A Study of Present ICT Use among Staff in Nigerian Colleges of Education For The Purpose Of Determining a Human Resource Development Plan

Francisca N. Ogba[1], Ntasiobi C. N. Igu[2], Basake J. Alochere[3]

1 Department of Educational Foundations,
   Ebonyi State College of Education, Ikwo
2 Department of Social Studies,
   Ebonyi State College of Education, Ikwo
3 Department of Educational Administration and Planning
   University of Nigeria, Nsukka

Abstract

This study investigated the present Information Communication Technology (ICT) use among Staff in Nigerian Colleges of Education for the purpose of determining a human resource development plan. The population comprised the entire academic and non-academic staff of the Colleges of Education in South East Geo-Political Zone (1803 academic and 2696 non-academic staff) totaling 4499 staff members. Using a stratified sampling technique, a sample of 870 Staff members (315 academic and 555 non-academic staff) was drawn. A 24 item structured Questionnaire was developed by the researchers, which was titled Present ICT Use among Staff in Nigerian Colleges of Education Questionnaire (PICTSNCEQ). It elicited responses from the staff regarding their ability to use a computer which is a center piece of ICT. Data generated were calculated using the mean and standard deviation to determine the reliability of the data. The cut off mean set for the study was 2.50.The t-test statistic was used to test the hypothesis at a 0.05 level of significance. The findings show that the majority of the academic and non-academic staff of the Colleges appear to lack the necessary skills for using a variety of software including word processing, power point and spread sheet functions. A significant percentage of academic and non-academic staff members do not have a laptop computer. Based on the findings, it was recommended that the staff of the institutions be exposed to ICT training and that Management should help the staff by negotiating with dealers to supply laptops to staff at moderate prices.

Keywords: ICT, Human Resource, Development

Introduction

Teachers constitute the pivot upon which educational systems all over the world depend. According to Agwu (2001) the success of the educational industry and all round development of any country depends to a large extent on the effectiveness and efficiency of the teachers, their quality, quantity and level of devotion. Ogba (2006) contributes that teachers alone cannot do their work effectively without the support of the non-teaching staff, which take stock of inventories, prepare vouchers, and keep records and other administrative activities in the educational system. She further stated that teachers and non-teaching staff work assiduously in their different functions to keep the educational system going by producing high quality manpower. This may be why Anowor (2010) affirms that the validity of any educational system is rooted in the quality of work and availability of competent staff. Suffice it to state that the development of any nation depends largely on the productive force of its human resources produced by the educational institutions.

The emergence of Information and Communication Technology (ICT) in the world, with its revolutionary vision and mission makes it imperative for every organization including educational institutions to have ICT compliant staff. According to UNESCO's (2002) strategic objectives, ICT should help staff to improve the quality of education through the diversification of contents, methods by promoting experimentation, innovation, diffusion, the sharing of information and best practices as well as dialogue with other staff in and outside the institution.

ICT in the world generally, and particularly in Nigeria, has been acknowledged because of its role in making the world a global village which has led to different developments. ICT's acceptability is witnessed in its use in interaction, administration, research, politics, business, sports, music, education, economic, social, military, counseling and religious events directly or indirectly (Adem and Kpangbau, 2011). This may be why Hooker (2009) maintains that ICT is the engine that houses new growth and a tool for empowering societies to shift to a knowledge economy. Emphasizing the importance of ICT, Rayo and Atsuko (2009) aver that access to information and communication has become a central theme in the world summit of the current information society

The indispensability of ICT has made it part of the contemporary world especially in the developed world. Its efficacy has made all societies and organizations irrespective of culture, ethnic and religion to adjust maximally to meet the challenges of this knowledge explosion. Nkwankwo, Obunadike and Ughamadu (2011) affirm that modern day education, government and businesses administration are facilitated through the use of ICT. Nwachukwu (2006) states that the pervasiveness of ICT has brought about rapid transformation in human capital development in the field of educational institutions; it provides great opportunities for academic, non-academic and students to communicate effectively and efficiently during formal and non-formal activities. Ololube (2006) states that staff in educational institutions need training not only in computer literacy but also in proper application of various kinds of educational software for the purpose of teaching, learning and non-teaching activities. In addition, Nwachukwu (2006) maintains that staff in educational institutions needs to know how to integrate ICT in their school activities.

