

INTERNET USE AMONG FACULTY MEMBERS OF COLLEGES OF EDUCATION IN SOUTH- EASTERN NIGERIA

Bede Blaise Chukwunyere Onwuagboke, M.Ed.

Termit Kaur Ranjit Singh, EDD

Fong Soon Fook, PhD

Universiti Sains Malaysia

Joy Ngozika Onwuagboke, Bsc.Ed

Alvan Ikoku Federal College of Education Owerri, Nigeria

Abstract

This study is a descriptive survey which aims at finding out how faculty members in colleges of Education in south eastern Nigeria make use of the internet in their professional practices. A sample of 350 lecturers was proportionately randomly taken from faculty members in the colleges in the zone. A set of researcher made questionnaire tagged Internet Use Scale (IUS) was used to collect data from the respondents. Data collected was subjected to analysis using frequencies, percentages, t-tests and ANOVA. Findings revealed that Self-instruction, trial & error; organised training and workshops and Colleagues & friends assistance are the major source of internet training for faculty members. Similarly, Personal Laptop with modems; Personal mobile phones and Public cybercafé are the predominant mode of internet access available to faculty members. Significant differences exist between male and female faculty members with regards to internet use and frequency of use. There were also significant differences in internet uses and frequency of use between groups of faculty members according to teaching experience. The result has far reaching implication for provision of adequate training on Internet use in teaching and facilities to enhance effective teaching and learning in the colleges of education in the zone.

Keywords: Internet use, faculty members, colleges of education, south-eastern Nigeria

Introduction

Developments in information and communication technology have made tremendous impact in the world that we live in today. Information can now travel around the globe just in matter of seconds making communication easy and affordable. ICT has been found to have a significant impact in virtually every facet of human activity (Brakel & Chisenga, 2003) that it is almost impossible to contemplate a world without ICT. One area of human endeavour where the impact of ICT has greatly impacted on its activities is the field of education (Yusuf, 2005) with the effect that teaching and learning has received a boost as a result. Evidence from empirical studies point to the fact that ICT can positively affect students learning outcomes (Abass, 2011; Maleki, et al., 2012; Verbrianto & Osman, 2011) hence teachers at all levels of education can effectively use them in their instructional delivery.

Information and communications technology refers to a systematic process of gathering, processing, storing, sending and retrieving of information through the broadcast, computing and telecommunications media (Onwuagboke, 2009). It embraces hardware like computers, scanners and digital camera as well as software like standard office applications and specialist applications. The scope also covers the communication aspects such as digital TV, digital radio, e-mail, Internet, broadband, networks (wired and wireless), mobile phones, GPS (global positioning systems), videoconferencing, instant messaging and fax. There abound a wide range of application of these ICT resources in the teaching and learning environment. The Internet has been found to be very central to speedy access and dissemination of information on education and thus widely used by faculty and students of tertiary institutions all over the world.

The Internet comprises of millions upon millions of interconnected computer networks forming an extensive “Inter-Network” According Teach-ICT.com, (n.d.) the internet is made up of the “world wide web”(www) and other components such as e-mail, instant messaging, chat rooms, file transfers, news groups, peer to peer network and forums. According to (Singh, 2002) the Internet provides numerous opportunities for the academic world. It is an instrument for information distribution and a medium for cooperative interaction between individuals and their computers without regard for geographic limitation of space.

Similarly, the internet has been found to play a very vital role in the teaching and learning environment as it has been seen as an effective means used to widen educational opportunities as well as the single most powerful vehicle for providing access to unlimited information (Kaur, 2006). It is a tool for interactive learning between the teacher and the student (Kamba, 2007). Though the application of the internet in teaching and learning in

institutions of higher learning has been accepted and adopted all over the world, higher institution in Nigeria especially colleges of education seem to lag behind in this regard. Kamba, (2007) reports that 60% of the respondents used in his study do not use the internet.

