AN APPRAISAL OF POLYTECHNIC LECTURERS USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN EDUCATIONAL INSTITUTIONS

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Abstract

This study sought to appraise the polytechnic lecturers' use of ICT in educational institutions. The study adopted case study design in studying ICT use of 78 academic staff of the school of technology, Benue state Polytechnic, Ugbokolo .The academic staff responded to ICT application through a questionnaire developed by the researchers and validated by experts. The data obtained were subjected" to descriptive statistical analysis. The results showed that the lecturers have access to computer and internet more at the polytechnic than at home. Factors identified as hindering effective use of ICT by the lecturers include lack of regular power supply, lack of training in ICT and internet use. It was recommended that creating awareness on the need for ICT literacy, proper training of lecturers on the use of ICT equipments, as well as provision of regular power supply should be adopted as strategies for motivating and sustaining lecturers' interest in the use of ICT for teaching and learning. '

Policy makers in Nigeria recognize the need for tertiary institutions to pursue the goal of teaching as well as generating and disseminating of knowledge as means of achieving the goals of tertiary education in Nigeria (FRN, 2004).For this dream to be achieved, lecturers at the tertiary institutions need to have good knowledge and skills in education and particularly Information and Communication Technology (ICT), which would enhance their performance in teaching. The need for lecturers in the higher institutions to acquire knowledge and skills in research has been emphasized world wide. In line with that, Odili (2006) maintained that in a changing society such as Nigeria, no discipline can remain relevant if the frontiers are not periodically improved upon. Obioma (1987), opined that without research, lecturers would remain obsolete in teaching and learning and would not be up-to-date in their instructions.

ICT is concerned with the storage, retrieval, manipulating, transmission or receipt of digital data. It covers any product that stores, retrieves, manipulates, transmits or receives information electronically in a digital form. The need for the use of ICT in research and education is beneficial for preparing the lecturers and students to be fully involved and be productive members of a world that has been and will continue to be transformed by technology (Gregorian, 2002). He opined that almost every aspect of scholarship, from research activities to dissemination of ideas has been influenced by technology at the high level of education. The implication of this is that, it is possible through ICT to instantly access useful information for research through internet. This is to say that since ICT can change the nature of tertiary education and everyday life, it is possible that lack of it would be grievous for individual teachers and the society in general. In its practical sense, lecturers who lack the basic ICT skills are likely to be ineffective in research activities.

Ohakwe (2004), noticed in his study conducted on "using ICT to support learning and teaching of mathematics" that apart from word processing, many lecturers do not know how to operate computer application software, such as Microsoft word, Microsoft Excel, Microsoft Access, Microsoft PowerPoint, Microsoft outlook, internet Explorer, among others. In the light of the effort being made by the Benue State Polytechnic to make lecturers ICT literate, it is therefore necessary to investigate the extent to which these lecturers use ICT for research, and obstacles that hinder effective utilization of the ICT provided in the Polytechnic library. This study is significant because of the need to close the gap between lecturers who possess necessary ICT skills and those who do not, as well as providing those lecturers data that would enable them and the Polytechnic Management to measure the impact of previous training on ICT use, effectiveness of current strategies and initiate better approaches to facilitate teaching and leaning.

The researchers to the best of their knowledge are not aware of any study directed towards finding out Polytechnic lecturers' perception of their use of ICT in conduct of any educational research in the study area. Therefore, the purpose of this study is to determine the extent to which the

Polytechnic lecturers use ICT facilities for educational research.

Research Questions

The following research questions guided the study

1. Do Polytechnic lecturers have access to ICT facilities?
2. How often do the lecturers use ICT facilities in educational research?
3. To what extent do the Polytechnic lecturers use the ICT facilities?
4. To what extent do the lecturers have confidence in the use of ICT facility in Educational research?
5. What are the factors hindering lecturers use of ICT facilities in Educational research?