The World Bank (2007) sees ICT as the hardware, software, networks and media for the collection, storage, processing, transmitting, transmission and presentation of information (voice, data, text, images) as well as related services. Nwachukwu (2011) defines ICT as electronic gadgets used in accessing and sharing information. Beebe (2004) conceives of ICT as an electronic gadget which involves the use of computer, internet and other telecommunication devices used for sharing information. Synthesizing the above definitions, ICT is the use of electronic and communication devices to source, process and share information. It involves the use of gadgets such as computers, iPod, cameras, telephones, etc. Summed up, it is a basic tool for managing and integrating complex information flow for the purpose of effective job performance. Suffice it to state here that it is an instrument for acquiring knowledge, problem solving, organizing system and sourcing information that aides organizations in meeting international best practices.

Computer, the centerpiece of ICT, is the focus of this study. The overwhelming positive influence of computer application can be observed in teaching, research and administration. To enable the academic and non-academic college staff to perform optimally, the Government and Management have graciously provided computers for use in their offices. However, staff ability to use the computer is yet to be determined, hence the need for this study. The keenness to carry out this investigation was born out of the desire to determine staff ability to use ICT in teacher education programmes in Nigerian institutions using Colleges of Education in the South East Zone as a case study. The overall purpose of this study therefore is to verify the research hypothesis in this study as a basis for encouraging the Colleges to maintain and improve the quality of their staff in rendering quality educational services and in producing human resources that will help develop better computer skills in the discharge of their duties.

Literature related to this topic has revealed that many studies have been done on the various aspects of ICT. Yusuf (2005) investigated teacher's efficiency in implementing computer education in Nigerian secondary schools and reports that most staff in the secondary institutions in Nigeria do not have the necessary experience and competence in the use of computer for educational purposes. He further stated that most male and female staff lacks competence in basic computer operations. Nwankwo, Obunadike and Ughamadu (2011) carried out a study on the relevance of ICT in improving the quality of junior secondary school (JSS) teaching in Onueke Education Zone of Ebonyi Sate. The study found that the teachers were not adequately exposed to ICT. In his report, Nwachukwu (2006) affirmed that some Nigerian teachers have been unable to find effective ways of using computers in their classrooms and other areas of their teaching due to the lack of interest and devotion to acquire the required skills. Ololube (2005) investigated this phenomenon and found that the lack of interest in learning how to use a computer in the classroom was due to the staff not being well informed, encouraged and trained in the use of computer as a means of facilitating teaching. Moreover, Lynch (2002) reports that irrespective of pressure put on staff members to integrate ICT in their teaching activities, many remained reluctant to do so. Awuja-Ademu and Kpangban (2011) believe that the greatest obstacle in the use of ICT in educational institutions is not necessarily the lack of technology or funds but simply unwillingness to use the technology because staff

members may see it as a potential source of stress. Ogba and Igu (2011) investigated staff opinions regarding the use of computers in teaching at the senior secondary level. The results revealed that some staff is less willing to use a computer, based on their belief that ICT is difficult to use.

A synthesis of the above studies shows a relationship with the present study as each focused on an aspect of ICT. However, the difference in content and geographical scope makes this present study highly necessary because of the identified existing gap. Therefore it is against this background that this study is poised to cover the existing gap in knowledge. This study was conducted in Nigeria using Colleges of Education in the South East Geo-political Zone as a case study. This zone is made up of five states namely Abia, Anambara, Ebonyi, Enugu, and Imo. These states have the same cultural affinity and they are agrarian in nature. Secondly they value education which has guided the interest in studying them.

Statement of the Problem

Observations have shown that most staff have computers but are disinterested in using them for the performance of their duties. The researchers are worried that if staff is not kept abreast with the use of computers, it may hinder their professional development and their service delivery may be of poor quality hence, impacting negatively on the growth and development of their institutions. The problem of this study therefore is what is the present use of ICT among staff members in Colleges of Education for effective service delivery?

Research Questions

The study was guided by the following research questions.
1.   What is the Staff members' ability to access information using the computer?
2.   What is the Staff members' ability to store information using the computer?
3.   What is the Staff members' ability to analyze information using the computer?

Hypothesis
One null hypothesis tested at 0.05 degree of significance guided the study.
HO_1:   There is no significant difference in the mean responses of academic and non-academic staff on the   ability of staff members to store information using the computer.

