

African Research Review

An International Multi-Disciplinary Journal, Ethiopia

Vol. 3 (2), January, 2009

ISSN 1994-9057 (Print)

ISSN 2070-0083 (Online)

ICT in University Education: Usage and Challenges among Academic Staff (*Pp. 404-414*)

Archibong, Ijeoma Aniedi - Dept. of Educational Foundations & Administration, Faculty of Education, Cross River University of Technology, Calabar Campus, Calabar, Nigeria. Box 368 HEPO, State Housing Estate, Cross River State, Calabar, Nigeria. anije1997@yahoo.com

David Otu Effiom - Dept. of Educational Foundations & Administration, Faculty of Education, Cross River University of Technology, Calabar Campus, Calabar, Nigeria david.effiom@yahoo.com

Abstract

This study was a survey which explored ICT usage and challenges among academic staff. Thus, the main purpose of this study was to determine the areas of ICT usage among academic staff; identify the obstacles to their ICT usage and identify their areas of training need in ICT usage. Five research questions were posed to guide this study and a questionnaire was designed to collect data from a sample size of 80 academic staff. From the results, academic staff indicated that ICT is of much help to them in the areas of upgrading of knowledge, research and publication. Weak infrastructure, financial constraints and lack of access to ICT facilities were identified as the major obstacles to ICT usage among academic staff. Furthermore, designing of new learning activities, electronic presentation of materials and making use of internet were identified as their areas of train need in ICT usage. Recommendation made include providing compulsory free, adequate training opportunity for academic staff by the university management.

Introduction

In today's competitive global information –based economy, much pressure is on the university to produce graduates capable of functioning in the new world economic and societal environment brought about by technological developments. In order to meet up with societal demands, universities around the world are moving rapidly to incorporate information and communication technologies (ICT) into all aspects of their core business of teaching and learning (Bates, 2001; Ryan, Scott, Freeman & Patel, 2000). The zeal by governments and university managers to inculcate ICT into the educational process is due to the gains it yields both to the teachers and learners. Carlson and Gadio, (2000) opine that teachers who succeed in making use of ICT in their work process do not only contribute to improved learning outcomes in their students, but also benefit personally from enhanced work productivity , reduced isolation and increased professional satisfaction. Further more, Radloff (2001) highlights the opportunities that ICT presents for enhancing the quality of teaching and learning to include:

- Providing encouragement for staff and students to reflect on how they teach and learn.
- Applying theory and research on learning and principles of good instruction to designing online learning environments.
- Making teaching (and learning) more visible and public.
- Encouraging collaboration and team work among staff (and students).
- Offering greater access to learning for more people.
- Increasing the skills and status of university teachers.

The realization of the benefits of ICT in the educational process to a large extent depends on the academic staffs that play crucial role in any innovation that takes place in the educational system. Acquisition and utilization of ICT in the teaching-learning process poses a great challenge to academic staff because it requires them to continuously adapt to the changes brought about by the technological revolution. To this end, Salman (2004) in Schneckenberg and Wildt (2006) are of the view that academic staff need to be aware of, and understand, the innovative potential of the technology that is available for their research and teaching and that they need to develop specific, appropriate and new competences to cope with the technological challenges in their workplace. In order to accomplish this and take advantage

of the potential of ICT, Juwah and Norticote (2002) maintain that it is imperative that university teaching staffs are provided with assistance to develop the necessary repertoire of skills required to use the new technologies, whether they be online (using internet technology) or offline (using static computerized technology).

Background to the Study

The Cross River University of Technology hereafter referred to as CRUTECH was established in August, 2002 through the Cross River state Executive Bill NO. 9 of 2002 and later amended as Bill NO. 6 by the Cross River State House of Assembly. CRUTECH which took off in principle on September 1, 2002 emerged from the amalgamation of the three former state owned tertiary institutions namely: the polytechnic, Calabar; the college of education, Akamkpa, and the Ibrahim Babangida College of agriculture, obubra. Each former institution became a campus of the new university. A fourth campus was located at Ogoja. The merger of these institutions to form a multi-campus university involved campuses spanning over 400km from the Northern extreme of the state in yala through Ogoja, Obubra, Akamkpa and Calabar. The rationale for this decision was the State government's quest to move the state forward technologically. Hence, the establishment of a multi-campus university with the mission of producing well trained graduates and researchers in science and technology, equipped for active participation in socio-economic development.