Methodology

The study is a case study of academic staff of the school of Technology, Benue State Polytechnic, Ugbokolo. The population consists of 78 academic staff of the school of Technology under study. Six of them are chief lecturers, one principal lecturer, 10 senior lecturers, 10 lecturer 1,13 lecturer II, 12 lecturer 111, five assistant lecturers and 12 Technologists. While nine of them did not indicate their ranks. 70 of the lecturers are Male while eight are females.

The instrument for data collection is a questionnaire developed by the researchers and validated by three experts, one from measurement and Evaluation and the other two from computer science department. The instrument consists of five sections, A,B,C,D, and E. part 1 seeks background information from the lecturers, section B has 17 items on frequency of use of ICT application in educational research and requires lecturers to indicate the extent to which they use each of the applications. Using a four - point scale: Never =1, not Regular =2, fairly Regular =3, and Very Regular =*4*. Part 2 seeks information on lecturers' use of ICT application for different research activities and required lecturers to indicate their responses using the foflowing four - point scale: No intention of using them =1, likely to be in the next one to two years=2, beginning to use them =3, well establish in using them =*4*. part 3 consists of 17 items, which seek information on lecturers' confidence in the use of ICT in educational research, required lecturers to indicate their perceived level of confidence in the use of ICT for educational research using the following four-point scales: Never =1, not confident -2, fairly confident =3, Very confident =*4*. Part 4 consists of 13 items, which sought information on obstacles to lecturers' use of ICT for educational research using modified likert scales: strongly Disagree=1.Disagree=2, Agree-3, strongly Agree=4. The reliability alpha coefficient of .90, .88 .85 and .83 obtained for parts 1,2,3, & 4 of the instrument indicate that the instrument is highly reliable. The researchers personally administrated the questionnaire on the lecturers and the data collection lasted for five days. Based on the 4-point rating scales, the mean and standard deviation of the lecturers' responses for each item were computed.

Results

The result of the data analyzed for answering the five research questions raised in the study are presented in Tables 1-5. Table 1 shows that the Polytechnic lecturers have greater Access to computer and internet in the polytechnic than at home.

Research **Question 1**

Do polytechnic lecturers have access to ICT facilities?

Table 1

Percentage Distribution of Lecturers According to Access **to ICT**

ICT Access Access to;	Yes N %	No N %	Omit N %	Total N %
Computer at home	100 35	60 45	54.80 10	13.5 88
Computer in Poly	100 82	55 62.50	35	15 16.40
Internet at home	100 12	13.5 '68	95	16 88
Internet in Poly	100 77	87 18.20	20 13	13.80 88

From the above it was revealed that lectures have greater access to computer and internet in the polytechnic than at home.

Research Question 2
How often do the lecturers use ICT facilities in educational research?

Table 2
Mean and Standard Deviation on Frequency of use of ICT in Educational Research.

S/N	ICT Facilities	Mean	SD	Decision
1.	Microsoft word Processing	2.55	1.01	Fairly used
2.	E-mail for sharing resources	2.80	0.89	Fairly used
3.	Multimedia	1.56	1.30	Minimal
4.	Microsoft power point	1.09	0.59	Minimal
5,	Web page	1.68	0.78	Minimal
6.	Personal website	1.66	0.99	Minimal
7.	Polytechnic website	2.55	1.66	Fairly used
8.	Databases	1.68	0.83	Minimal
9.	CD- Rom	2.00	0.90	Minimal
10.	World wide web	2.22	1.05	Minimal
11.	Website for research	1.59	1.01	Minimal
12.	Excel spreadsheet	1.77	0.88	Minimal
13.	Internet	2.65	1.18	Fairly used
14.	Statistical analysis software	1.52	0.88	Minimal
15.	Graphical software	1.54	0.78	Minimal
16.	Digital Scanner	1.29	0.65	Never used
17.	Digital Camera	1.42	0.66	Never used

Table 2 shows that the use of Microsoft word processing, Polytechnic Website and the Internet are fairly regular than other ICT Facilities.

Research Question 3
To what extent do the Polytechnic lecturers use ICT facilities?

Table 3
Mean and standard Deviation of use of ICT Facilities for Educational Research Activities.