Methodology

The study employed a descriptive survey design. The population comprised all of the 1803 academic and 2696 non-academic staff of the five Colleges of Education in South East Geo-Political Zone of Nigeria, total being 4499 staff members.(Source: Personnel Unit of the Colleges of Education, 2014). Using a stratified random sampling technique 315 academic and 555 non-academic staff was sampled for the study. A 27 item structured questionnaire titled: Present ICT Use among Staff in Nigerian Colleges of Education Questionnaire (PICTSNCEQ) was the instrument used to elicit information from the respondents. Four experts participate in the data collection: two from the Department of Educational Foundations Ebonyi State University; one from the Measurement and Evaluations Department of Nnamdi Azikikwe University, Akwa; and one from Computer Science Department of Ebonyi State College of Education, Ikwo. Their corrections led to the modification of the instrument. The instrument was structured on a 4 point rating scale of Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and Strongly Disagree (SD) = 1. The Cronbach Alpha method was adopted to establish the internal consistency and it yielded a reliability index of 0.81 which was judged to be adequately high for the study. With the help of five research assistants, the researchers administered and collected the questionnaires from the respondents. All were returned duly completed representing 100% return. The return rate was made possible because of the instruction given to the research assistants to ensure on the spot collection of filled questionnaires. The mean and standard deviation were used to determine the reliability of the data the decision rule was that any mean value above 2.50 is accepted while any mean value below 2.50 is not accepted for interpretation. The t-test statistic was used to test the hypothesis at 0.05 level of significance.

Results

<u>Research Question 1</u>
What is the staff members' ability to access information using the computer?
Staff members are able to:

S/N	ITEMS	ACADEMIC							NON - ACADEMIC						
		SA	A	D	SD	X	SD	INT	SA	A	D	SD	X	SD	INT
1.	Boot the computer	99	90	83	43	2.77	43	A	109	138	238	76	2.50		A
2.	Identify search engines without assistance	77	81	128	29	2.63	0.98	A	107	230	130	88	2.64		A
3.	Access information	65	95	105	29	2.63	0.98	A	107	230	130	88	2.64		NA
4.	Arrange data	20	15	135	145	1.71	0.98	NA	127	161	170	97	2.57		A
5.	Select websites for use	30	35	135	115	2.31	0.54	NA	99	110	160	186	2.05		NA
6.	Send information to the storage device	57	80	77	101	2.29	0.48	NA	120	168	177	90	2.57		A
7.	Highlight the information on the computer	45	88	79	103	2.23	0.49	NA	110	100	182	163	2.28		NA
8.	Copy information without assistance	75	60	119	61	2.47	0.41	NA	121	199	152	83	2.65		A
9.	Paste the information on the right place	10	30	31	244	2.15	0.38	NA	81	101	215	158	2.18		A
10.	Edit information using application packages	60	71	80	104	2.76	0.99	A	71	89	230	165	2.11		A
	Cluster mean					2.11		NA					2.40		NA

Table 1: Mean Ratings of staff on ability to access information using the computer

Table 1 indicates the staff ability to access information using computer. Result of the data collected shows that items number 4, 5, 6, 7, 8 and 9 revealed that academic staff find it difficult to arrange, select, send, highlight, copy and paste information. The cluster mean is 2.11 which is far below the cut off mean set for the study. This implies that academic staff members' ability to use computer to access information is still very low.

In the case of non-academic staff, items number 3, 5, 7 and 9 showed that non-academic staff cannot select, highlight and paste information. This was shown by their mean scores that were below the cut off mean of 2.50.The cluster mean for the non-academic is 2.40 which are a bit lower than the 2.50 set for the study, therefore is not accepted.

Research Question 2
What is the Staff members' ability to store information using the computer?
Staff members are able to:

S/N	ITEMS	ACADEMIC							NON - ACADEMIC						
		SA	A	D	SD	X	SD	INT	SA	A	D	SD	X	S D	INT
11.	Boot the computer	88	90	50	87	2.56	0.67	NA	191	201	101	62	2.93		A
12.	Enter data into the computer	25	39	105	146	1.81	0.54		162	193	102	96	2.76		A
13.	Store information using the primary storage device(hard disc)	69	89	103	54	2.54	0.71	A	121	204	129	101	2.62		A
14.	Create backup to their files using CD-ROM/ Flash drive	93	117	89	16	2.91	1.01	A	125	202	128	100	2.63		A
15.	Store information using pdf	55	60	122	78	2.29	0.72	NA	112	99	87	251	2.11		NA
16.	*Create data base to reflect different files*	*39*	*47*	*122*	*131*	*1.98*	*0.60*	*NA*	*132*	*109*	*217*	106	2.44		NA
17.	Use application packages easily	17	28	110	160	1.68	0.35	NA	92	73	108	282	1.95		NA
18.	Search for already stored information	90	64	111	50	2.62	0.76	A	123	201	97	134	2.54		A
19.	Operate the system that has internet network	31	43	88	153	1.84	0.11	A	87	125	107	236	2.11		NA
	Grand mean					2.24		NA					2.45		NA

Table 2: Mean Ratings of Staff on staff members' ability to store information using the computer.

