LEVEL OF AVAILABILITY AND UTILIZATION OF INFORMATION AND COMMUNICATION TECHNOLOGY FACILITIES BY STUDENTS: A CASE STUDY OF FEDERAL POLYTECHNIC NEKEDE, OWERRI, IMO STATE NIGERIA

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ABSTRACT: *This paper is an attempt to evaluate the availability and utilization of Information and Communication (ICT) facilities by students in Federal Polytechnic Library, and also challenges the academic library faces in the area of adoption and utilization of ICT in their service delivery. Questionnaire survey approach was adopted. Primary data were collected with the aid of a four point likert scale questionnaire. Questionnaires were administered to Students of the study area. The Population for the Students at Federal Polytechnic Nekede is 870 which was obtained from the Universities' Information and Communication Technology block (ICT, 2017). The sample size is 290. The sampling technique used here is stratified simple random. To guarantee the reliability of the instrument, it was administered on ten(10)participants out of the envisaged population of the study. A test-retest reliability method of two weeks interval was conducted, response obtained were subjected to Pearson Product Moment Correlation method and a reliability co-efficient of 0.78 was obtained. To analyze data on the research questions of the study the researcher used descriptive statistical mean. The hypothesis was tested using the chi-square (x^2) which is a statistical tool to test hypothesis about the relationship between means of groups. It was tested at 0.05 level of significance. The study found that scanning machines, printer, CD-ROM, Computer, Flash Drives, Land Area Network (LAN) and Inverter were available but few. Also the majority of the students indicated that they use ICT to retrieve information (3.1), make research(3.1), disseminate information (3.0) chat with friends (3.1) and download files (3.0). Challenges such as unreliable telecommunication network (3.3) insecurity in the library (3.3) epileptic power supply (3.3) unreliable internet (3.0) and high cost of ICT hardware/software were identified as major challenges of availability and utilization of ICT in the school's academic library. It was recommended however that these challenges be looked into both by the institution and government in order to address the challenges.*

NOTEPAD: Information and Communication Technology, ICT, Utilization, Students, Education, Academic Library, Nigeria

INTRODUCTION

It is apparent that information and communication technology dramatically plays a major role in the education sector, by improving the quality, effectiveness and efficiency of learning, research and educational management around the world (Olusesan & Emmanuel, 2016). According to Opara (2018) the most significant factor affecting the role of school libraries and school librarians in relation to student achievement is the explosion of information, particularly in relation to digital resources that have taken place in recent years. Kameswari, (2011) also, pointed out that Information and Communication Technology (ICT) is a

communication tool used in educational knowledge transfer process especially in tertiary institutions. ICT has the potential to support and improve education across the curriculum and also enhance opportunities for effective communication between teachers and students more than ever before. Therefore, the use of ICT cannot be ignored either by teachers or the students and its usage in tertiary institutions entails engaging students in ways not previously possible, creating new learning and teaching possibilities, enhancing achievements and extending interactions with local and global communities. (Ekerete &Ekanem,2015). This fact is further stressed by Vander (2004) who points out that, in relation to the use of ICT for learning, technology holds a promise of improved access to information and increased interactivity and communication between teachers and their students.

Assie-Lumumba (2008) says "Beyond the immediate educational goal is the question of how to provide the 'best education' to form the next generation of competent leaders from community to the national and global levels, economic planners, scientists, artists, humanists and more generally informed citizens, especially in this fast-paced, technology-prone and globalize world (p.2)". Therefore, in order to survive in this competitive global economic environment, a highly skilled and educated workforce with aptitude and skills in the application of ICT is very essential. This makes knowledge and use of ICT central to education in the 21st century.

In Federal Polytechnic Nekede, students engage in several learning activities that employ the use of ICT gadgets such as research, assignments, mailing, information processing and storage among others. It is on this thrust that this paper is billed to investigate the availability and utilization of ICT as well as the constraints to ICT usage by students of this institution in Nigeria.