S/N	Educational Research Activities	Mean	SD	Decision
1.	Seeking Research Grant	2.85	4.58	AU
2.	Review of related literature	3.10	0.80	AU
3,	Problem Identification	2.53	0.70	AU
4.	Formulation of Hypotheses	2.40	0.80	LB
5.	Research Reports at Seminal /conferences	2.51	0.73	AU
6.	Design of Research Study	2.50	0.80	AU
7.	Data Collection	2.59	0.82	AU
8.	Organization of Data	2.55	0.71	AU
9.	Statistical Analysis of data	2.60	0.83	AU
10.	Drawing of conclusion	2.47	0.88	LB
11.	Research Report Writing	2,37	0.58	LB
12.	Dissemination of Research Findings	2.34	0.75	LB
13.	Watching out for plagiarism	2.33	0.72	LB
14.	Grant -Aid of Research Proposal	2.23	0.68	LB
15.	Presenting Data Analysis	2.40	0.80	LB
16.	Publication of on-line Research articles	2.22	0.77	LB
17.	Proposal Writing for Funds	2.55	0.81	AU

Note. LB- likely to begin soon (1.5-2.49); AU = Already in use (2.50-3.49)

Table 3 shows that lecturers are beginning to use ICT application in different activities and even for research purposes.

Research Question 4
To what extent do the lecturers have confidence in the use of ICT facilities in educational research?

Table 4
Mean and Standard Deviation of conference in use of ICT in Educational Research.

S/N	ICT Facilities	Mean	SD	Decision
1.	CD-Rom	2.25	0.95	NC
2.	Microsoft word processing	2.75	1.11	FC
3.	World wide web (w w w)	2.55	0.90	FC
4.	Data Bases	2.25	0.95	NC
5.	Digital camera	2.08	0.97	NC
6.	Digital scanner	2.11	0.82	NC
-7.	Research for funding agencies	2.09	0.98	NC
8.	Excel spreadsheet	2.03	0.99	NC
9.	Polytechnic website	2.40	0.90	NC
10.	Personal website	2.08	0.97	NC
11.	Web page	2.03	0.99	NC
12.	Microsoft power point	2.22	LOO	NC
13.	Multimedia	2.11	0.82	NC
14.	E-male for sharing	2.50	0.94	FC
15.	Graphic software	2.37	0.85	NC
16.	Statistical analysis software	2.03	0.99	NC
17.	Internet	2.80	1.10	FC

Note. NC =not confident (1.50-2.49); FC - fairly confident (2.50-3.49)
The results in Table 4 above show that the lecturers are fairly confident in the use of Microsoft word processing, World Wide Web, E-mail to support collaborative writing and sharing of resources, and internet for Educational research.

Research Question 5
What are the factors hindering lecturers use to ICT facilities in educational research?

Table 5
Mean and Standard Deviation on Factors hindering use of ICT in Educational Research.

A/N	Limiting Factors	Mean	SD	Decision
i.	Insufficient time to plan how to use internet	2.60	0.89	A
2.	Inadequate knowledge of what to do with internet	2.58	0.90	A
3.	Inadequate knowledge of what to do with computer	2.56	1.08	A
4.	Difficulties in getting access to internet	2.40	1.01	DA
5.	Difficulties in getting access to computer	2.22	1.16	DA
6.	Insufficient time to plan how to use computer	2.68	0.95	A

7.	Negative attitude towards the use of ICT	2.22	1.16	DA
8.	Anxiety on how to use computer application	2.26	1.02	DA
9.	Lack of constant power supply	1.90	0.95	DA
10.	Lack of training to use ICT application	2.80	0.88	A
11.	Lack of use of internet in ICT application	1.80	0.90	DA
12.	Lack of confidence in the use of computer	2.26	1.02	DA
13.	Lack of confidence in the use of internet	2.30	1.04	DA

Note; A ^Agree (1.50-2.49); DA= Disagree (2.50-3.49);

The results in Table 5 show that lecturers agreed that the following Factors limit their use of ICT in Educational research: lack of constant supply of power, inadequate knowledge of what to do with computer and internet in Educational research, insufficient time to plan how to use computer and internet, and as well as lack of training in use of ICT applications in Educational research.

