have raised the tempo of information demand and supply and have fostered the intensity of efficient access to actual and potential users. IT era represents the cutting edge of the digital and imaginative futuristic orientation that libraries are transiting to "ICT is playing an increasingly integral role in the delivery of information service. The coming of ICTs is gradually eroding the relevance of only book based libraries and has brought about a new intellectual base which can be explored and exploited by libraries for better services.

An academic library is a library that is attached to a higher education institution which serves two complementary purposes to support the school's curriculum, and to support the research of the university faculty and students (Marcus, 2014).An academic library is crucial to the development of any institution and play major roles in the development of any nation since they provide the high as well as middle level manpower needed for the social, economic and political advancement of a nation. This is done through their programmes of teaching, learning, research and community services. The central place of academic libraries is called into play because it is the duty of these libraries to provide the necessary information to the lecturers and students to achieve their teaching learning and research needs in the easiest, fastest and most comprehensive way. This central place of the library in academics has resulted over the years in the necessity for academic libraries to continue to evolve and

move with the times so that they can deliver on the requirements of academic libraries in meeting the academic needs of their clientele in the tertiary institutions. The central place of academic libraries is called into play because it is the duty of these libraries to provide the necessary information to the lecturers and students to meet their teaching, learning and research needs in the easiest, fastest and most comprehensive way. This central place of the library in academies has resulted over the years in the necessity for academic libraries to continue to evolve and move with the times so that they can deliver on the requirements of academic libraries in meeting the academic needs of their clientele in the tertiary institutions.

All the academic libraries are meant to support the research and teaching needs of the institutions to which they are attached. The goal of these libraries is to enable the transfer of knowledge to the end users in the light of the deep technical issues involved in their assignments, improve access to and make available adequate for reliable information service. They are meant to support the primary aims and objectives of the academic institutions, which include training, research and discovering ideas.

These libraries have often thrived in providing experimental solutions to library problems. Therefore, there is a good reason to state that the most important influence of academic libraries has been in the area of creativity in always finding means to solve their own problems for which they are created or find solution to have ultimately benefited all libraries.

The application of information and communication technology (ICT) in the provision of library services in academic libraries in Nigeria is in tremendous progress due to the emergence of digital age. It is on this note that the need to view the availability and usage of ICT is a thing to be examined in all academic institution present in the state. Information Communication Technology (ICT) is then a term used to designate the broad field encompassing areas such as telecommunication and networking information delivery, office systems,

digitization, hardware and software, Ingersoll and Culshaw (2004).

Statement of the Problem

The trend of information explosion resulting from technological advancements in libraries has impacted positively on the method of operations of libraries. The development of ICTs has provided the drive for academic libraries to take advantage of the new possibilities offered by the new technologies in order to be able to provide adequate information service in aid of their objectives. Utulu (2007) stressed that, "Being the hub of information provision for researchers, academic libraries have continuously invested on the procurement of ICT facilities." It is deemed that ICTs application in these libraries will expand the research possibilities of the institutions they serve. It is undoubtedly true that ICTs increase library usage and access to information, without which the library would have been in its old traditional ways. It has been observed that the ways and extent of applying modern technologies to the management of library operations in Nigeria reveals that very little application of information and communication technology has so far been made. It is against this backdrop that this study is embarked on in order to determine the extent of ICTs availability and utilization in academic libraries in Ondo State of Nigeria.

Research Questions

The following research questions were formulated to guide the study

1. What types of ICT resources are available for use in academic libraries in Ondo State?
2. What specific uses are made of the ICT resources in the libraries?
3. To what extent has the availability and use of ICT resources enhance service in the libraries?
4. What problems affect the available and usage of ICTs in the libraries?
5. What are the strategies for enhancing the availability and use of ICTs in the libraries?

Review of Literature

Utilization simply means the extent to which people are making use of whatsoever resources that is already available in the community or in an organization (Ohah, 2010). Omekwu, (2002) opined that utilization is a stage where the individual uses the information, and the main function of the utilization stage are to actually use the trial results and continue or discontinue to use the innovation at a later date of which the utilization of ICTs in university libraries is not far from the description. Utilization of Information Communication Technology is the extent to which digital resources and services of the library are actually used for teaching, learning and research. Cox and Janti (2012) identified use as an activity which measures the worth of an item to a library or information system. Use is therefore, the single criterion which could be used to determine the reason for retaining a document within the collection of a library, and use is essential in guiding the collection development effort of the library. Use also justifies the need for institutions to adequately finance their libraries or not. Consequently, the need to use information resources and services of academic libraries is to enhance the attainment of the research objectives of their parent institutions.

