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Pattern of Computer and Internet Use among Teachers in Higher Institutions in Nigeria

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Abstract: This research borders on assessing teachers' competences in the use of ICT tools in teaching and research in Nigeria. Two common ICTs: the computer and the internet were selected, and the skills and attitudes of teachers in 7 Nigerian higher Institutions were assessed. About 760 questionnaires were distributed to 7 higher institutions comprising 4 Universities, 2 Polytechnics & one College of Education; a response rate of 67% was achieved. Our result showed that about 96.7% of the teachers have access to a PC and 84.9% have self-owned PCs. Access to Internet stood at 88.6% and the point of access was traced mostly to cyber cafés (49.8%), although slightly over half of all respondents (54.4%) claimed to have access point in their offices, and one out of every 5 have Internet connections at home. Encouragingly, 40.8% and 37.5% have more than 5yrs experience using both computer and the internet respectively and a paltry 8.5% have used both the computer and the internet for less than one year across the institutions. About 53% of these teachers were found to be frequent with the use of the computer out of which 45% spend up to 5hrs on a weekly basis. On the overall, time spent online per teacher is calculated at about 5hrs per week. A good number of the teachers were found to be proficient with varied computer applications and several Internet services (mean=3.51, S.D 1.08). To foster improved access and use of both Computer and the Internet, a number of useful policy directions are advanced. This tends to increase Teacher's productivity in all higher school of Learning.

Keywords: e-Learning, Pedagogy, Proficiency, Policy, Tertiary Institutions

Introduction

IN TODAY'S GLOBALIZED and rapidly evolving world, teachers' responsibilities have become more complicated as they are expected to be content experts, technology specialists, motivators, cooperative and collaborative learning advocates as well as monitors of student progress (Abtar and Kuldip, 2001 cited in Luan et al, 2005). Information and Communication Technologies (ICTs) have contributed in no small way to the performance of these roles by the teachers, especially at the tertiary level. ICTs have expanded the breadth and depth of opportunities within institutions of higher learning everywhere in the world. For instance, the Internet revolution has brought drastic changes to the area of education (Papert, 1997; Cubn, 2001; Fuchs and Woessmann, 2004 cited in Peciuliaskiene & Barkauskaite, 2007). The Internet has

revolutionized the way students learn and how teachers teach in the classrooms. Members of academic communities can now cooperate with their counterparts all over the world without having to contend with the traditional challenges of time and distance (Collis and Wende, 2002). The permeation of the Internet technology and computers into classrooms has also created the opportunities for students to be active learners and allowed instructors to be facilitators (Anderson and Reed, 1998; CHEPS, 2000).

Internet and computer use has been found to positively impact critical thinking, problem solving, prompt feedback and networking (Chavez, 1997). Along with word processing, the Internet may be the most valuable of the many computer technologies available to teachers and students. Indeed, hundreds of thousands of teachers have become regular electronic mail users. Evidences from a survey of over



2200 teachers in the United States showed that most teachers use the internet for educational purposes rather than for entertainment (Becker, 1999). With particular reference to the internet, a wide range of studies exist which show its importance and impact on higher education and research (Wilkinson, *et al.*, 2003; Adogbeji and Toyo, 2006; Rajeev and Amritpal, 2006; Adeya and Oyelaran-Oyeyinka, 2002; Ramayah *et al.*, 2003; Awoloye and Siyanbola, 2006; Glenda *et al.*, 2006; Jagboro, 2003; Ramayah and Jantan, 2003; Ibegwam, 2004 and Chinwe, 2006). Altogether, this body of literature points to the fact that ICTs do increase students' access to education; improve curriculum contents and quality of instruction; and increase teachers' productivity in terms of academic publications. From the foregoing, it comes out clearly that the impact of new education technology on teachers cannot be over-emphasized.