LITERATURE REVIEW

According to Adomi (2010) a rapidly changing world like ours requires basic education as an essential tool for an individual to be able to access and apply information. The Economic Commission for Africa has indicated that the ability to access and use information is no longer a luxury, but a necessity for development. Unfortunately, many developing countries, especially in Africa like Nigeria, are still low in ICT application and use Aduwa-Ogiegbean & Iyamu Studies have further established the roles of ICT in achieving quality education at all levels of the school system. ICT is seen as key tool in acquiring, processing and disseminating knowledge. It offers increasing possibilities for codification of knowledge about teaching activities through being able to deliver learning cognitive activities anywhere, anytime (Larsen & Vincent-Lancrin 2005). .

Yusuf (2005) noted that ICT has impacted on the quality and quantity of teaching, learning and research in traditional and distance education institutions through provision of dynamic, interactive and engaging content and providing real opportunities for individualized instruction. It has the potential to accelerate, enrich and deepen skills, motivate and engage students in learning; help to relate school experiences to work practices, contribute to radical changes in the schools and provide opportunities for connection between the school and the real world (Davis & Tearle, 1999) Other researchers; Siemens, (2005) and Agi (2013) have also argued that ICT have the potential to transform learning environments and improve

the quality of learning, by making learning more situated (Bransford, Brown & Cocking, 1999) providing access to richer environment (Caplan, 2005) increasing opportunities for active learning, interconnectivity and feedback (Laurillard,2002) enhancing motivation to learn offering varieties of new possibilities to learners and having a positive effect on students' achievement in different subject areas (Chambers, 2003).

Generally, the educational relevance of computers and other components of information technology cannot be overemphasized. From the period when skinner applied programmed instructions to teaching machines, through Brunner's experiment with computers in instruction, to the current wave of information transmission and storage.

According to Hornby (2000) the word "available" is the capability of something being at one's disposal, something being obtainable within one's reach; something being free and not otherwise occupied. Availability is a performance criterion for repairable systems that accounts for both the reliability and maintainability properties of a component or system. It is defined as the probability that the system is operating properly when it is requested for use. That is, availability is the probability that a system has not failed or undergoing a repair action when it needs to be used. Availability is always associated with time and has to do with the accessibility of system resources in a timely manner; for example, the measurement of a system's uptime.

Availability of ICT facilities and service can be measured by the number of ICT facilities available in academic libraries for students to use in sourcing for information. Lack of such access affects the ability of users to improve their learning with educational software, acquire valuable technology skill. Availability not only means that the "thing" is provided but it also entails accessibility. Availability is meaningless if those who want to make use of the substance cannot have access to it. Above all, it must be accessible that utilization is possible.

According to Ogunsola (2004), the utilization of communication tools such as e-mail, fax, computer, Internet, video conferencing, World Wide Web, CD-ROM, overcomes barriers of space and time, and opens new possibilities for learning. The utilization of such technology is increasing and it is possible to deliver training to a widely dispersed audience by means of on-demand two way video over terrestrial broadband networks. Many students and lecturers can gain experience of communication through e-mail and electronic conferencing system that runs over the telephone network. They should be using the internet both to access materials, people and resources and to display their own web pages created by teacher and students. The Internet and other information communication technologies (ICTs) provide a golden opportunity for provision of value added services to parent organizations. These developments are not only giving learners access to vast libraries and multimedia resources, but also give access to tutors and natural phenomena through the world.

Also, CD-ROM technology which is one of the latest trends in information technology provides dial-up access to Compact Disks and other database in various subject fields of learning. Academic libraries and librarians should be aware of its potentials as it promotes easy access and an interactive searching. They could make a difference in this age, in their quest for efficient and speedy information delivery by exploring the new and fascinating challenges that the World Wide Web (WWW) has brought to the identification and management of information.

Akintunde (2004) opines that the new technologies allow complete solutions to problems, and consequently old services are displaced by new services. All these have been made possible in this information age. The time has come for the entire information professional of this country to embrace these technologies in their routine work. If the previous analogue information service is well managed, then the new ICT tool should be well adapted for effective modern service delivery too in the present knowledge seeking society where everybody wants to expand his frontiers of knowledge.

According to Kvebekke (1998), the use of e-mail in academics plays a fundamental role in academic research projects. Specifically, e-mail can be used to activate and sustain a discussion list service, a Usenet News Group, and to connect to Internet (i.e. a network of interconnected computer that links up individuals, institutions, organizations, countries and continents). The accessibility and use of networking technology such as the World Wild Web (www). e-mail and real time for video conferencing communication allow distance learning integration and exploration of information sources in different libraries and other web based sources and human interaction. Williamson (1999), argues that students are coming to expect both recreational and educational opportunities from the electronic forms of data, i.e. information about friends and holidays as well as learned papers. Word processing, website, and e-mail all have recreational potential while only the specialized databases are related purely to subject studies. Students also expect electronic information to be quick, convenient, and free and all encompassing.