Researchers have investigated the use of the internet by college of education lecturers other than those in the south eastern part of Nigeria (Adeshina, et al, 2013; Oghuvwu, 2010; Tella, 2011). Unofficial observation by the researcher on the instructional process in some colleges has shown little visible application of the internet in the instructional delivery process. Despite the fact that the Nigerian communication commission has distributed desktop and laptop computers to almost all the lecturers in these colleges, cases of faculty members who cannot access their e-mails abound in almost all the colleges in the zone. It is in the light of the above that this paper examines the use of the internet by faculty members in the colleges of education in the south eastern part of Nigeria.

The examination was done with the view of determining the major source of internet training for the faculty members of south-eastern Nigeria colleges of education and the prevailing and predominant modes of internet access available to the lecturers. The difference between male and female faculty members use the internet in the day to day execution of their teaching duty as well as the differences in frequency of internet use among the faculty members of colleges of education in south-eastern Nigeria. Accordingly, some pertinent questions to determine the major sources of internet training for faculty members; the predominant modes of internet access open to faculty members were raised among others.

The researchers postulated four hypotheses to direct the study. The hypotheses were stated in null form saying that there is no significant difference between male and female faculty members in their mean scores on internet uses and frequency of internet use. In the same vein, it was also stated that there is no significant difference in mean scores in internet uses and frequency of internet use of faculty members with regards to teaching experience.

Review of Related studies

The role of information and communication technology in teaching and learning in the 21st century has been variously stressed by scholars (Oliver, 2002; Sarker, 2012; Voogt, Dede & Estrad, 2011). Several researchers have investigated the use of internet by academic staff of tertiary, secondary as well as primary schools (Ani, Edem & Ottong, 2010). with the pervasiveness of ICT in our environment, Wabwoba et al. (2011) cited in Agbatogun, (2013) maintain that ICT usage in the learning environment provides unrestricted access to information for teachers and learners

irrespective of location and time (any place and any time) ensuring high quality of content delivery.

Interestingly, many researchers have studied the use of Internet by lecturers in tertiary institutions. Adeshina et al (2013) investigated the use of internet based information for teaching secretarial studies in colleges of education in Nigeria with the revelation that access to Internet by the lecturers was very poor. The study revealed lack of proper training on the use of the internet for instructional delivery as the major reason for this limited access and use of internet resources in teaching. In another study, Oghuvwu, (2010) states that lecturers in colleges of education in Delta state of Nigeria are proficient in internet usage as his findings show that they use databases, electronic mail, search engines and the world wide web to conduct research as well as teach their courses. In a similar study, Viatonu, Olagunju and Adeyemi, (2013) report that male academic staff members use the internet more than their female counterparts in private colleges of education in Lagos State of Nigeria.

Onasanya, Shehu, Oduwaye and Shehu, (2010) studied attitude of higher institution teachers towards the integration of ICT in teaching and research. The study revealed that University lecturers and Polytechnic lecturers are better trained in ICT integration in teaching than their college of education counterparts. In another study, carried out by Tella, (2011) it was reported that there is low availability and subsequent low utilization of ICT by lecturers in colleges of education in south-western Nigeria.

Ani, Edem and Ottong, (2010) discovered that lecturers in the University of Calabar have very low access to internet with most respondents gaining access to the internet though commercial cybercafés off campus. The study further revealed that the major reasons for internet access are communication, teaching and research related activities among others. Other researcher report that internet access in most institutions of higher learning is mostly gained through cybercafés (Mishra, 2009; Bankole & Babalola, 2012; Omotayo, 2006). Apart from using commercial cybercafés to gain internet access, Ogunrewo and Odusina (2010) state that academic staff of tertiary institutions were found to access the internet mostly via personal computers as they surf the net for information on research and academic materials.

Materials and Methods

The study is a descriptive survey which is aimed at finding out how lecturers in the colleges of education in this part of Nigeria use the Internet in their day to day performance of the teaching duty. The population for the study comprised of all the faculty members in the public colleges of education in south-eastern Nigeria. A sample of 350 respondents was proportionately randomly selected from the population using stratified

random sampling technique. A set of researcher constructed questionnaire tagged Internet Use Questionnaire (IUQ) was used to collect data for the study. To determine the reliability of the instrument, the Cronbach's alpha was used. The reliability coefficient of the (IUQ) instrument was 0.79.