In line with this vision and to ginger staff interest in ICT, the Cross River State government encouraged the acquisition of computers (laptop or desktop) for academic staff by allowing the payment to be made by instalment over a period of two years. Additionally, scholarships are awarded for higher degree to academic staff in technological-based discipline. On the part of the university management, efforts were made to replace typewriters with computers in all faculties, departments and units of the university. ICT centres (internet café) have been established in all the four campuses of CRUTECH. Also, the university runs a consultancy outfit which provides Training in ICT as part of its services.

In addition to the efforts of the state government and university management, the Academic Staff union of CRUTECH in a bid to motivate academic staff to show interest in ICT also arranged for its members to acquire laptops and pay a fixed amount monthly until completion of payment.

Based on the foregoing, this study aims at finding answers to the following questions:

1. What number of academic staff has personal computers (laptop/desktop)?
2. Where do academic staffs have access to internet?
3. What areas has ICT helped academic staff?
4. What are the obstacles to academic staff ICT usage?
5. What areas of training in ICT do academic staffs need?

Methods

The design for this study was survey. The subjects, 80 in numbers were drawn from a population of 230 academic staff in CRUTECH through the accidental method. Staffs were approached in their offices and those willing to respond to the research instrument were allowed to do so. The use of this sampling method is because of the ease it afforded the researchers.

The researchers used the Information and Communication Technology Questionnaire (ICTEQ) for academic staff to collect data for the study. The ICTEQ consist of 5 major items. Item 1 sought to know how many academic staff had computers (laptop/desktop). Item 2 asked question on where academic staff accessed internet services. Item 3 had seven sub-items measuring areas ICT has helped academic staff. Subjects were to indicate the extent of help by responding as follows: Much help; little help; and No help. Item 4 had 8 sub-items measuring the obstacles to ICT usage among academic staff. Respondents were required to indicate the level of obstacle by responding as follows: Major obstacle; Minor obstacle; and No obstacle. Finally, item 5 had five sub-items measuring the areas which academic staff need training in ICT usage. Subjects were required to indicate training need by 'Yes' or 'No' response.

The face validity of the research instrument was done by first subjecting it to the critique of experts in Faculty of Education, CRUTECH before being used for the study.

Data analysis was guided by thee research questions. The simple percentage statistical method was used in the analysis and the results are presented below.

Results and Discussion

For the purpose of ease of understanding, the results are presented and discussed research question by research question.

Research Question 1: *What number of academic staff has personal computers (laptop/desktop)?*

From the findings as presented in table 1, only 42(52.5%) of the respondents had personal computers (laptop/desktop) while 38(47.5%) did not have.

Research Question 2: *Where do academic staffs have access to internet?*

In terms of access to internet, 73(91.25%) had access to internet through public cyber café, 4(5%) had access at home while 3 (3.75%) indicated they had access to it at school. (See table 2) Despite efforts by the state government and the academic staff union in providing cheaper means for academic staff of CRUTECH to have access to personal computers, it is surprising that over 47% of academic staff in this study do not have computers. Furthermore, the high percentage of staff patronage of public cyber café could be explained by the non functionality of the existing internet café in the various campuses of CRUTECH, which could have encouraged more frequent usage by academic staff.

Research Question 3: *What areas have ICT helped academic staff?*

In answer to this question, the researchers made the frequency count of subjects' response to item 3 of the ICTEQ. The findings are presented in Table 3.

The findings in table 3 revealed that ICT is of much help to the academic staff in the areas of upgrading of knowledge 72(90%); research 70(87.5%); publication 62(77.5%) and sending of e-mails 60(75%). Plausible explanation for the high percentage scores in these areas could be because these areas are personal to the academic staff and their career development hinges to a large extent on how well they do in the factors under consideration. In order words, where an academic staff does not upgrade his knowledge, research and publish, such an individual will not meet the promotion criteria of CRUTECH and as such will become stagnated.

Interestingly, the academic staff indicated that ICT is of little/no help to them in the areas of organization of student data 53(65%); giving of assignments to students 56(70%) and preparing of course outline/content 51(63.75%), see column 4 of table iii. This finding is shocking given the fact that academic staffs are required to use ICT knowledge in the teaching-learning activities as well as encourage their students to appreciate the opportunities ICT offers. The negative result could also be attributed to the state of ICT facilities within the university campuses. The internet facility functions once in a while but mostly it is out of service.