A lot of constraints stare at the face of academic libraries in the area of adoption and utilization of ICT in their service delivery. Taking the pride of place is finance. Supporting this idea, Uzoigwe (2004) opines that:

> *The hopeless state of library funding in Nigeria has left the cankerworm being christened financial squeeze, this is to tell us what mess the Nigerian library system has been thrown into with this situation, these librarians do not meet up will their naturally assigned traditional roles not to talk of applying the ever sophisticated information technology system.*

Financial resources are the most important challenges contributing to the successful implementation of new technologies in libraries. ICT need heavy investment for its implementation in the library. Cost involved in acquisition of hardware, software, databases and computerization, networking and their continued maintenance is so large that academic libraries are not able to take decisions so easily to invest in ICT.

Furthermore, it is difficult to anticipate all costs associated with fast changing nature of emerging dynamic technologies. At the time of allocation of funds in the parent institution, the academic library is often given low priority as compared to other departments in most of the institutions. As a result, libraries are not getting adequate financial resources required for procuring modern information technologies (Ramara 2004).

Another challenge that academic libraries face, is bandwidth problem. According to Wikipedia (2014) bandwidth is a range of frequencies within a given band that is used in transmitting a signal. Therefore the amounts of bandwidth you have, determines the strength, efficiency and speed of your internet activity that is, when you open web pages, load files and

so on. Poor signal of bandwidth hinders the network from working and this affects the functioning of ICT library.

Unreliable Power Supply is another challenge which academic libraries face. Unagha (2011) states that "the epileptic power supply is very common to developing countries and can cause serious damage to the computer hardware and crashing of huge database. The sole electricity corporation has dashed the hope of many, not just at industrialization but in the efficient management of hospitals, sports, libraries and other facilities requiring electricity to power their machines and other electrical and electronic devices.

Lack of Competent Staff is one of the most important factors for successful implementation of information technology. According to (Hofmann, 1995) one of the major problems in the adoption of ICT in academic libraries is the shortage of technically skilled and competent manpower. Furthermore, Ramara (2004) emphasizes that ''in practice, most of the library personnel do not have adequate level of knowledge and competence of ICT application in libraries''.

Lack of Internet's Web Navigational Skills, Okoye (2004) opines that: ''many librarians in this country lack internet's web navigational skills. This is compounded by the fact that the internet could be disorientating due to information overload and deficiency of categorization. It does takes some time to become acquainted with all it has to offer.'' '

METHODOLOGY

Questionnaire survey approach was adopted. Primary data were collected with the aid of a four point likert scale questionnaire. Questionnaires were administered to Students of the study area. The Population for the Students at Federal Polytechnic Nekede is 870 which was obtained from the Universities' Information and Communication Technology block (ICT, 2017). The sample size is 290. The sampling technique used here is stratified simple random. The Yamane (1969) statistical formula was used in deriving the sample 74(74%) returned their questionnaires and 68 (68%) questionnaires were properly completed and this therefore was used as the sampling size.To guarantee the reliability of the instrument, it was administered on ten(10)participants out of the envisaged population of the study. A test-retest reliability method of two weeks interval was conducted, response obtained were subjected to Pearson Product Moment Correlation method and a reliability co-efficient of 0.78 was obtained. To analyze data on the research questions of the study the researcher used descriptive statistical mean. The hypothesis was tested using the chi-square (x^2) which is a statistical tool to test hypothesis about the relationship between means of groups. It was tested at 0.05 level of significance.

