International Journal of Information and Communication Technology Research

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Information and Communication Technology Usage in an Academic Environment: Challenges at Michael Okpara University of Agriculture, Umudike, Abia-State, Nigeria

[1]Leo, O.Obinna, [2]G.O Chukwu [3]Sunny, O. Eyeh
[1,3]Michael Okpara University of Agriculture, Umudike
[2]National Root Crops Research Institute, Umudike

ABSTRACT

The use of computers has reduced the world to a globalized village. Therefore, the challenges in the use of Information and Communication Technology (ICT) in Nigerian University system was assessed using Michael Okpara University of Agriculture, Umudike, (MOUA), Nigeria as a case study. A sample size of 400 respondents was used. The respondents were purposively and randomly selected through a multi-stage sampling technique. Primary data were generated through structured questionnaire and participant observation. Data generated were analyzed using descriptive statistics. Results showed that 75 % of the respondents were married, 62.5 and 37.5 % were males and females, respectively. About 87.5 % of the respondents were within the age range of 18-56 years. Majority (50 %) of the respondents were academic staff, while 25 % each represented non-academic staff and students, respectively, and 90 % of the respondents were computer literate. However, only 62.5 % owned personal computers. Mobile phones, computer services and over head projectors ranked 1st, 2nd and 3rd, respectively, among the 13 perceived ICT-based facilities available in the university. The knowledge level of the respondents was significant in the use of mobile phones, computer operation, internet browsing, social-network, interactive white board, e-learning and video-conferencing. Results showed that 75.0 % of the respondents identified lack of power, poor connectivity and low bandwidth as the most limiting factors towards access and use of ICT based facilities in MOUAU. Installation of solar inverters as a source of energy back up, up grading of bandwidth, encouragement of staff to own personal computers through staff cooperatives, and awareness campaign on the importance of computers in a university environment like MOUAU are recommended to enable the staff and students participate effectively in activities in the globalized village.

Keywords: *ICT Usage; Challenges, MOUAU, Nigeria*

I. INTRODUCTION

Information and Communication Technology (ICT) is the current and topical issue that has reduced the world into a global village. The world we live in today has been described as an Information Society (Sobeih, 2007) and the effective use of Information and Communication Technologies (ICTS) can be regarded as the defining element of the 21st century. Sobeih (2007) referred to ICT as a set of activities that are facilitated by electronic means in capturing, storage, processing, transformation and display of information. ICT components include computer hardware and software, digital broadcast and telecommunication technologies, the world-wide-web (www) or those found on CD-Roms, televisions, radios, mobile phones, satellites and policies and laws that govern their use (Sobaih, 2007). World Bank (2007) defined ICT as an instantaneous fact-finding engine and as a means of sharing information between a source and receiver, including link in the chain of development process. ICTs are also important part at home and social transformations, peoples' interactivity, service provision, information access, storage and retrieval in-order to achieve rapid agricultural transformation (Odame, 2005).

University is a universal institution and a place where one will receive excellent academic education, equip oneself with necessary social skills as well as technical and professional development (Thomas, 2002; Ekwueme, 2013). Hoben and Yeoman (2010) stated that the most important pedagogical functions of the University is to create a context in which original thinkers can develop and disseminate ideas. In 2020, Nigeria visions to be among the top 20 economies of the World. This vision could be possible if university education is revolutionized. It is acknowledged that ICT-based education systems and facilities have revolutionized education by narrowing "the digital divide" (narrowing the gap in ICT facilities between developed and developing countries) (Amalu, 2011) by increasing cooperation among learning institutions within and outside Nations. Presently, there are 123 universities in Nigeria comprising 37 Federal Universities, 37 State owned and 49 private universities (Fagge, 2013). The UNESCO standard requires every member country to allocate at least 26 % of her annual budget to education (Fagge, 2013). Funding of Universities is poor in many developing countries. For instance, in 2012, Nigeria allocated only 7 % of her annual budget to education (Fagge, 2013). However, Ghana and South Africa met the UNESCO standard by allocating 30 % of their annual budgets to education respectively (Fagge, 2013). The poor

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funding of universities in Nigeria, probably accounted for why the two best Nigerian Universities are ranked 6,340th and 6,645th, respectively (Aliyu, 2013), in the recent World ranking of universities. The low ranking suggests low availability of educational infrastructure especially ICT technologies, and hence low scope of research.

The objectives of the study were to:

i. examine the socio-economic characteristics of the ICT user members of the MOUAU community (the respondents);
ii. document available ICT components in the University;
iii. ascertain the extent of usage of these facilities by respondents;
iv. identify challenges to effective use of available ICT in the university, and
v. proffer solutions to the identified constraints in order to enhance ICT literacy in MOUAU.