The questionnaire was divided into two major sections. Section A seeks information on the demographics of the respondents while section B is made up of Likert type items which seek to ascertain the source of internet training for faculty members as well as their modes of gaining internet access in their work place. The instrument further seeks information on the uses of the Internet and the frequency of use for identified purposes. Data collected was analysed using frequency counts, simple percentages, t-test and one way analysis of variance (ANOVA).

Demographics of Respondents

The 262 respondents involved in the study were made up of 154 males (58.8%) and 108 females (41.2%). Data presented in table 1 show that 92 respondents (35.1%) have teaching experience of between 8-15 years followed by 78 respondents (29.8%) with teaching experiences of between 0-7 years.

			Years of Teaching Experience				Total
			0-7years	8-15years	16-24years	25years and above	
Gender	Male	Count	15	77	47	15	154
		% of Total	5.7%	29.4%	17.9%	5.7%	58.8%
	Female	Count	63	15	15	15	108
		% of Total	24.0%	5.7%	5.7%	5.7%	41.2%
Total		Count	78	92	62	30	262
		% of Total	29.8%	35.1%	23.7%	11.5%	100.0%

Results

The findings of this study are presented using tables for easier comprehension. To find out the sources of internet training for faculty members, the responses of the subjects were arranged in a frequency table as displayed in table 2 below.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Self-instruction, trial & error	93	35.5	35.5	35.5
	Organised training and workshops	75	28.6	28.6	64.1

	Colleagues & friends assistance	44	16.8	16.8	80.9
	Other (my children/spouse)	34	13.0	13.0	93.9
	Learned in school	16	6.1	6.1	100.0
	Total	262	100.0	100.0	

Findings displayed on the table indicate that the major source of internet training available to lecturers in the colleges of education in the south-eastern zone of Nigeria are self-instruction which embodies trial and error $n = 93$, (35.5%) followed by organised training and workshops $n = 75$, (28.6%) and Assistance from colleagues and friends $n = 44$, (16.8%).

In order to ascertain the predominant modes of internet access open to members of faculty, the responses received from the respondents are arranged in frequency table as shown in table 3 below. The findings indicate that the predominant modes of internet access open to the academic staff in the colleges are Personal Laptop with modems $n = 146$, (55.7 %), Personal mobile phones $n = 45$, (17.2%) and Public cybercafé $n = 36$, (13.7%).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Personal Laptop with modems	146	55.7	55.7	55.7
	Personal mobile phones	45	17.2	17.2	72.9
	Public cybercafé	36	13.7	13.7	86.6
	Personal Desktop with modem	18	6.9	6.9	93.5
	Personal iPad/ Android tablets	17	6.5	6.5	100.0
	Total	262	100.0	100.0	

On whether has any effect on the mean scores in internet use faculty members in colleges of education, the mean responses of male and female faculty members of the colleges were computed, arranged in a table and finally compared as shown in table 4 below. From the findings, there is a difference in mean scores between the two groups.

Gender	Mean	N	Std. Deviation
Male	70.5519	154	12.13435
Female	73.8333	108	15.13522
Total	71.9046	262	13.52203

The mean score on internet use of female faculty members is 73.8, SD = 15.1 is greater than that of the male faculty members which is 70.55, SD = 12.1.

Similarly, difference in mean scores of faculty members on frequency of internet use according to their gender was investigated. The mean responses of male and female faculty members of the colleges on their frequency of Internet use were computed and compared. Data presented in the table below indicate that there is a difference in the mean scores of the two groups.

Table 5: Frequency of Internet use mean scores according to gender

Gender	Mean	N	Std. Deviation
Male	52.3247	154	15.79024
Female	57.9630	108	13.54806
Total	54.6489	262	15.13739

The mean score on frequency of internet use of female faculty members is 58, SD = 13.6 is greater than that of the male faculty members which is 52.3, SD = 15.8.