However, the majority of these studies are confined to the developed world and little attention has been paid to competence in computer use among teachers at the tertiary level of education. Additionally, issues relating to the attitude and experience of tertiary institution teachers in the use of computers and the internet have been largely unexplored. More specifically, studies comparing different institution types with respect to the teachers' use of computers and the internet are virtually non-existent. It is within this context that an evaluation research like this is imperative. The objectives of this study were to:

- examine the attitude of tertiary institution teachers in the use of computers and the internet.
- evaluate teachers' competence in the use of computer
- draw out appropriate policies which will facilitate the use of computer and the internet for teaching and research in tertiary institutions

Research Methods

A total of 7 tertiary institutions were purposively selected for this study, comprising 4 Universities, 2 Polytechnics & one College of Education. Three of the Universities are federal and only one state University is represented. The institutions namely are: Obafemi Awolowo University (OAU), University of Lagos (UNILAG), University of Ibadan (UI), all these 3 are federal Universities and Olabisi Onabanjo University (OOU) represents the state Universities. The Polytechnic, Offa (OFFA) and Osun State Polytechnic, Iree (IREE) represents the federal and state polytechnics respectively. The only college of education sampled is 'the College of Education', IKERE (CoE). The project's coverage was limited to South-western Nigeria alone; because the zone has the highest number of higher institutions among

the six geo-political zones of Nigeria. Each state within the South-Western zone is represented in the sampling except for Ondo state. The school chosen in this state was on vacation at the time of data collection. The respondents were randomly selected from these institutions. About 760 questionnaires were distributed among the lecturers and this spread across 24 faculties, 511 of which were returned and found useful (i.e. response rate of 67%). The sample was skewed in favor of male teachers with a ratio of 1:3. Inferential and descriptive statistical procedures were employed in treating the data and the results so obtained formed the basis for the conclusions reached in this paper.

Access to Computer and the Internet

Teachers' access to computer and the Internet were found to be impressive, as shown in Table 1. Nearly all (96.7%) of the respondents claimed to have access to computer and have used it. This shows an improvement of exactly 9% over a previous finding of Adeya and Oyelaran-Oyeyinka within 6 years (Adeya and Oyelaran-Oyeyinka, 2002). We also found that 84.9% of these users have their own Personal Computers (PCs), this seems to facilitate their proficiency level as discussed later in this work. Institutional assessment shows that virtually all the teachers in all the institutions have computer access. For example in UNILAG and OOU computer access is 100%, this is closely followed by OFFA, UI and OAU with 98.6%, 97.7% and 96.8% access respectively. We also recorded about 94% computer access for the respondents in IREE and 87.7% in CoE, Ikere. As in the overall figures reported earlier, not all the teachers who claimed to have access to computers have their own personal computers. Nonetheless, a very high proportion of respondents from 5 Institutions reported owning personal computers: OAU (95.7%), followed by UI (93%), OOU (90.7%), OFFA (89.7%) and UNILAG (87.7%). Incidence of PC ownership was least in IKERE where 59.3% of the teachers indicated having self-owned computers. It is worth noting that the comparisons made here have not taken into consideration the manner in which the teachers have acquired their PCs. This is one area in which the institutions differ greatly. For instance, unlike most other institutions, teachers in OAU have, in the last 5 years, had the opportunity of securing laptops on loan through co-operative societies. Also, the presence of the Cooperative Information Network (COPINE) has contributed to the prevalence of PC ownership in the OAU community. COPINE facilitated the donation of desktop computers by Computer Aid International (<http://www.computeraid.org>) to research laboratories in the university on a non-for-profit basis to

teachers and students alike. In the last 2 years, the organisation has donated over 200 desktop computers

within the OAU community alone.

Table 1: Access to Computer and the Internet*

	Universities			Polytechnics			Coll. of Edu.
	OAU	UI	UNILAG	OOU	OFFA	IREE	IKERE
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Access to PC	91 (96.8)	85 (97.7)	59 (100)	74 (100)	69 (98.6)	63 (94)	50 (87.7)
PC Ownership	90 (95.7)	80 (93)	51 (87.7)	68 (90.7)	61 (89.7)	43 (67.2)	35 (59.3)
Access to Internet	91 (97.8)	81 (96.4)	53 (96.4)	65 (87.8)	40 (63.5)	53 (84.1)	51 (87.9)
Point of Internet access							
Computer Room	29 (48.3)	33 (47.1)	30 (53.6)	6 (8.5)	5 (10)	3 (4.8)	1 (1.8)
Home	7 (11.7)	19 (27.1)	14 (25)	23 (32.4)	4 (8)	7 (11.3)	9 (16.4)
Library	-	2 (2.9)	3 (5.4)	14 (19.7)	3 (6)	-	1 (1.8)
Cybercafe	24 (40)	16 (22.9)	9 (16.1)	28 (39.4)	38 (76)	52 (83.9)	44 (80)
Personal Office Connectivity	83 (90.2)	80 (95.2)	51 (94.4)	35 (48.6)	7 (12.5)	2 (3.1)	3 (5.2)