II. METHODOLOGY

The study was conducted at the Michael Okpara University of Agriculture, Umudike (MOUAU), Abia State Nigeria. The University was established on the 13th November, 1992 as the Federal University of Agriculture, Umudike (FUAU) by decree No 48 of 1992 (Edeoga, 2012) but renamed MOUAU in 1999 by then President Olusegun Obasanjo. It is located about latitudes 40 – 70^0 N and longitudes 7 – 8^0 E in the South East agro-ecological zone of Nigeria (NRCRI, 2006). At inception in 1993, the University had only six colleges and one school of general and remedial studies. However, as at 2011/2012 academic sessions it had eleven colleges, and Post-graduate Studies (PG), Schools of General and Remedial Studies, among others. There are academic centres such as Centre for Continual Education (CCE), Directorate for ICT (DICT), Centre for Entrepreneurship (CE), Centre for Molecular Research, and Michael Okpara Extension Centre (MEC).

Respondents were purposively and randomly selected from the university community. Primary data were collected through the use of structured questionnaire and participant observation. Academic staff and non-academic staff who have worked for at least 5 years, as well as students were purposefully selected. Three stages of sampling were done. The academic staff (200) were randomly selected, followed by 100 randomly selected respondents each from the non-academic staff and student populations respectively. The samples aggregated to 400. They were administered questionnaire. Data generated were statistically analyzed using descriptive statistics, such as percentage, means, frequencies and ranks.

III. RESULTS AND DISCUSSION

Socio-Economic Characteristics of Respondents

Table 1 revealed that 75 % of the respondents were married, 25 % were single, 62.5 % were males and 37.5 % were females. Majority (87.5 %) of the respondents were within the age range of 18 – 56years. However, 50 % of them were academic staff, while 25 % of the respondents were non-academic and students respectively. Table 1, further revealed that 72.5% of respondents spent between 16 and 21years in school. Consequently, with 70 % of them had educational qualifications of HND/B.Sc, M.Sc. and Ph.D. Table 1 equally revealed that 70 % of the respondents had worked in MOUAU for at least six years, and 55% of them earned a monthly salary between ₦144,000.00 and ≥ ₦299,000.00. It is interesting to note that 90 % of the respondents were computer literate, although only 62.5 % owned personal computers (Table 1).

Perception of Respondents According to Availability of ICT Facilities.

The respondents perceived that the most frequent used ICT based facilities in MOUAU are mobile phones, computer services and over head projector, with scores of 3.99, 3.90 and 3.70 ranked 1st, 2nd and 3rd, respectively (Table 2). Electronic Journal Services ranked 4th with a score of 3.48. Internet services, E-mail, and Interactive whiteboard services which scored 3.20, 3.20, and 3.10 ranked 5th, 6th and 7th respectively (Table 2).

Table 2, further revealed that out of 13 ICT-base facilities that respondents perceived to be available in MOUAU, only 8 of them rendered significant services. This suggests that the services of other 5 ICT-based facilities were not significantly perceived by the respondents. The finding conforms with Odame (2005) who reported that the existence of ICTs in public spaces does not entail access and effective use by all.

Level of Knowledge in ICT by the Respondents

Table 3 revealed that the level of knowledge of the respondents in mobile phones operation, computer operation and e-mail facilities operation, internet browsing operation were significant and ranked 1st, 2nd and 3rd respectively. Social network ranked 4th while Interactive whiteboard ranked 5th. E-learning ranked 6th while video conferencing ranked 7th. Table 3 further revealed that out of 13-ICT-based facilities, the level of knowledge of the respondents was only significant on 8 of them. Consequently, mobile phones operation, computer operation and internet browsing maintained the lead among the ICT based facilities the respondents have appreciable knowledge. The results suggest that e-teaching was very low in the study area.

Access and Use of ICT-Based Facilities in MOUAU, Nigeria

Table 4 revealed that the respondents accessed and used significantly the following ICT-based facilities in MOUAU. GSM: Airtel network was ranked 1st with a score of 3.14 followed by Glo network with a score of 2.83. Etisalat network was ranked 3rd with a score of 2.60, while MTN network was ranked 4th with a score of 2.15 and finally internet services was ranked 5th and last with a score of 1.18. The implication of the ranking indicated that MTN net work and internet network were not significantly available to the respondents therefore access and use were negative.

Challenges to Access and use of ICT based Facilities in MOUAU were as shown in Table 5

Table 5 revealed that 87.5 % of the respondents identified lack of power (Energy/electricity) as a major challenge to access and use of ICT-based facilities in MOUAU. Furthermore, table 5 revealed that 75 % of the respondents identified lack of connectivity while 62.5 % of the respondents identified lack of low bandwidth (speed) as challenges to access and use of ICT-based facilities in MOUAU. The implication of the finding is that an average of 75 % of the respondents identified lack of power, lack of connectivity, low bandwidth as major challenges confronting access and use of ICT-based facilities in MOUAU.