Discussion

The study was conducted to appraise Polytechnic lecturers' use of ICT in educational research. The answer to research question one regarding lecturers' access to ICT revealed that they have greater access to computer and internet in the Polytechnic than at home. This confirms the earlier claim that ICT facilities are available in the Polytechnic library (Murphy and greenwood, 1998).

The finding that the lecturers use Microsoft word, Polytechnic website and the internet fairly regularly and do not use the other applications regularly corroborate Ohakwe's (2004) findings that lecturers do not know how to operate computer application software apart from word processing. It also revels that the lecturers ICT training needs, which should guide the Polytechnic administration in planning and sponsoring ICT workshops and conferences for staff training and development.

The finding from research question three that lecturers are beginning to use ICT application in different activities indicate that they are becoming aware of the need to utilize JCT in research. This awareness should be sustained and encouraged through regular training to make the lecturers more innovative and productive in teaching and research.

The answer to research question four that lecturers are fairly confident in the use of Microsoft word processing, world wide web, E-mail and the internet alone also suggests the need for adequate training of lecturers on ICT use in teaching and research which is regarded as an important challenge for lecturer training institutions (Murphy and greenwood, 1998).

The finding that lack of regular power supply, insufficient in the use of ICT as factors hindering effective use of ICT in educational research has implications for the Polytechnic administration and the lecturers. The Polytechnic administrations should plan how to provide regular power supply for ICT use for teaching and research as well as how to train lecturers on ICT use to equip them with necessary skills and knowledge. This would enable them perform their duties effectively on lecturers and researchers. The lecturers, on their own part, should create and manage time effectively to be able to cope with the challenges of tasks ahead of them.

Conclusions

The study has shown that lecturers in the school of technology, Benue State Polytechnic, Ubgokolo have access to computer and internet in the Polytechnic and are beginning to use some ICT applications in educational research, although the level of utilization is relatively low. The study also identified the ICT skills and knowledge needs of the lecturers as well as some factors that hinder effective utilization of available facilities. Based on the findings of the study, the Polytechnic discover priorities for encouraging lecturers to adopt ICT in performing their duties as lecturers, Planners, Managers and researchers.

Recommendations

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

1. The Polytechnic should ensure that the ICT policy is properly implemented and regularly monitored.
2. The Polytechnic should meet the ICT training needs of the lecturers through sponsorship of workshops and seminars and attendance of such seminars should be made compulsory for lecturers.
3. The Polytechnic should provide regular power supply for effective use of ICT applications for teaching and research.
4. ICT awareness programme on the need for computer literacy, acquisition of computer, effective use of band width, and application of ICT in teaching and research should be mounted in the Polytechnic.
5. Above all, lecturers should learn to manage and use their time more effectively in order to be able to cope with the challenge of teaching and leaning in the Polytechnic.

References

Federal Republic of Nigeria (2004). *National policy on education,* Abuja; NERDC.

Gregorian, V. (2002). *Succeeding in the 21" century, what higher education must to address the gap in information communication technology proficiencies.* Key note address presented at the white house conference on school libraries. Service, Retrieved May 2,2006 from www. Inilms. Gor /Pubs/ white house 0602 / Gregorian.Htm.

Murphy, C. & Greenwood, L. (1998). Effective integration of information and communication technology in teacher education. *Journal of information technology for teacher education, 7(3).*

Obioma, G, O. (2006). Introduction to educational research. In G. O. Obioma (ed.). *Research Methodology.* Ibadan; Heinemann Educational Books.

Odili, G. O. (2006). *Mathematics in Nigeria secondary school. A teaching perspective,* Port Harcourt: Anachuna Educational Books.

Ohakwe, S. N. (2004). Emerging issue and concepts in the computer world ; implication for National Diploma Business programmes in Nigeria. *Journal of curriculum organization of Nigeria. (1),* 82-86.