*Figures in parentheses represent proportion of respondents in each institution

Source: Authors' Survey, 2008

A considerable proportion (88.6%) of respondents (in the overall) have access to Internet and at institutional level, the three federal universities are ahead of other Institutions (Table 1). Among the 3 federal universities, OAU is ahead amidst counterparts, with 97.8% Internet Access, followed by a tie between UI and UNILAG (96.4%). This result is not surprising because the federal universities are relatively better funded especially in the area of ICT infrastructure; OAU, for example receives assistance from the World Bank and Carnegie Corporation of New York (Awolaye, 2008). The point of Internet access is veritably a matter for concern especially in the educational sector. For instance, it is relatively easier to deploy the internet for teaching and research when teachers have access to it in their offices or an institutional library. Besides reducing the distraction that

might characterize public cyber cafes and computer rooms, personal office connectivity is more readily accessible. Among the institutions covered in this study, overall personal office connectivity stood at 54.4%, this being more prevalent in the three federal universities. UI is ahead of others with 95.2% of the teachers having office connectivity, followed by UNILAG (94.4%) and then OAU, where about 9 out of every 10 teachers have personal office connectivity. One out of every 2 teachers in OOU (the only state university in the sample) have access to internet in their offices.

Other internet access points were identified: computer room, home, library and cybercafés. Teachers in most of the Institutions that are relatively poorly funded in the area of ICT infrastructure mostly have access to Internet in Cybercafés. For

instance, while the use of cybercafé as internet access point is well below the overall proportion in all the universities, cybercafé usage is exceptionally high in the polytechnics (83.9% for IREE; 76% for OFFA) and the CoE (80% for IKERE). It is interesting to note that in spite of the excellent ICT infrastructure, 2 out of every 5 OAU teachers do visit cyber cafés mainly because incessant power failure is a major challenge. Lack of constant electricity forces them to look for alternatives; some of the lecturers do seek access among the research institutions – like the National Centre for Technology Management (NACETEM) and Regional Centre for Training in Aerospace Survey (RECTAS) - located within the campus where electricity supply is more reliable. In OOU, more lecturers than in the other institutions (32.4%) reported having internet connection at home. This is apparently as a result of the proliferation of service providers within the states who are providing access through dial-up and wireless access. In OAU, the relatively low intensity of home access to the internet (11.7%) is probably as a result of non-availability of dial-up and wireless internet service providers. The advent of Internet Service provisions by dial-up and wireless access is about a year when OduaTel (O'Net) and Multilinks fully launched the

service in the Ile-Ife environment, where O.A.U. is located. It is interesting to note that, globacom (one of the telecommunication operators in Nigeria) have started laying fiber-optic cable on the streets of Ile-Ife, this will apparently improve and expand Internet service provision to more users at home. This attempt is consistent with the view of Calestous Juma in bridging existing digital gap between 'the haves and the have nots', especially between the developed countries (e.g United States of America) and the Sub-Saharan region of Africa. (Juma, 2008).

Evaluation of Computer & Internet Use

Table 2 shows that most (40.8%) of the respondents have been using the computer for more than 5yrs; and about a quarter have been using it for the past 3 to 4yrs. This is closely followed by those with up to 2yrs experience (24.3%). In the overall, a paltry of 8.5% are found to have been using it for less than one year. This shows that about 67% of the teachers have over 3yrs experience using the computer. There is a close relationship between computer use and the Internet use; although computer use experience is about 4% better than internet use experience among the teachers examined.

Table 2: Overall Evaluation of Computer and Internet Use

Years of experience	Computer use (% n=424)	Internet use (% n=467)
<i>Less than 1yr</i>	8.5	8.4
<i>1-2yrs</i>	24.3	20.6
<i>3-4yrs</i>	26.4	33.6
<i>5 yrs and above</i>	40.8	37.5
Frequency of Use	Computer (% n=493)	Internet (% n=463)
<i>Daily</i>	52.7	43.0
<i>2-3 times a week</i>	33.3	33.0
<i>Month 2-3 times</i>	8.7	13.8
<i>Once in a month</i>	5.3	10.2