RESULTS AND DISCUSSION

Table 1: Gender of Respondents

Gender	Frequency	Percentage (%)
Male	167	58.4
Female	119	41.6
Total	286	100

Table 1: shows the gender distribution of the respondents. Males has 167 (58.4%) and female were 119(41.6%). This shows fair distribution in gender response. The implication therefore, is that the responses from this study will be a fair representation of all categories of the users of the library.
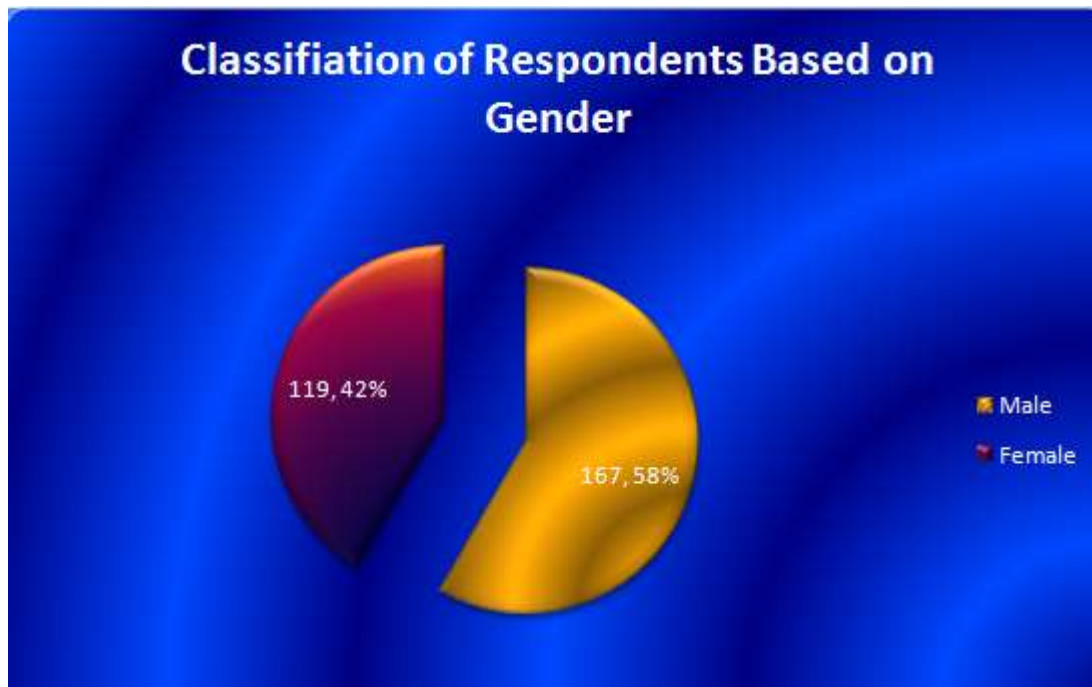

Figure 1: Classification of Respondents based on Gender

Table 2: Age of Respondents

Age group	Frequency	Percentage (%)
18-25	154	53.8
26 and above	132	53.8
Total	286	100

Table 2: shows the age distribution of the respondents. One hundred and fifty-four (53.8%) of the respondents fell within the age bracket of 18-25 as one hundred and thirty two (46.2%) of the respondents fell within the age range of 26 and above.
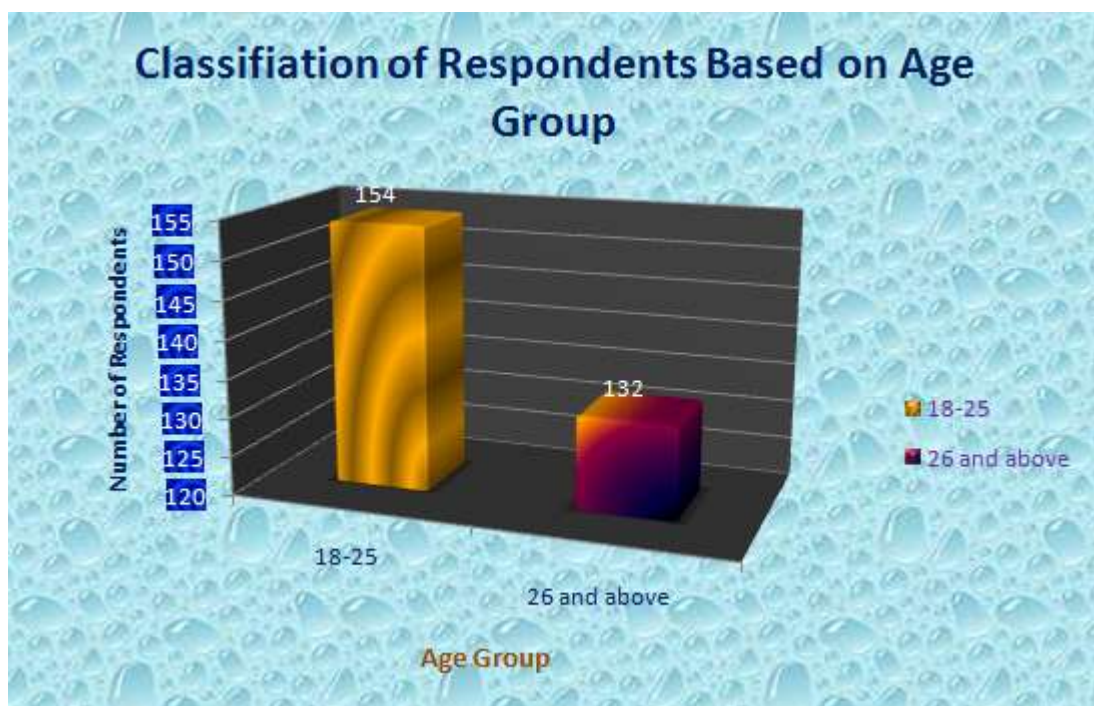
Figure 2: Classification of Respondents based on Age Group