In Table 2, items numbers 12, 15, 16, 17 and 19 for academic staff on entering data, using pdf to store information, creating data based on computer, being able to use application packages easily and operating internet network easily had mean scores below the criterion mean of 2.50 set for the study. With a cluster mean of 2.24

that is below the cut off mean, it is therefore not accepted. Non-academic staff items numbers 15, 16, 17 and 19 scored 2.45 which is below the cut of mean of 2.50 and is therefore not accepted.

Research Question 3
What staff member's ability to analyze information using the computer?
Staff members are able to:

S/N	ITEMS	ACADEMIC							NON - ACADEMIC						
		SA	A	D	SD	X	SD	INT	SA	A	D	SD	X	SD	INT
20.	Use spread sheet easily	75	70	110	60	2.50	0.66	A	137	155	183	80	2.62		A
21.	Key in data with no difficulty	72	15	118	110	2.79	1.05	A	182	90	127	156	2.54		A
22.	Arrange data with provided tools easily	56	71	66	122	2.19	0.18	NA	99	105	213	138	2.29		NA
23.	Use provided tools to edit data	61	47	39	168	2.00	0.50	NA	115	141	167	132	2.43		NA
24.	Sort data in the desired form	33	29	88	165	1.77	0.34	NA	108	127	89	234	2.17		NA
25.	Apply appropriate formula in analyzing data	81	94	120	20	2.74	0.97	A	121	167	181	116	2.63		A
26.	Arrange data based on relationship	14	21	87	193	1.54	0.31	NA	77	150	201	127	2.31		NA
27.	Arrange data in order of hierarchy	41	66	89	119	2.09	0.62	NA	97	179	114	165	2.37		NA
	Grand MEAN					2.19		NA					2.42		NA

Table 3: Mean Ratings of Staff on staff member's ability to analyze information using the computer.

Table 3 shows staff members' ability to analyze information using the computer. The items on numbers 21, 23, 24 and 26 for academic and non-academic scored below 2.50 criterion mean set for the study. Their mean of means are 2.19 and 2.42 respectively implying that ICT has not impacted positively on staff ability to analyze information using provided tools to edit information and arrange data in hierarchical order.

Hypothesis

HO₁: There is no significant difference in the mean responses of academic and non-academic staff on staff ability to store information using the computer,.

	N	X	SD	Df	t-cal	t-crit	Response
Academic	315	2.92	0.93				
Non-academic	555	3.01	0.94	868	0.64	1.96	Accepted

Not significant at P<0.05

Table 4: t-test analysis of the responses of academic and non-academic staff on staff members' ability to store information using the computer.

The result in table 4 showed that the calculated t-value of 0.64 is less than t-critical value of 1.96 at 0.05 level of significance with a degree of freedom of 868, (0.64<0.05). This null hypothesis HO₁ is not rejected implying that the null hypothesis is upheld. This means that there is no significant difference in the mean opinions of academic and non-academic staff on staff member's ability to store information using the computer.

Discussion

The finding of the study revealed generally poor utilization of computers in South Eastern Colleges of Education Nigeria. Results in table one showed that academic and non-academic staff lack the required skills for using computer to access information. This finding is in line with the report of Yusuf (2005) that most staff in educational institutions in Nigeria do not have the required experience and competence in the use of computer for educational purposes. Nwankwo et al (2011) warned that if ICT, which had brought about rapid transformation globally in teaching and administration in educational institutions, is not facilitated in Nigerian educational institutions, future generations will be operating with parochial knowledge which may affect every sector of the economy. Supportively, Hooker (2009) affirms that ICT is the engine that harnesses new growth that energizes societies to change into knowledge economy.

The results in table two which is addresses the staff members' ability to store information revealed that both academic and non-academic staff find it difficult to store information using computer. This result agrees with the report of Nwachukwu (2006) that staff in educational institutions in Nigeria is not effective in the use of computers in school operational activities. Lynch (2005) noted with dismay that irrespective of pressure mounted on staff to integrate ICT in their school service delivery, they are still reluctant and adamant. In line with the above, Awuja-Adamu and Kpangban (2011) report that the obstacle to the use of ICT is not lack of facilities per se but unwillingness to the use of the technology.