Source: Authors' Survey, 2008

Concerning Internet use experience we found that respondents with over 5yrs experience are 37.5%, followed by those with 3-4yrs which stood at 33.6%, and those with up to two years experience, 20.6%. The least that have Internet use experience up to one year are just 8.4%. On the average, about 71% have above 3yrs experience. One factor that could be considered as element of proficiency as used in this research work is the frequency of use. More than half of the teachers use the computer daily (52.7%), followed by about one-third who use the computer 2-3times a week (33.3%). Likewise, we found about 43.0% of the teachers use the Internet daily, 33.0% use it 2-3 times a week, 13.8% use it 2-3 times a month while 10.2% use it only once in a month. These figures show that Nigerian tertiary institutions teachers are generally frequent and experienced users of both computers and the Internet. But these figures are aggregates; the institutional assessment (Table 3) shows mixed trends. Compared to other institution types, university teachers appear to have been exposed to computer use much earlier (Table 3). This is evidenced by the fact that more of these teachers have had personal computer for over 5 years. In OAU for instance, 60% of the teachers that have PCs have

had it for more than 5 years and only one out of 20 have had it for less than one year.

For other types of institutions, it is not particularly likely that their PC ownership prevalence will catch up with the universities as it will take about 3-4 years for this to happen, considering the fact that the majority of their teachers that own PCs presently have had it for just between 1 and 2 years. It is then critical that PC acquisition schemes be directed at these institutions to enhance access to computing facilities among them. While a large proportion of the respondents in the universities except those from OOU agreed that they use the computer daily, this is consistent with the report of Adeya and Oyelaran-Oyeyinka that the federal universities use the computer more frequently than their counterparts in the state universities (Adeya and Oyelaran-Oyeyinka, 2002). Very few of the respondents from the sampled polytechnics and college of education use the computer that often (Table 3). For instance, 82.1% of the respondents from UI, 78.7% from OAU and 72.4% from UNILAG use the computer on a daily basis. In the two polytechnics sampled, we had 20% of the respondents from OFFA and about one out of every 3 from IREE are calculated to use the computer daily.

We had just 22.2% of the respondents from the only college of education (IKERE) in sample who indicated daily use of the computer. In fact, of those respondents who use the computer as infrequently as once a month, 16.7% are from IKERE. The highest

frequency of use among the polytechnics and college of education in the sampled is 2-3 times a week, which has an intensity of 54.3% in OFFA, 48.3% in IREE and 48.1 in IKERE.

Table 3: Acquisition and Use of Computer and the Internet

Length of time of PC acquisition	UI (n=80)	OAU (n=90)	UNILAG (n=55)	OOU (n=73)	OFFA (n=68)	IREE (n=51)	IKERE (n=40)
<i>Less than 1yr</i>	5.0	12.2	9.1	8.2	13.2	13.7	5.0
<i>1-2yrs</i>	13.8	11.1	23.6	24.7	27.9	39.2	60.0
<i>3-4yrs</i>	21.3	23.3	29.1	34.2	30.9	25.5	17.5
<i>5 yrs and above</i>	60.0	53.3	38.2	32.9	27.9	21.6	17.5
Frequency of Computer Use	UI (n=84)	OAU (n=94)	UNILAG (n=58)	OOU (n=73)	OFFA (n=70)	IREE (n=60)	IKERE (n=54)
<i>Daily</i>	82.1	78.7	72.4	39.7	20.0	33.3	22.2
<i>2-3 times a week</i>	11.9	17.0	24.1	42.5	54.3	48.3	48.1
<i>Month 2-3 times</i>	3.6	-	3.4	9.6	22.9	13.3	13.0
<i>Once in a month</i>	2.4	4.3	-	8.2	2.9	5.0	16.7
Length of time of internet use	UI (n=86)	OAU (n=94)	UNILAG (n=52)	OOU (n=72)	OFFA (n=51)	IREE (n=58)	IKERE (n=54)
<i>Less than 1yr</i>	3.5	-	9.6	4.2	27.5	6.9	18.5
<i>1-2yrs</i>	14.0	4.3	15.4	29.2	23.5	24.1	46.3
<i>3-4yrs</i>	25.6	37.2	42.3	33.3	45.1	32.8	22.2
<i>5 yrs and above</i>	57.0	58.5	32.7	33.3	3.9	36.2	13.0
Frequency of internet Use	UI (n=86)	OAU (n=92)	UNILAG (n=55)	OOU (n=69)	OFFA (n=52)	IREE (n=59)	IKERE (n=50)
<i>Daily</i>	77.9	70.7	69.1	27.5	1.9	8.5	8.0
<i>2-3 times a week</i>	17.4	26.1	25.5	46.4	32.7	44.1	50.0
<i>Month 2-3 times</i>	1.2	-	3.6	15.9	42.3	30.5	20.0
<i>Once in a month</i>	3.5	3.3	1.8	10.1	23.1	16.9	22.0