Table 3: Year of Study of Respondents

Year of study	No	%
ND1	97	33.9
ND 2	36	12.6
HND 1	68	23.8
HND 2	85	29.7
Total	286	100

On the year of study of respondents on Table 3, 97 (33.9%) indicated ND1 while 36 (12.6%) indicated ND2. Sixty-eight (23.8%) of the respondents indicated HND 1 as 85 (29.7%) of the respondents indicated HND 2. This Table shows that ND1 students use the ICT library more than other levels.
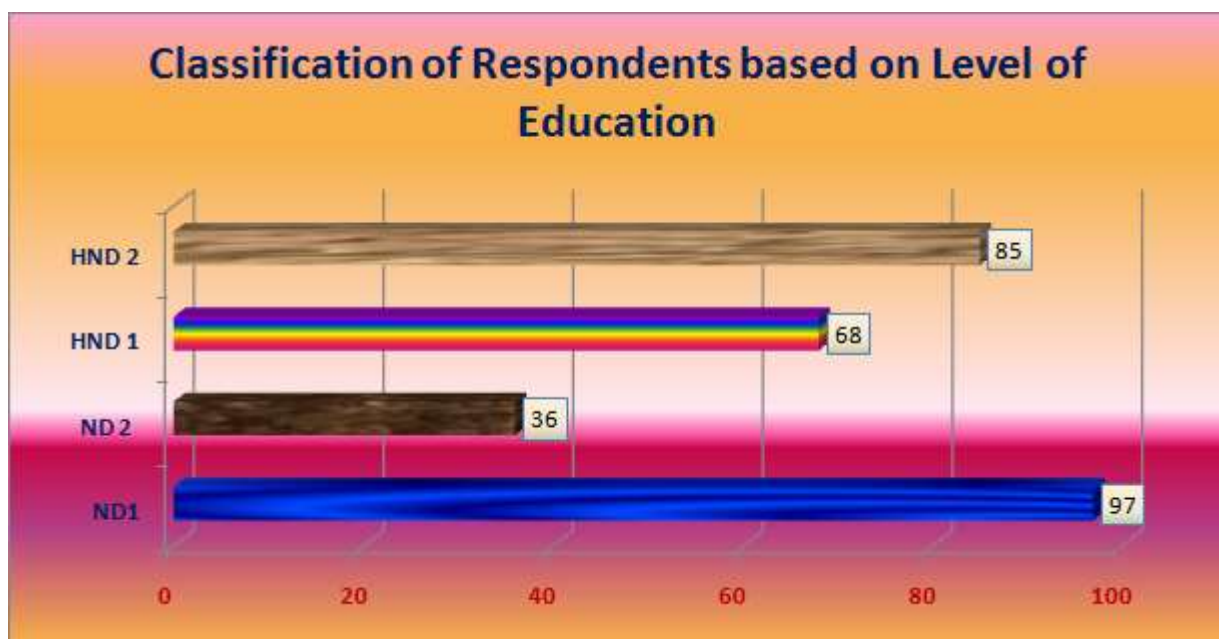
Figure 3: Classification of respondents based on level of Education