Academic library is the nerve centre or the hub around which scholarship revolves. It is an indispensable instrument for intellectual development. A well-stocked academic library is a storehouse of information, or a record of human experience to which users may turn to for data or information. Opara (2001) (Cited in Yusufandlwu, 2010), posits that the library stands in the same relationship to the society as the memory of an individual by making available and accessible to its users information required for teaching and independent study.

In the early days of librarianship, libraries use manual system in performing library functions and services such as selection, acquisition, organization, storage, retrieval and dissemination of information resources to clients of the library. Madu (2009) asserted that "no form of technology existed in libraries in the early 1940s". There were no challenges facing the libraries and the librarians in terms of the

quantity of information resources in circulation and in terms of demand from users. With the increase in academic activities and the attendant diffusion of knowledge and increase in publications, there arose the need for the library to keep abreast of the unstrained influx of information, thus a systematic control became necessary.

The issue of information explosion brought about the idea of an alternative system and measure capable of arresting the situation as the management of the attendant enormous volume of information could not be done effectively with the available traditional methods available at that time hence the need for new technologies in the library became inevitable. This led to the advent of automation in libraries as efficient technologies that help the librarian to manage information explosion and its attendant consequences for the library more effectively than is possible by traditional methods. Thus automation which is also known as computerization as defined by (Umesh, 2014) is the use of automatic machines or processing devices in libraries. Automation signaled the beginning of the use of versatile devices in libraries leading to the present state of the art devices known variously in the information services parlance as information technology, modern technologies, new technologies and recently information and communication technologies. The literature reveals that the terms automation, computerization, modern technologies, new technologies are all information technologies under the acronym ICT which means information and communication technology.

Information and Communication Technologies (ICT) have become key tools and had a revolutionary impact on how we see the world and how we live. Today, the place of ICTs in education and the world in general cannot be undermined. According to Bamidele (2006), ICT is a revolution that involves the use of computers, internet and other telecommunication technology in every aspect of human endeavor. Similarly, Ofodu (2007) also defines ICT as electronic or computerized devices, assisted by human and interactive materials that can be used for a wide range of teaching and learning as well as for

personal use. From these definitions, ICT could be defined as processing and sharing of information using all kinds of technologies for the manipulation and communication of information.

ICT include matters of development, installation and implementation of information systems and applications. Freeman (2010) defines ICT has also been cited as encompassing potential innovations within and among organizations by enabling the use and sharing of information. The definition has given a very broad outlook of the concept of IT and has genuinely espoused it in all ramifications. It is this holistic view that other definitions tend to compliment and explain. For proper understanding of the concept, Maduand Adetarami (2009) assert that “automation ranges from the operation of simple factory device to a fully computerized system”. While Dowler (2007), Adegoke (2002), Eguavoan, Adeyemi, Oyinloye (2009) concurred that library automation is “the application of modern information technologies in carrying out library processes”. The definition however encompasses the notion of the application of technologies to information handling; the machines, processes and knowledge required to create, store, manipulate, disseminate, and retrieve information.

The popular opinion about the concept is that ICT is the convergence of modern or new technologies; computers and telecommunication technologies which led to the emergence of new creation-information and communication technologies. From the foregoing there is a graduation of thoughts and process from the concept automation or computerization to information technology, modern technology, new technology to information and communication technology.

Information technologies were not introduced to library operations until the early 1960s. During this year, a number of library operations were automated. This includes replacement of data in hard copies to online and the incorporation of telecommunication capabilities into computer. According to Madu (2009), “the Library of Congress in the United State of America was the foremost library to introduce

any form of information technology in its library operations in 1961”. While Kilgour (2009) stated that “in Britain the use of information technologies in libraries started in the mid 1960s with the actual introduction of computers in the public libraries of Dorset and Camden in 1966. The literatures validate the fact that the application of information technologies to libraries started in the Western part of the world and spread to the rest. As such countries like the United States of America, Canada, Russia, Germany, China, United Kingdom etc. were the early birds in the application of ICT.