To determine if the observed differences in the uses of the internet according to gender is statistically significant, an independent sample t-test was conducted. The result of the test is as displayed in the table 6 below.

Table 6: Independent Samples Test for equality of means on Internet uses by gender

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Diff.	
									Lower	Upper
Uses of Internet	Equal variances assumed	20.195	.000	1.944	260	.053	3.28139	1.68819	6.60565	.04288
	Equal variances not assumed			1.871	197.186	.063	-3.28139	1.75419	-6.74077	.17800

The table shows that there is no significant difference in the mean score of the male (M = 70.55, SD = 12.1) and female (M = 73.8, SD = 15.1, t (260) = -1.187, p = .06 two-tailed) faculty members on internet use. The magnitude of the difference in the means (mean difference = -3.28, 95% CI: -6.74077 to .17800) was rather small (eta squared = .013). Based on this

finding we therefore fail to reject the null hypothesis that states no significant difference in mean scores on internet uses according to gender.

In the same vein, to determine if the difference between the mean scores of male and female faculty members on the frequency of internet use is statistically significant, an independent sample t-test was carried out. Table 7 displays the result of the independent samples t-test for equality of means so conducted.

Table 7: Independent Samples Test for equality of means on frequency of Internet use by gender

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Diff.	
								Lower	Upper
Freq. of Internet Use	Equal variances assumed	3.497	.063	-3.013	.003	-5.63829	1.87115	-9.32283	-1.95375
	Equal variances not assumed			-3.095	.002	-5.63829	1.82170	-9.22614	-2.05043

The result of the test show that there is a significant difference in the mean scores of the respondents according to gender, male (M = 52.3, SD = 15.8) female (M= 58, SD = 13.6, t (260) = -3.01, p=.003 two-tailed) on the frequency of use of internet. The females significantly scored a higher mean than their male counterparts. The magnitude of the difference in the means (mean difference = -5.638, 95% CI: -9.32283 to -1.95375) was rather small (eta squared = .034). Based on this finding we therefore reject the null hypothesis that states no significant difference in mean scores on frequency of internet use according to gender.

To test if teaching experience of faculty members affects their internet uses, a one-way between groups analysis of variance was conducted to determine the impact of teaching experience on the mean scores on internet uses of faculty members. The participants in the study were divided into four groups according to their teaching experience (Group 1: 0-7years; Group 2: 8-15years; Group 3: 16-24years; Group 4: 25years and above). The result of the test is as displayed in the ANOVA table 6. We therefore report that there was significant difference at the $p < .05$ level in internet uses for

the four groups as a result of their years of teaching experiences: $F(3, 258) = 29.775$, $p = .0005$.

Table 6: ANOVA table on Internet uses according to teaching experience

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	12273.179	3	4091.060	29.775	.000
Within Groups	35449.436	258	137.401		
Total	47722.615	261			

Based on this finding we therefore reject the null hypothesis that states no significant difference in mean scores on internet uses according to teaching experience. The actual difference in mean scores between the groups is quite very large. The effect size calculated using eta squared, was .26.

Table 7: Multiple Comparisons of Uses of Internet according to teaching experience

(I) Years of Teaching Experience	(J) Years of Teaching Experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
0-7years	8-15years	5.40747*	1.80417	.016	.7421	10.0728
	16-24years	3.51406	1.99442	.294	-1.6432	8.6713
	25years and above	23.45385*	2.51825	.000	16.9420	29.9657
8-15years	0-7years	-5.40747*	1.80417	.016	-10.0728	-.7421
	16-24years	-1.89341	1.92604	.759	-6.8739	3.0870
	25years and above	18.04638*	2.46445	.000	11.6737	24.4191
16-24years	0-7years	-3.51406	1.99442	.294	-8.6713	1.6432
	8-15years	1.89341	1.92604	.759	-3.0870	6.8739
	25years and above	19.93978*	2.60695	.000	13.1986	26.6810
25years and above	0-7years	-23.45385*	2.51825	.000	-29.9657	16.9420
	8-15years	-18.04638*	2.46445	.000	-24.4191	11.6737
	16-24years	-19.93978*	2.60695	.000	-26.6810	13.1986

Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 4 ($M = 53.7$, $SD = 2.7$) was significantly different from Group 1 ($M = 77.3$, $SD = 14.2$), Group 2 ($M = 71.9$, $SD = 14.4$) and Group 3 ($M = 73.8$, $SD = 3.6$). The mean score of group 1 was also statistically different from that of group 2. There was however no statistical difference in the mean scores of group 1 and group 3 and that of group 2 and group 3 as displayed in table 7.

To determine the impact of teaching experience on the mean scores on frequency of internet use of faculty members, a one-way between groups analysis of variance was conducted. The participants in the study were

divided into four groups according to their teaching experience (Group 1: 0-7years; Group 2: 8-15years; Group 3: 16-24years; Group 4: 25years and above). We therefore report that there was significant difference at the $p < .05$ level in frequency of internet use for the four groups as a result of their years of teaching experiences: $F(3, 258) = 23.83, p = .0005$. Based on this finding we therefore reject the null hypothesis that states no significant difference in mean scores on frequency of internet use according to teaching experience.

Table 8: ANOVA table on frequency of Internet use according to teaching experience

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5403.438	3	1801.146	23.833	.000
Within Groups	19498.337	258	75.575		
Total	24901.775	261			

The actual difference in mean scores between the groups is very large. The effect size calculated using eta squared, was .22. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 ($M = 57.64, SD = 4.8$) was significantly different from that Group 2 ($M = 50.33, SD = 11.8$), Group 3 ($M = 46.8, SD = 6.97$) and Group 4 ($M = 45.8, SD = 8.49$).

Table 11: Multiple Comparisons of Frequency of Internet Use according to teaching experience

(I) Years of Teaching Experience	(J) Years of Teaching Experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
0-7years	8-15years	7.31494*	1.33805	.000	3.8549	10.7749
	16-24years	10.88296*	1.47914	.000	7.0581	14.7078
	25years and above	11.84103*	1.86764	.000	7.0116	16.6705
8-15years	0-7years	-7.31494*	1.33805	.000	-10.7749	-3.8549
	16-24years	3.56802	1.42843	.063	-.1257	7.2617
	25years and above	4.52609	1.82774	.066	-.2002	9.2524
16-24years	0-7years	-10.88296*	1.47914	.000	-14.7078	-7.0581
	8-15years	-3.56802	1.42843	.063	-7.2617	.1257
	25years and above	.95806	1.93342	.960	-4.0415	5.9576
25years and above	0-7years	-11.84103*	1.86764	.000	-16.6705	-7.0116
	8-15years	-4.52609	1.82774	.066	-9.2524	.2002
	16-24years	-.95806	1.93342	.960	-5.9576	4.0415

*. The mean difference is significant at the 0.05 level.

There was however no significant difference between mean scores of Group 2 ($M = 50.33, SD = 11.8$) and Group 3 ($M = 46.8, SD = 6.97$) as well as group 4 ($M = 45.8, SD = 8.49$). Similarly no significant difference was found to exist between Group 3 ($M = 46.8, SD = 6.97$) and Group 4 ($M = 45.8, SD = 8.49$).

The finding reveals that less experienced lecturers frequently use the internet more than their more experienced colleagues. From the findings, it is deducible that the faculty members frequently use the internet in their daily duties as teachers.