Research Question 4: *What are the obstacles to academic staff ICT usage?*

For answer to the research question on obstacles to staff use of ICT, the frequency count/percentage score of subjects' response to item 4 in ICTEQ are presented in table 4.

Results in table 4 revealed that weak infrastructure 65(81.25%); financial constraints 47(58.75%); and lack of access to ICT facilities 37(46.25%) are the major obstacles to ICT usage by academic staff. The combination of major and minor obstacles to ICT usage among academic staff as indicated in column 3 of table iv showed that in addition to the first three major obstacles, lack of operational knowledge and skill 58(72.5%); no training opportunity 53(66.25%); insufficient time for practice 52(65%) and inability to keep abreast with present technological changes/demands 49(61.25%) are also key obstacles to ICT usage. The plausible explanation for the high percentage score (81.25%) in weak infrastructure, particularly power failure is that ICT usage is highly dependent on availability of power (electricity). Unfortunately, the supply of this in Nigeria is very epileptic which makes owning a power generator mandatory. This fact coupled with financial constraints 47(58.75%) explains why academic staff indicated it as a major obstacle since they cannot afford to buy the power generator nor the ICT facilities.

Again, lack of training opportunities was cited as an obstacle. It should however be noted that CRUTECH runs a consultancy service that offers ICT training as part of its services, but any participant including academic staff are required to pay the stipulated training fee. In view of financial constraints observed in the study, and the cost of training, little wanders then that academic staff (72.5%) lack the operational knowledge and skill and are unable to keep abreast with present technological changes. To remedy this

situation Pelgrum and Law (2003) maintain that continuous staff development should be financed as an integral component in any education budget to ensure that schools have the capacity to undertake continuous improvement.

Worthy of note is the fact that 55(68.75%) of the academic staff indicated that lack of interest is not an obstacle to their ICT usage. In a study, Gülbahar (2008) found that almost all the academic staff (99%) was willing and ready to participate in any course, seminar, and workshop about technology usage. In the case of academic staff in CRUTECH, a keen interest in acquisition of ICT knowledge is indicated by this result but the wherewithal is the problem.

Research Question 5: *What areas of training in ICT do academic staffs need?*

The findings with respect to this question are presented in table 5.

Academic staff indicated above 60% training need in ICT in all the inquired areas. A close examination of table v show that designing of new learning activities 66(82.5%) ranked first in training need, this was followed by electronic presentation of materials 60(75%); making use of internet 54(67.5%); office application 53(66.25%); and sending of e-mails 50(62.5%).

This result is rather worrisome given the mission of CRUTECH and the key role academic staff must play in order to achieve it. A situation where academic staff still lack skill and require training in basic ICT areas such as use of office application and making use of internet indicate that a lot still needs to be done for academic staff development in the area of ICT usage. Carlson and Gadio (2002) observed that while teacher professional development is woefully under funded generally, the situation of training in technology is much worse, as policy makers operating within the budget constraints tend to give priority to hardware and software acquisitions. This fact seem to be the case with CRUTECH as effort has been directed at acquisition of ICT facilities but minimal effort directed at the training of academic staff.

Conclusion

From the findings in this study, the following conclusions are drawn:

1. Relatively high percent of academic staff do not have personal computers.
2. Access to internet by academic staff was mainly at public cyber café compared to school and home.
3. ICT has helped academic staff in the major areas of upgrading of knowledge, research and publication.
4. The major obstacles to ICT usage among academic staff are weak infrastructure – power failure, financial constraints and lack of access to ICT facilities.
5. The areas of training need in ICT usage among academic staff are designing of new learning activities, electronic presentation of materials, making use of internet and office application.

Recommendations

Based on the findings and conclusions drawn in this study, it is hereby recommended that:

1. CRUTECH management should make free, adequate training opportunity available to academic staff. Such training should be focused on staff ICT areas of need identified in this study. Again, in view of constant change in technology, the training of staff should not be a one- shot programme but a continuous staff development programme should be put in place to ensure that academic staff is continuously improved.
2. Government should adequately fund the university so that ICT facilities existing in the campuses can be serviced to function effectively, hence granting access to staff.