Information and Communication Technology (ICT) is an indispensable part of the contemporary world. In fact, culture and society have to be adjusted to meet the challenges of the knowledge age. The pervasiveness of ICT has brought about rapid technological, political and economic transformation which has eventuated in the network society organized around ICT (Akawu, 2009). The field of education has not been unaffected by penetrating influence of information and communication technology. Ayodele (2002) in Oluwarobi (2012) defined ICT as electronic based technology that is generally used to retrieve store, process, and package information as well as provide access to knowledge. The development of micro computers, optical disc, the establishments of telecommunication network, television, internet, etc. have assisted in broadening people’s knowledge and facilitating effective communication. Ugwu and Oboegbulem (2011) stated that ICTs in education encompasses a great range of rapidly evolving technologies such as desktops, notebooks, digital camera, local area network (LAN), the internet and the World Wide Web (WWW), CD Rom and DVDs and applications spread sheets, tutorials, simulations, electronic mails, digital libraries, computer mediated conferencing, video conferencing and virtual reality. In a long treatise the CMD (2005) stressed that; these components are broadly divided into hardware and software. The hardware components of information technology is the mechanical, electrical and electronic part that makes up the machine that is used in collecting, processing, organizing and disseminating information. The

machine can be part of a chain or network. The various kinds of hardware's of new information technologies include typewriters, computers, printers, photocopiers, telephone sets, radio and televisions sets, audio and video recorders and players, projectors, cameras, camcorders etc.

Design of the Study

The research design for this study is descriptive survey. Nworgu (2006) (cited in Mesagan, 2016), defines a descriptive survey research design as "an investigation of an existing condition or event in relation to population and for which the test of hypothesis is not involved". This is appropriate because it allows for generalization to be made on the entire population and helps in data collection and reports on the existing availability and utilization of Information and Communication Technology (ICT) resources in Academic libraries in Ondo State.

The area of the study is Ondo State zone of Nigeria. The State is made up of Seven tertiary institutions which include: Adekunle Ajasin University, Akungba Akoko (A.A.U), Elizade University, Ilaramokin, (E.U.I), Federal University of Technology, Akure (FUTA), Achievers University, Owo, (AUO), Rufus Giwa Polytechnic, Owo, (RGP), Adeyemi College of Education, Ondo (A.C.E) and Ondo State University of Science and Technology, Okitipupa (OSUSTEC).

The population of the study is 1095 which consists 200 users from Adekunle Ajasin University, Akungba Akoko (A.A.U), 80 users from Elizade University, Ilaramokin, (E.U.I), 95 users from Adeyemi College of Education, Ondo (A.C.E), 150 users from Federal University of Technology, Akure (FUTA), 28 users from Achievers University, Owo, (AUO), 187 users from Rufus Giwa Polytechnic, Owo, (RGP) and 100 from Ondo State University of Science and

Technology, Okitipupa. The population was gotten from the library records and average daily statistic of library users between April to May, 2021 in the respective universities.

The sample size for this study is 90 respondents. Multi stage sampling technique was used. In the first stage, purposive sampling was used to select three institutions out of the six in Ondo State. Therefore, the universities selected for this study include Adekunle Ajasin University, Akungba Akoko (A.A.U), Adeyemi College of Education, Ondo (A.C.E) and Federal University of Technology, Akure (FUTA), because these libraries have functioning ICTs for their users. Also, the study intends cutting across university, colleges and Technology in the State. In the second stage, random sampling was used to draw out 30% of the users in the selected institutions. The sampling of 30% of the library users is in accordance with Anaekwe and Unigwe (2007). They are of the opinion that "it is statistically accepted that sample size of 30 and above is large while less than 30 is considered small", reason being that as the sample grows larger, the critical t – or f – value decreases and then begins to approximate the values associated with normal distribution curves.

The instruments for this study include questionnaire and observation checklist. The observation checklist comprises of twenty-nine (26) items.

The questionnaire also comprised of five (5) questions. Question one comprises of twenty-six (26) items, question two comprises of six (6) items, question three comprises of nine (9) items, question four comprises of ten (10) items, and question five comprises of eight (8) items making the total of seventy-four (65) questions in all. Some of the questionnaire items were in open ended and closed ended format while others were in likert format.