Source: Authors' Survey, 2008

Again in the universities, extensive use of the internet is much earlier than in the other institution types (Table 3). Respondents from OAU and UI seem to have been using the internet for a longer period than the other institutions. As indicated by the relatively high proportion of respondents from those institutions (58.5% from OAU and 57.0% from UI), use of the internet had been popular in those institutions for over 5 years now. On the other hand, intensity of internet use became pronounced only in the last 3-4 years in OFFA and in the last 1-2 years in IKERE. It is somewhat surprising that a considerable

percentage (36.2%) of teachers from IREE claimed to have been using the internet for over 5 years. This is partly due to the fact that a lot of these teachers could have accumulated internet use experience before joining the services of that institution.

As contained in Table 3, the bulk of respondents in UI, OAU and UNILAG use the internet daily with UI taking the lead with a percentage of about 78, the least usage was traced to the polytechnic OFFA which stood at just 2%. We therefore conclude that Internet use among universities is more intense than

in other institution types (the polytechnics and colleges of education).

Institutional Assessment of Computer and Internet Proficiency

The teachers were asked to rate their level of proficiency in computer use using a 5-point Likert scale with 5 as highest and 1 lowest. Table 4 shows the results from the respondents for the institutions. For all the institutions, a mean of 3.42 was calculated for level of proficiency in computer use, with a standard deviation (S.D.) of 1.02. Mean internet proficiency was calculated as 3.51 with a S.D. of 1.08. Respondents from UNILAG teachers are better than their

colleagues in other Institutions in the use of Computer with a mean of 4.07. The least calculated mean with respect to the use of Computer as derived for IKERE is put at 2.62. On the overall we found that computer proficiency is quite encouraging among tertiary-level teachers. Likewise, in the rating of Internet proficiency as shown in Table 4, we found three levels of Internet proficiency: first level: most proficient, second level: fairly proficient and third level: just proficient. UI had a mean of 4.19, followed by UNILAG; 4.07. These were categorized to the first level, while OAU (3.68), IREE (3.41) and OOU (3.40) belong to the second level and the third level consist of OFFA with a mean of 2.72 and IKERE with a mean of 2.65.

Table 4: Institutional Rating of Computer and Internet Proficiency

	Rating of Proficiency in Computer use [*]		Rating of Proficiency in Internet use ^{**}	
	Mean	SD	Mean	SD
OVERAL	3.42	1.02	3.51	1.08
L				
UNILAG	4.07	0.76	4.07	0.71
UI	3.98	0.9	4.19	0.89
OAU	3.38	1.00	3.68	0.95
OOU	3.3	0.92	3.4	1.03
IRE	3.3	1.03	3.41	1.07
OFFA	3.16	0.87	2.72	0.94
IKERE	2.62	0.93	2.65	0.95

N^{*}=501, N^{**}=483

Source: Authors' Survey, 2008

Institutional Rating of Proficiency in Selected Computer Applications and Internet Services

The proficiency level in word processing is observed to be above average across the Institutions. For example, UI teachers are more proficient with a mean of 4.13±1.08 in the use of Word processing. This is followed by OAU 3.84±1.13 and OOU, 3.68±0.93. IKERE is found to be least, with a mean of 2.68±1.24. Proficiency in the use of Excel is particu-

larly high in OOU (3.58±1.12), interaction with some of the teachers revealed that this was influenced by the university policy at some points. In 2002, OOU authority demanded that all lecturers must process and submit their students' results in MS-Excel format; this was necessitated by student enrollment explosion during this period. This therefore paved way for some of the lecturers to make arrangement for private training on the use of Excel. Also, the expertise of MS-PowerPoint (a specialized package for presentation) was measured among the teachers; we found its use to be more prominent in UNILAG as it accounts for a mean of 3.67. The college of