Table 4: Mean Responses on the types of ICT Facilities Available

	Types of ICT facilities Available	Available	Not available
a.	Scanning machines	4	-
b.	Printers	7	-
c.	Intercoms	-	-
d.	OPAC	-	-
e.	CD-ROM	75	-
f.	Computer	125	-
g.	Flash drives	5	-
h.	Radio phone	-	-
i.	Television set	-	-
j.	Tele facsimile	-	-
k.	Local Area Network (LAN)	3	-
l.	Wide Area network (LOAN)	5	-
m.	Modem	7	-
n.	Uninterrupted power supply (UPS)	125	-

 This research question was gathered using observational checklist. A grand mean (x) score of 27 was available. Scanning machines, printer, CD-ROM, Computer, flash drives, LAN, WAN, modem and UPS. While OPAC, radio, phone, television set, intercoms, and tele facsimile, are not available in the library.

Table 5: Mean Reponses on the use of ICT

S/N	Uses ICT by students	SA	A	D	SD	MEAN
						3.1
a.	I use ICT to retrieve information	125	84	56	23	
b.	I use ICT to make research	115	113	28	30	3.1
c.	I use ICT to disseminate information	138	60	42	46	3.0
d.	I use ICT to chat with friends	107	124	32	22	3.1
e.	I use ICT to down load files from the internet	112	96	33	45	`3.0
	Significant mean value					3.1

Table 5 indicates the significant mean value of 3.1. This relates to them in five main areas where the mean value are up to significant mean value of 3.0. This is because ICTs are used to retrieve information (X=3.1); ICTs are used to make research (X=3.1); ICTs are used to disseminate information (X=3.0); ICT are used to chat with friends (X=3.1) and ICTS are used to download files from the internet. However, the significant mean value of 3.0 indicate a positive response hence it could be inferred from the analysis that ICTs are useful to students in different areas.

Table 7: Challenges of Availability and Utilization of ICT.

S/N	Challenges of Availability and utilization of ICT	SA	A	D	SD	MEAN
a.	Unreliable telecommunication networks	158	74	37	17	3.3
b.	Insecurity in the library	167	58	33	28	3.3
c.	Epileptic power supply	132	127	15	12	3.3
d.	Unreliable Internet connectivity	115	9	43	32	3.0
e.	High cost of ICT hardware/software	98	87	65	36	2.9
	Significant mean value					3.2

Table 7 reveals that the challenge of availability and utilization of ICT library by students of Federal Polytechnic Nekede, Owerri relates to them in three main areas where the mean values are up to the significant mean value of 3.2. This is because of unreliable telecommunication networks (x=3.3); insecurity in the library (x=3.3) and epileptic power supply (x=3.3). On the contrary unreliable internet connectivity and high cost of ICT hardware/software do not give them challenges using the ICT. These two have mean values of less than the significant mean values of 3.2. Hence, it could be seen from the analysis that there are some challenges confronting the availability and utilization of ICT.

Table 8 chi-squares (X^2) Analysis of the Relationship between availability and utilization of ICT by students in Federal Polytechnic Nekede, Owerri.

Variables	No of items	Cal –X^2	Crt-X^2	df	P-value	Decision
Availability and Utilization of ICT by students	10	69.13	40.11	27	0.05	5

On the application of Chi-Square statistical formula to find out the significant relationship between availability and utilization of ICT by students of Federal Polytechnic Nekede, Owerri. The chi-square calculated value at 0.05 level of significance and 27 degree of freedom. Chi-square calculated value of 69.133 was found to be greater than the critical value of 40.11 (x^2 cal = 69.13≥ x^2 tab=440.11). The shows that there is a significant relationship between availability and utilization of ICT by students of Federal Polytechnic Nekede, Owerri.