Table 1: Observation Checklist of Types of ICTs Available in the Libraries in Ondo State

S/N	Types of ICTs in the libraries	AAUA		ACE		FUTA		TOTAL
		A	NA	A	NA	A	NA	
1	Computer	✓	-	✓	-	✓	-	3
2	Internet	✓	-	✓	-	✓	-	3
3	Compact Disk Read only memory (CD Rom)	✓	-	✓	-	✓	-	3
4	V/sat	✓	-	✓	-	✓	-	3
5	Video CDs	✓	-	✓	-	✓	-	3
6	Storage media e.g. flash drives, floppy disks	✓	-	✓	-	✓	-	3
7	Online public access catalogue (OPAC)	✓	-	✓	-	✓	-	3
8	Video tapes	✓	-	✓	-	✓	-	3
9	Optical disks	✓	-	✓	-	✓	-	3
10	Printers	✓	-	✓	-	✓	-	3
11	Uninterruptible power supply (UPS)	✓	-	✓	-	✓	-	3
12	Scanner e.g. barcode scanner	✓	-	✓	-	✓	-	3
13	Servers	✓	-	✓	-	✓	-	3
14	CD readers	✓	-	✓	-	✓	-	3
15	CD writers	✓	-	✓	-	✓	-	3
16	Microfiche reader	✓	-	-	✓	-	✓	1
17	Film strip, motion picture projectors	✓	-	-	✓	-	✓	1
18	GSM	✓	-	✓	-	✓	-	3-
19	Landline telephone	-	✓	-	✓	-	✓	0
20	Telex	-	✓	-	✓	✓	-	1
21	Fax machine	✓	-	-	✓	-	✓	1
22	Radio	✓	-	✓	-	✓	-	3
23	Radio recorder	✓	-	✓	-	✓	-	3
24	Television set	✓	-	✓	-	✓	-	3
25	Video machine	✓	-	✓	-	✓	-	3
26	Photocopiers	✓	-	✓	-	✓	-	3
	Total	24	2	21	5	22	4	67

Findings as presented in Table 1 revealed that computers, internet, Compact Disk Read - Only - Memory (CD ROM), V/sat, Video CDs, storage media e.g flash drives, floppy disks, online public access catalog (OPAC), printers, video tapes, optical disks, Uninterrupted Power Supply (UPS), scanner (barcode scanner) printers, servers, CD readers and writers, micro fiche reader, video machine, are available in the

libraries under study. The finding agrees with Anasi (2014) which stressed that ICT components include all communication devices or applications such as radio, television, cellular phones, computer and network, hardware and software satellite system as well as the various services and application associated with them like video conferencing.

Table 2: Mean Responses of Uses of ICT Resources in academic Libraries

Options	VHE 4	HE 3	LE 2	NE 1	MEAN	Rank	REMARK
For browsing the internet	70	20	-	-	3.7	1 st	Accepted
For downloading of PDF files	50	40	-	-	3.5	2 nd	Accepted
For online public access catalogue	50	40	-	-	3.5	3 rd	Accepted
For reprographic purpose	20	70	-	-	3.2	4 th	Accepted
For reservation of materials	-	-	40	50	1.4	5 th	Rejected
For serial control	-	-	20	70	1.2	6 th	Rejected

From table 2 above, finding also revealed that specific uses are made of the ICT resources in the libraries. These uses include reprography, browsing the internet and downloading of PDF files. According to Oketunji (2009), the goal of introducing new technologies in the library environment is ultimately to improve the

delivery of information to users. He further points out that “libraries are using information technologies to automate technical services to provide efficient reference and information services, to network operations such as cataloguing, authority control, interlibrary loan and international bibliographic project”.

Table 3: Mean Response on the Extent of Availability and Use of ICT Resources for Enhancing Services in the Libraries

Services	VLE	HE	LE	NE	MEAN	RANK	REMARK
Readers services	90	-	-	-	4.0	1 st	Accepted
Administration	90	-	-	-	4.0	2 nd	Accepted
Reprographic services	70	10	10	-	3.6	3 rd	Accepted
Reference services	50	40	-	-	3.5	4 th	Accepted
Technical services	20	70	-	-	3.2	5 th	Accepted
Bibliographic services	-	-	60	30	1.6	6 th	Rejected
Serial control	-	-	-	90	1.0	7 th	Rejected
Reserve unit	-	-	-	90	1.0	8 th	Rejected
In-house keeping	-	-	-	90	1.0	9 th	Rejected

Table 3 shows the mean response on the availability and use of ICT resources to enhance library services. The responses showed that ICT resources, administration, reprographic services, and reference services are used to a very high extent to enhance the reader's

services of the libraries while technical services to a large extent enhance the reader's services of the libraries. This clearly indicates the areas where improvement and sustenance is required.