education IKERE and the polytechnic OFFA were found to be below average with a mean of 2.30 and 2.07 respectively. Facilitating research activity is one area where computers are very useful; In this regard, Table 5 shows that UI is ahead with a mean of 4.33 followed by OAU and as usual; IKERE is least among others with a mean of 2.78. UI taken a lead in this regard is not so surprising considering the staff profile. A good number of the teachers in UI are Ph.D holders with extensive research experience and involvements. Having the mean for majority of each of the Institutions above average of 2.5, especially in the use of MS-Word, MS-Excel, MS-Power Point and Research Activity, shows that all these Institutions are grossly proficient in Computer Applications. The only area in which many of them fell below the average mean of 2.5 is in the proficiency level of programming, only UNILAG and OOU alone are found to have a mean of 2.87 and 2.62 respectively.

In Table 5, we observe three different levels of e-mail proficiencies with UI and OAU teachers belonging to the first level, better than OOU, IREE and UNILAG, which are classified into second level. Lastly, regarding e-mail proficiency OFFA and IKERE are grouped in the lowest level. UI has the highest mean of 4.19 in the proficiency level in the use of World Wide Web followed by OAU, OOU

UNILAG and IREE with mean of 3.78, 3.68, 3.64 and 3.43 respectively while IKERE is 2.80 and OFFA 2.55. This makes it clear that all of the respondents across the institutions use WWW proficiently. In the use of search engine, teachers in OFFA and IKERE have the same proficiency level (mean=2.68) while the highest is revealed in UI with a mean of 4.26, followed by OAU, 3.89 this is closely followed by OOU with 3.79, IREE 3.56 and UNILAG has a mean of 3.51. Use of remote login saw that OOU led with a mean of 3.28, then UNILAG 2.91 and IREE 2.81 while others fell below average mean with OAU, UI, OFFA and IKERE has 1.75, 2.46, 2.22 and 2.20 respectively. Use of file transfer protocol shows that OOU is at the top with 3.02 closely followed by IREE with a mean of 2.96, teachers in UNILAG and UI also make use of file transfer protocol with mean of 2.67 for UNILAG and 2.54 for UI. Other institutions teacher responses showed that their proficiency level is lower than average with OFFA 2.43, IKERE 2.14 and OAU with the lowest mean of 1.88. Teachers in OOU chat more than their other colleagues with a mean of 3.55 followed by IREE with 3.29. In UI, the mean is 2.53 and UNILAG 2.62 also, teachers from OAU, OFFA and IKERE chat less with mean of 2.29, 2.13 and 2.11 respectively.

Table 5: Institutional Rating of Proficiency in Selected Computer Applications and Internet Services

Computer Applications		OAU	UI	UNILAG	OOU	OFFA	IRE	IKERE
Word processing	Mean	3.84	4.13	3.54	3.68	3.12	3.48	2.68
	SD	1.13	1.08	0.93	0.93	1.05	1.13	1.24
Excel	Mean	2.80	3.29	3.31	3.58	2.40	3.14	2.52
	SD	1.28	1.32	1.05	1.12	1.39	1.07	1.08
Ms-Power Point	Mean	3.09	3.60	3.67	3.32	2.07	2.94	2.30
	SD	1.39	1.20	0.99	1.25	1.14	1.14	1.13
Research Activity	Mean	3.64	4.33	3.57	3.40	3.11	3.16	2.78
	SD	1.19	0.99	1.19	1.22	1.14	1.12	1.10
Programming	Mean	1.80	2.33	2.87	2.62	2.13	2.49	2.30
	SD	1.12	1.63	1.16	1.28	1.20	1.09	1.23
Internet Services								
E-mail	Mean	4.20	4.37	3.62	3.87	2.79	3.63	2.76
	SD	0.94	0.88	0.86	1.11	1.20	1.00	1.24
World wide web	Mean	3.78	4.19	3.64	3.68	2.55	3.43	2.80
	SD	1.12	0.96	0.90	1.08	1.20	1.19	1.10
Search engines	Mean	3.89	4.26	3.51	3.79	2.68	3.56	2.68
	SD	1.15	1.06	1.12	0.93	1.20	1.15	1.21
Remote login	Mean	1.75	2.46	2.91	3.28	2.22	2.81	2.20
	SD	1.00	1.34	1.06	1.24	1.15	1.12	1.01
File transfer protocol	Mean	1.88	2.54	2.67	3.02	2.43	2.96	2.14
	SD	1.05	1.46	1.06	1.13	1.33	1.26	1.23
Chatting	Mean	2.29	2.53	2.62	3.55	2.13	3.29	2.11
	SD	1.41	1.55	1.21	1.21	1.22	1.37	1.22
Others	Mean	1.64	1.26	2.36	3.59	2.24	2.95	2.25
	SD	1.03	0.79	1.18	1.08	1.09	1.38	1.04