Result of data analysis in table three which addresses staff members' ability to analyze information using computer showed that staff competency to the above is low. This result is in line with the report of Ogba and Igu (2011) which revealed that a significant number of staff tend to avoid computers. This may be why Ololube (2005)

had earlier reported that the staff of educational institution generally lack interest in learning to use a computer due to lack of encouragement, training and information. A possible reason for the observed results might be caused by not diffusing and adopting innovation rapidly as reported by Rogers and Scot (1999), even when such innovations have obvious proven advantages. This is very interesting finding given that academics should be able to use a computer in order to do researches.However, it should be noted that non-academic staff use computer to prepare vouchers and sending these to different account numbers for the transfer of monetary funds. They also take note of facilities in the schools and do the recording as well. This may have helped to facilitate their performance when compared to those of the academic staff.

The implication of the above results is that students trained by these lectures are most likely not to be challenged in the use of computers and this could affect their chances of employment as no employer in this era of ICT would want to employ people who are not effective and efficient in the use of computers. Secondly it implies that these human resources may not be able to compete with their counterparts in the developed world.

Conclusion

Quality of human resources produced in a particular nation depend upon the quality, competency and quantity of staff in the educational institutions who are able to provide quality service delivery through knowledge and skills they have acquired during training. ICT has been accepted as the engine that harnesses new growth and which has energized societies to change into knowledge economy because of its revolutionary impact on organizations. The educational institutions in Nigeria, especially at the Colleges of Education, who train teachers should embrace this innovation to ensure the production of quality and competent graduates will stand up to societal challenges and compete with their peers nationally and internationally.

Recommendations
Based on the findings of the study, the following recommendations are made:
- The National Commission for Colleges of Education in Nigeria should make a policy that any staff member, who is not ICT compliant, will not be promoted.
- The College Management should send their staff to ICT training that upgrades their ICT knowledge.
- Staff should be encouraged through workshops to improve their use of ICT.
- College Management should regularly organize workshops and seminars on ICT for staff development.
- College Management should negotiation with dealers for better laptop prices for their staff.

References

Anowor, O.O. (2010). Imperatives of ICT for teachers. A paper presented at the 2010 Nigerian academy of education (NAE) at glory land cultural centre, Yenagoa-Bayelsa State: 8-12 November.

Awuja-Ademu, S. & Kpangban, E. (2011). Information and communication technology impact on teachers perceptions of Headmaster's administrative effectives. Approaches in International Journals of research development 5(1) 296 – 302.

Beebe, M.A. (2004). Impact of ICT revolution on the African academic landscape. COD ESRIA Conference of electronic publishing and dissemination: Dakar, Senegal 1 -1 -2 Sept 2004. http://www.codestra.org/links/conferences/elpubl/beebe.pdf.

Hooker, M. (2009). Concept Note: The state of ICT in teacher professional development. Ireland:DubinMary.hooker@gesci.org Retrieved 29th April, 2010.

Nwachukwu, P.O. (2006). Appraising the relationship between ICT usage and integration and the standard of teacher education programmes in developing economy. International Journal of Education. http://ijedict.dec.uwi.edu/viewarticle.php=194 reviewed

Nwankwo, I.N. Obunadike, J.C. & Ughamadu, U. (2011). The relevance of ICT in improving the quality of JSS teachers in Onueke Education zone of Ebonyi State. In G.C. Offorma (ed) International Journal of education research (INJER) 11(2) 124 – 133.

Ogba, F.N. & Igu, N.C.N. (2013). Imperative of information communication technology (ICT) in the enhancement of continuous assessment in secondary schools in Ebonyi State. A paper delivered at Ebonyi State college of education conferencing organized by school Arts and Social Science 19 – 20 Sept. 2013.

Olulube, N.P. (2006). Teachers instructional material utilization competencies in secondary schools in sub-sahara Africa: Professional and non professional teachers perspective. In conference proceedings on 6th international educational technique Emu, 19 – 21 April 2006 North Cyprus.

UNESCO (2002). Information and communication technologies in teacher education. A Planning guide. Paris UNESCO.

Yusuf, M.O. (2005). ICT and education: Analyzing the Nigerian National Policy for Information Technology. International Education Journal 6(3) 16 – 32.