Discussion

This finding that the major source of internet trainings for faculty members is self-instruction is at variance with that of Bhukuvhani, Chiparausha and Zuvalinyenga (2012) that have it that the major source of internet training for lecturers in a university in Zimbabwe is through training workshops. The result is however similar to the findings of De Morentin, Amenabar, & Lareki, (2011) that state majority of the faculty members involved in their study were self-taught and Archibong, Ogbuiji and Anijaobi Idem (2010) who report that majority of the faculty members in university of Calabar Nigeria financed their ICT trainings. The fact that majority of the lecturers that participated in this study learnt to use the Internet through self-instruction may be an indication of their zeal to be relevant in the 21st century classroom that is ICT driven. This underscores the fact that they have a favourable attitude towards the integration of internet in their jobs. Encouragement should be giving to them by organising training workshops for them to learn how to effectively integrate same into their instructional delivery.

The result also shows that internet access is mostly gained through personal laptops and modems. This result is agreement with the findings of Ogunrewo and Odusina (2010) that report academic staff of tertiary institutions was found to access the internet mostly via personal computers. It is however at variance with the reports of (Ani, Edem & Ottong, 2010; Bankole & Babalola, 2012; Mishra, 2009; Omotayo, 2006) that state that Internet access in most institutions of higher learning is mostly gained through cybercafés. This may be an indication of the growth of ICT skills and utilization occasioned by the supply laptops to the faculty members by NCC and their acceptance of Internet as an integral part of today's instructional preparation and delivery process. It is also a pointer to the fact that institutions of higher learning are yet to be fully connected to the net. The state of affairs where internet access is gained through personal efforts and public cybercafés does not guarantee effective integration of same in actual instruction process.

Differences were found to exist in internet uses as a result of gender, however, the observed differences were not found statistically significant. This is similar to findings by Alshankity and Alshawi (2008), Aduwa-Ogiegbaen and Isah (2005). The earlier studies on internet use have found gender gap in internet use. This result may be an indication that the gap no

longer exist between male and female faculty members. On frequency of internet use, statistically significant difference was found to exist as a result of gender of faculty members. The female faculty members were found to be more frequently on the internet than their male colleagues. This may be a pointer to a new gap in favour of females.

The result of the study also shows that differences exist in mean scores on internet use as a result of teaching experiences of faculty members. This result is similar to findings of Aduwa- Ogiegbaen and Uwameiye (2006) which report that less experienced faculty members use the internet more than their more experienced colleagues. Some of them can be said to belong to the group classified as “digital natives” who are technology savvy. Their more experienced colleagues can be said to belong to the other side of the divide, the “digital migrants” who grew up without technology and as such occasionally use technology.

In the same vein, statistically significant differences were found to exist in frequency of internet use as a result of teaching experience. The less experienced faculty members are more frequent on the internet than their more experienced colleagues. This is similar to the findings of Satpathy and Rout (2010) who report 75% of lecturers using the internet on a daily basis. However the lack of adequate and organised training on internet utilization for academic purposes by the academic staff may reduce the benefits of its use in actual instructional delivery. The said use of the internet by faculty members may as well be more for personal professional development rather than for actual instruction.

Conclusion

In conclusion, faculty members in the colleges of education in the south-eastern Nigeria use mostly their personal laptops and modem to gain internet access at home and their work places. Majority of them got trained on internet usage through self-instruction and organised training workshops. Gender has no significant effect on faculty members’ uses of the internet for their teaching duty. There is however a significant difference between male and female faculty members on their frequency of internet use with females reporting being more frequent on the internet than their male counterparts. Similarly, significant differences were found to exist between faculty members in uses of internet and frequency of use with less experienced lecturers using the internet more than their more experienced colleagues. They were also using the internet more frequently than their more experienced colleagues.

The findings of this study underscores the need for functional internet facilities to be put in place for the use of both faculty and students of the colleges of education in the south-eastern part of Nigeria in this age of

internet revolution in education. With many colleges of education and universities having their own internet facilities, colleges in the south-eastern Nigeria cannot afford to lag behind. Capacity building workshops to enhance the internet skills of faculty members should be intensified to enable the effective integration of internet technology in teaching and learning. Encouragement should be given to more experienced faculty members who may have been trained during the analog era to embrace and make good and frequent use of the internet in their daily duties.

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