Table 4: Mean Responses on Problems Affecting the Availability and Use of ICT in the Libraries

Options	SA	A	D	SD	MEAN	RANK	REMARK
Inadequate number of computers	40	30	20	-	3.2	1 st	Accepted
Inadequate supply of electricity	10	70	10	-	3.0	2 nd	Accepted
Inadequate accommodation	25	30	30	5	2.8	3 rd	Accepted
Poor ICT skill by users	-	60	10	20	2.4	4 th	Rejected
Poor funding	10	10	70	-	2.3	5 th	Rejected
Lack of software	-	-	70	20	1.7	6 th	Rejected
Outdated computer	-	-	30	60	1.7	7 th	Rejected
Lack of awareness	5	10	25	50	1.6	8 th	Rejected
Poor ICT skill by staff	-	10	20	60	1.4	9 th	Rejected
Lack of personnel for maintenance	-	10	10	70	1.3	10 th	Rejected

The finding in table 4 also revealed that a number of problems are encountered in the course of using ICT such as lack of software, poor funding, inadequate supply of electricity, inadequate number of computers, out dated computers, lack of awareness inadequate accommodation. This is agreement with Chisenga cited by Ojo and Akande (2015) while surveying the use of ICT in ten African public libraries and identified four principal barriers to the utilization of ICTs which are inadequate

funding, lack of strategic planning, lack of use of internet to provide information service, lack of consistent training for library users in new ICT services. Also, Chiefwepa (2002) pointed out some of the problems to include lack of infrastructure and equipment, lack of required skills, lack of government policies and cost of accessing some resources. This means that the application and utilization of ICT in academic libraries is largely affected by the problems identified above.

Table 6: Mean Responses on Strategies for Enhancing the Availability and Usage of ICT Resources in the Libraries

Options	VLA	LA	FA	NA	MEAN	RANK	REMARK
Provision of more funds for ICTs projects	75	15	-	-	3.8	1 st	Accepted
Upgrading and provision of additional hardware	80	10	-	-	3.8	2 nd	Accepted
Employment of more ICTs competent staff	70	15	5	-	3.7	3 rd	Accepted
Provision of infrastructure/facilities	70	5	15	-	3.6	4 th	Accepted
Provision of adequate accommodation	65	5	20	-	3.5	5 th	Accepted
Training of user on ICT skills	60	15	15	-	3.5	6 th	Accepted
Creating awareness on the availability of ICTs improved access to the resources of the library	50	32	8	-	3.4	7 th	Accepted
Training librarian	60	12	18	-	3.4	8 th	Accepted

In Table 5, the finding further revealed that certain measures on how to curb the problems identified above include provision of more funds for ICT projects, employment of more ICT competent staff, upgrading and provision of infrastructure/facility, training of librarians and training of users on ICT skills. While addressing the issue of inadequate fund by Igbo and Dike (2006), they recommended that academic libraries be funded directly by the government instead of the libraries receiving their subvention from the University authority. This will make the librarian more accountable for the fund received. In addition, Echezona and Samuel (2014) further recommended the skills that library staff required to be updated to enable them to help users.

Conclusion

This study has brought to the fore the need for efficient provision of ICTs for effective availability and utilization of library services in three Nigerian academic libraries. The result of the study indicates that the ICTs is a medium through which library users can effectively and efficiently access and utilize the online resources of any the library. It is a retrieval system that provides multiple ways to access library materials online. The study reveals that, due to the prevailing challenge of access to information resources and in view of the fact that accessibility is one of the pre-requisites of information use, the ICTs is highly needed in academic Libraries.

Recommendations

- Only competent ICTs staff should be employed as library staff likewise, the existing staff should be trained and retrained to acquire the required skills
- Available ICTs in the libraries should be upgraded to state of the art for effective and efficient service delivery
- Library users should be trained on the right use of ICTs. There is need for orientation of library users on how to make the right and intended use of ICTs in the library for the avoidance of abuse and misapplication
- The issue of power outage should be addressed by providing an alternative

power supply power the ICT resources in the library without which their usage would be hampered.

- More funds should be made available for ICTs projects in the libraries. Since it is evidently clear today that government alone cannot properly finance educational institutions including their libraries, other avenues like endowment and miscellaneous means of generating fund should be explored.

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