Source: Authors' Survey, 2008

Relevance and Challenges of Computer and Internet

On the overall, based on the teachers' perceptions, the use of computer is considered very relevant to work as a mean of 4.05 ± 1.07 was derived from the responses (Table 6). Also, the relevance of internet use to work was examined; we found a mean of 4.11 ± 0.57 . Regarding the challenges that users face in the use of Internet, the respondents reiterated slow

access speed and excessive loading time of websites. These are pointers to the need for better ICT infrastructure in Nigeria especially in higher schools of learning. Improved bandwidth broadband is also important and crucial if productivity is to be achieved at a better rate. Calestous Juma metaphorically compared Internet bandwidth in Sub-Saharan-Africa Universities as a whole institution using a single household connection in the United State of America (Juma, 2008).

Table 6: Teachers' Perception on Relevance of Computer and the Internet

	<i>Relevance of Computer use to work</i>		<i>Relevance of Internet use to work</i>	
	Mean	S.D	Mean	S.D
OVERALL	4.05	1.07	4.11	1.03
UI	4.72	0.58	4.70	0.57
OAU	4.51	0.79	4.46	0.84
UNILAG	4.00	0.89	3.93	1.07
OOU	3.88	0.99	3.68	1.17
OFFA	3.84	1.20	3.38	1.09
IREE	3.77	1.07	4.03	0.98
IKERE	3.61	1.22	3.64	1.18

Source: Authors' Survey, 2008

Conclusion and Policy Directions

Few literatures (Ureigho et al, 2006; Osunade et al, 2007; Kumar and Kaur, 2006; Luan et al, 2005; Pečiuliauskienė and Barkauskaitė, 2007; Peralta and Costa, 2007) that we perused relative to teachers' competence in the use of computer, its applications and Internet services coupled with our findings have shown improved level of proficiency of the higher institution teachers in Nigeria. There is no doubt that the teachers are good at elementary activities on computer and have acquired basic internet skills. Certain levels of success have been recorded in the use of some applications on the computer like: the Ms-Word, Ms-Excel, and Ms-PowerPoint. Little expertise is reported about the use of programming activities like: simple coding using HyperText Markup Language (HTML), and more specialised coding like PHP, C++, Visual basic to mention a few. There is a need for an improved knowledge in this area, especially simple HTML which will enable them to present more interactive materials (authoring) that will assist students' independent learning (Lê & Lê, 1999).

Our results also showed that the teachers have developed a good level of expertise over time (70% with over 3yrs experience) in the use of some basic Internet services, such as the use of email, World Wide Web and varied search engines. Some services

that require specialised skills like the use of remote login, file transfer protocol (FTP) are not so common among the teachers and an average proficiency is found. We also noticed that the teachers are consistent with the use of Computer and the Internet but they use the Computer more frequently. This is not surprising because computer provides the medium for internet accessibility; the internet cannot be accessed in isolation of the computer. It is noteworthy to state that there are some other activities that could be performed alone on the computer without having to employ the internet. The use of the Internet has been found to further equip the teachers by providing them with the latest information on the worldwide (Kumar and Kaur, 2006).

Taken together, the results bring to the fore the necessity of interventions in the areas of capacity building, proficiency enhancement and infrastructural provision. Borrowing from Calestous Juma, deliberate effort must be made to bring affordable connectivity to the continent (Africa) and to its Universities, which is recommended to be supported by International policy community. (Juma, 2008). Also of particular note is the gross irregularity in the supply of electricity which is a necessary amenity. Without this, further impediments and backwardness may set-in to the country's education and economic development. E-learning initiatives are not also likely to thrive nor achieve optimal results expected. Also, deliberate efforts must be made by institutions to

ensure that their personnel develop capacities in the deployment of ICTs in their job functions. The kind of directive in OOU which brought about enhanced

capabilities of the teachers there in the use of MS-Excel is a useful case in point.

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