IV. CONCLUSION AND RECOMMENDATION

The study revealed that a very high proportion (90 %) of the respondents were computer literate, and 62.5 % of them owned personal computers. The study revealed that 8 out of 13 ICT-based facilities were perceived by respondents to be significantly available in MOUAU. Also, the knowledge level of the respondents were very significant in 8 ICT-based facilities in MOUAU. The study also revealed that the services of GSM networks such as Airtel, Glo and Etisalat were significantly available while that of MTN and internet services were not significantly available. The study also revealed that lack of power (electricity), lack of connectivity, low bandwidth were the major challenges to access and use of ICT-based facilities in MOUAU. The study recommends that solar inverters be installed as a backup, since they are environmentally friendly and also cheaper. Furthermore, the study recommends up-grading of the existing bandwidth inorder to ensure improved connectivity and speed of internet services in MOUAU.

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Table 2. Perception of Respondents According to Availability and Use of ICT-Based Facilities in MOUAU

s/no	Facilities	Frequency				Total	Ranks
		4 H/A	3 A	2 N/A/A	1 N/A		
01	Multi-Media Resources	10	30	300	60	790(1.98)	9th
02	Electronic database	20	60	200	120	780 (1.95)	10th
03	Electronic Bulletin Board	10	30	100	240	570 (1.43)	11th
04	E-mail Services	200	100	80	20	1280 (3.2)	5th
05	Mobile Phone services	395	5	-	-	1595 (3.99)	1st
06	Computer services	360	40	-	-	1560 (3.60)	2nd
07	Overhead projector	300	80	20	-	1480 (3.70)	3rd
08	Internet services	200	100	80	20	1280 (3.20)	5th
09	Electronic Journal	250	100	40	10	1390 (3.48)	4th
10	Geographical Info. System	100	120	80	100	1020 (2.55)	7th
11	Video Conferencing	60	80	100	160	840 (2.10)	8th
12	Interactive W/Board	100	250	40	10	1240 (3.10)	6th
13	Social network	100	250	40	10	1240 (3.10)	6th

Source: Field Survey, 2013

* H/A = Highly Available Scored 4 pts.
* A = Available Scored 3 pts
* N/V/A = Less Available Scored 2 pts
* N/A = Not Available Scored 1 pt

Decision Rule: Any Score that is ≥ 2.5 is regarded as significant while any score that is ≤ is regarded not significant.

Table 3. Distribution of Respondents According to Their Level of Knowledge in ICT

s/no	Facilities	Frequency				Total	Ranks
		4 V/H	3 A	2 N/V/A	1 N/A		
01	Computer Operation	200	150	30	20	1330 (3.33)	2nd
02	Interactive W/board	100	150	70	70	1080(2.70)	5th
03	Mobile phone	380	20	-	-	1580 (3.95)	1st
04	E-mail facilities	200	100	80	20	1280 (3.20)	3rd
05	Internet Browsing	200	100	80	20	1280 (3.20)	3rd
06	Video Conferencing	60	80	160	100	900 (2.25)	7th
07	E-teaching	-	20	160	220	600 (1.50)	11th
08	E-library	30	60	110	200	720 (1.80)	9th
09	E-learning	10	40	100	250	970 (2.43)	6th
10	Electronic journal	50	80	70	200	780 (1.95)	8th
11	GIS	20	60	80	240	660 (1.65)	10th
13	Social network	100	160	80	60	1100 (2.75)	4th

Source: Field Survey, 2013

* H/A = Highly Available Scored 4 pts.
* A = Available Scored 3 pts
* N/V/A = Less Available Scored 2 pts
* N/A = Not Available Scored 1 pt

Decision Rule: Any Score that is ≥ 2.5 is regarded as significant while any score that is ≤ is regarded not significant.

TABLE 4. Distribution of Respondents According to Access and Use of ICT

Facilities	Frequency				Total	Ranks
	4 V/H	3 A	2 N/V/A	1 N/A		
MTN Network	30	60	250	60	860 (2.15)	4th
GLO Network	100	140	150	10	1130 (2.83)	2nd
Airtel Network	150	160	85	5	1255 (3.14)	1st
Etisalat	60	140	180	20	1040 (2.60)	3rd
Internet	10	20	100	170	470 (1.18)	5th

Source: Field Survey, 2013

* H/A = Highly Available Scored 4 pts.
* A = Available Scored 3 pts
* N/V/A = Not Very Available Scored 2 pts
* N/A = Not Available Scored 1 pt

Decision Rule: Any Score that is ≥ 2.5 is regarded as significant while any score that is ≤ is regarded not significant.

TABLE 5. Challenges Confronting Access and Use of ICT-Based Facilities in MOUAU, Nigeria

S/no	Factors	Frequency	Percentage
01	**Lack of power (electricity)**		
	Yes	350	87.5
	No	50	12.5
02	**Lack of Connectivity**		
	Yes	300	75.00
	No	100	25.00
03	**Lack of bandwidth**		
	Yes	250	62.5
	No	150	37.5

Source: Field Survey
* Multiple Response Recorded