References

- Bates, T. (2001). The continuing evolution of ICT capacity: the implication for education. In G. M. Farrell (Ed.), *The changing faces of virtual education* (pp. 29-46). Vancouver, Canada: The commonwealth of learning.
- Carlson, S. & Gadio, C. T. (2002). Teacher professional development in the use of ICT. In Haddad, W. D. & Draxler, A. (Eds.), *Technology for education*. (pp. 118 – 132). Washington, DC: UNESCO; Academy for educational development.
- Gülbahar, Y. (2008). ICT usage in higher education: A case study of preservice teachers and instructors. *The Turkish online journal of educational technology*, 7(1) (www.google.com); July, 2008.
- Juwah, C. & Northcote, M. (2002). Devising strategies for enhancing quality staff development in embedding ICT in teaching and learning. HERDSA 2002 (pp. 384 -392). (www.google.com); July, 2008.
- Pelgrum, W. J. & Law, N. (2003). *ICT in education around the world: Trends, problems and prospects*. UNESCO: International institute for educational planning.
- Radloff, A. (2001). Getting online: The challenges for academic staff and institutional leaders. (www.google.com); August, 2008.
- Ryan, S., Scott, B., Freeman, H. & Patel, D. (2000). *The virtual university: The internet and resource-based learning*. London: Kogan Page.
- Schneckenberg, D. & Wildt, J. (2006). Understanding the concepts of eCompetence for academic staff. (www.gogle.com); July, 2008.

Table 1: Respondents acquisition of computers (N = 80)

Ownership of computer	Yes 42 (52.5%)	NO 38 (47.5%)
-----------------------	-------------------	------------------

Table 2: Respondents access to internet (N = 80)

Location of access to internet	School 3 (3.75%)	Home 4(5%)	Public cyber café 73(91.25%)
--------------------------------	---------------------	---------------	---------------------------------

Table 3: Extent of ICT help to respondents (N= 80)

S/n	Item	MH	LH	NH	LH & NH Combined
1.	Upgrading of knowledge	72 (90%)	6(7.5%)	2(2.5%)	8 (10%)
2.	Organization of student data	28(35%)	34(42.5%)	18(22.5%)	52(65%)
3.	Giving of assignments	24(30%)	37(46.25%)	19(23.75%)	56 (70%)
4.	Preparation of course outline/content	29 (36.25%)	33(41.25%)	18(22.5%)	51(63.75%)
5.	Research	70(87.5%)	8(10%)	2(2.5%)	10 (12.5%)
6.	Publication	62 (77.5%)	15(18.75%)	3(3.75)	18(22.5%)
7.	Sending of e-mail	60 (75%)	13(16.26)	7(8.75)	20(25%)

MH = Much help; LH = Little help; NH= No help

Table 4: Obstacles to ICT usage among academic staff (N= 80)

S/N	Item	MJO	MIO	MJO& MIO Combined	NO
1.	Lack of operational knowledge and skill	28 (35%)	30(37.5%)	58(72.5%)	22(27.5%)
2.	No training opportunity	26(32.5%)	27(33.75%)	53(66.25%)	27(35%)
3.	Insufficient time for practice	25(31.25%)	27(33.75%)	52(65%)	28 (35%)
4.	Lack of Interest	7(36.25%)	18(41.25%)	25(22.5%)	55(63.75%)
5.	Inability to keep abreast with present technological changes/demands	19(23.75%)	30(37.5%)	49(61.25%)	31(38.75%)
6.	No access to ICT facilities	37 (46.25%)	16 (20%)	53(66.25)	27 (33.75%)
7.	Weak Infrastructure e.g. power failure	65 (81.25%)	10 (12.5%)	75 (93.75)	5(6.25%)
8.	Financial constraint	47 (58.75%)	24 (30%)	71 (88.75)	9(11.25%)

MJO = Major obstacle; MIO = Minor obstacle ; NO= No obstacle

Table 5: Areas of training need in ICT among academic staff (N = 80)

S/N	Item	YES	NO
1.	Office application	53(66.25%)	27(33.75%)
2.	Sending of e-mails	50(62.5%)	30(37.5%)
3.	Making use of internet	54(67.5%)	26(32.5%)
4.	Electronic presentation of materials e.g. lecture	60(75%)	20(25%)
5.	Designing of new learning activities	66(82.5%)	14(17.5%)