DISCUSSION

There are different types of ICT facilities available in the Federal Polytechnic Library Nekede, Owerri. This is because scanning machines are available in their ICT library; they use printers in their ICT library because it is available and online public access (OPAC) is not available in their ICT library. The findings core in line with Chika (2005) that the internet operates with OPAC which is an automated retrieval system made possible through online searching. Oko (2009) in his own report stated that ICT tools remain veritable means for any nation to achieve greatness without which it maybe difficult to explore full potentials in today's world. For Ekoja (2007), ICT facilities have offered opportunities to librarians and other information management specialists in the discharge of their duties include e-mails, voice mails, teleconferencing, telefacsimile, CD-Rom as well as other electronic based devices whose uses depend largely on telecommunication facilities. Idowu and Mabawonku (1999), stated that both academic and research libraries in Nigeria use ICT facilities like computers, CD-Roms and microforms in libraries because they facilitate their services operations. Odufuwa (2006) in his report stated that ICT tools like computers, digital camera, scanners, printers and mobile phones with Wireless Application Protocol (WAP) core relevant in the area of research and information dissemination. To Edom (2007) both low and high level ICT facilities through one way or the other facilitate the sourcing, gathering, processing storage, presentation, retrieval, transmission and dissemination of information. There studies clearly corroborate the findings of this study that various ICT facilities core available, in Federal Polytechnic Library Nekede, Owerri.

Uses of ICT by Students

To ascertain this, Table 5 revealed that students in Federal Polytechnic Nekede, Owerri use ICT library to retrieve information to make research and to chat with friends. Ogunsola (2004), the use of ICT overcomes barriers of space and time and opens new possibilities for learning. The author further stated that the utilization of ICT is increasing and it is possible to deliver training to a widely dispersed audience by means of on-demand two way video over

terrestrial broadband networks. To Kvebekke (1998), the use of ICT in academics plays a fundamental role in academic research projects. Alasa and Ibenne (1998) stated that the use of ICT in research in particular provides access to experienced and expert individual in thousands of field and access to regular up-dates of topics of interest. Edom (2007) also asserts that ICT contributes to effective learning and enhances the quality of teaching. According to Yusuf (2005) ICT provides opportunities for students to communicate with one another through e-mail mailing list and chat room. It provides quicker and easier access to more expensive and current information and can be used to carry out complex mathematical and statistical calculations.

The challenges of Availability and Utilization of ICT Library

The result of data analysis on Table 6 showed that unreliable telecommunication networks, insecurity in the library and epileptic power supply are the determinate factors in the provision of ICT library. This conforms with Uzoigwe (2004) that the hopeless state of library funding in Nigeria has left the cankerworm being christened financial squeeze, this is to tell us what mess the Nigerian library system has been thrown into with this situation, these librarians do not meet up with their naturally assigned traditional roles not to talk of applying the ever sophisticated information technology system. Unagha (2011) stated that, the epileptic power supply is so common to developing countries and can cause serious damage to the computer hardware and crashing of huge database. Okoye (2004) in his own report stated that many librarians in this country lack internet web navigational skills. This is compounded with the fact that the internet could be disorientating due to information overload and deficiency of categorization. To Hoffmann (1995) lack of competent staff is one of the most important factors for successful implementation of information technology is the level of competence of the staff. To Ramara (2004), most of the library personnel do not have adequate level of knowledge and competence of ICT application in libraries.

CONCLUSION

In the light of the findings above, the following conclusions were drawn

   i.   The ICT facilities are available to the students in Federal Polytechnic Library Nekede, Owerri.

  ii.   The ICT are used by students in different categories such as retrieval of information, chatting with friends and making researches.

 iii.   That number of problems militate against the availability and utilization of ICT by students in Federal Polytechnic Library Nekede, Owerri.

 iv.   That there is a significant relationship between availability and utilization of ICT by students in Federal Polytechnic Library Nekede, Owerri.

Recommendations

Based on the findings and conclusions of the study, the following recommendations were proposed.

i.   The speed of connecting to the internet should be very fast. Internet owners should use or subscribe to rather fast servers to enhance efficient performance. This will also save time of the users and give adequate value to their money.

ii.   The charges for assessing the internet should be moderate in order not to scare people from using the internet.

iii. The government especially Power Holding Company of Nigeria (PHCN) should ensure regular power supply to reduce too much overhead incurred by school management on fuel and generator maintenance.

iv.   More computers should be made available. This will make more rewarding search of information via the internet in that the information that one computer cannot completely showcase can be dug out by another computer.

v.   Good screening blinds should be provided to protect the eyes of users from damaging and avoidable eye problems.

vi.   Students at all levels should also see it as a matter of urgency and great importance to acquire ICT skills as this will help them to be more productive and vast in all ramification of knowledge.

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