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E-Mail Usage by Technical Education Students in Nigerian Universities

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Introduction

The convergence of computer technology and telecommunications has resulted in information and communications technologies (ICTs) as exemplified by a growing number of electronic communication and retrieval system; activities which were considered impossible in the past or those that were hampered by time and distance are now performed with ease, the ability to network computers in different locations has eased the transfer and retrieval of information (Adeogun, 2003). With wider internet connectivity, educational institutions in developing countries are now beginning to tap the many opportunities offered by today's information societies; these digital connections act as gateways where researchers can find, download and share world knowledge and learning materials; they can be platforms where local research is published, disseminated and uploaded; and they can facilitate links and collaboration among scientists, promoting discourse and dialogue on shared issues and problems (INASP, 2003).

The explosive growth of communications technologies has given potential users a wide range of new tools to communicate – fixed lines phones, mobile phones and e-mail (Scott, 2004).

Electronic mail has been an extraordinary success, both as a communication medium and as a computer application; for many, it works as if by magic as it can reach its destination moments later at virtually no cost after it has been sent. Anderson *et al.* (1995) enumerates the advantages of e-mail. According to Alderson *et al.*, e-mail services can be used both for

"telephone-type" messages and for other usually longer messages or documents that might otherwise be sent using facile or hard copy postal services, both public and private. Compared with the telephone system, one major advantage of an e-mail service is that it eliminates telephone tag; it also provides a content record of the interactions that can be retrieved, printed, studied, selectively forwarded and in general reused. Other advantages are that it allows (but does not require) more deliberative and reflective, but still interactive conversational dialogues, as well as one-to-many and many-to-many exchanges; these features have given rise to many new social, commercial, and political groupings of people such as the virtual communities using e-mail as the linkage – it provides a common context among a group of participants.

It has been reported by two recent studies that students constitute the highest number of cybercafé users in African countries (Adomi *et al.*, 2003; Sairosse and Mutula, 2004) and majority of the users visit the cafes for e-mail communication (Sairosse and Mutula, 2004). Teenagers and young adults (most of whom are students) usually send e-mail to communicate with their boyfriends or spouses (Adomi *et al.*, 2003).

Chisenger (1997) surveyed the use of e-mail at the National University of Lesotho. To find out the extent and purpose of e-mail use on campus, a questionnaire survey supplemented with personal interviews was conducted from 1 December 1995 to 31 January 1996. The questionnaire requested information on whether the respondents had access to computer with e-mail facilities; were using e-mail and if so for what purpose; among others. Chisenger discovered that all e-mail

users in the university had access to machines located at their workplace with most of them (55.9 percent) using machines installed in their faculty or departmental computer rooms, while 38 percent have access to machines used by their departmental secretarial staff; that e-mail was used by respondents for day to day activities; e-mail has improved their personal communication especially when communicating with colleagues in Europe and the USA, indicating further that the time from sending a request for information and receiving the requested information or a response from abroad has been reduced to three days in most cases, as opposed to about a month when the postal system is used; abstracts for conference papers and journal articles for publications have been sent using e-mail and thus meeting the deadlines. The foregoing indicates that the e-mail communication system is used by students in general and by members of the university community. It facilitates quick and easy exchange of communication and sending/receiving of scholarly information.

This study is intended to assess the usage of e-mail by technical education students in some Nigerian universities – University of Benin, Benin City, Nnamdi Azikiwe University, Awka and Delta State University, Abraka. The focus of technical education in Nigeria is to provide trained human resources in the applied sciences, technology and business as well as give training and impart the necessary skills to individuals to enable them be self-reliant economically (Federal Republic of Nigeria, 1998). There are three levels at which technical education is offered. There are craft, technician and engineer levels. Craft training is offered in technical schools, technician training in technical colleges, monotechnics and

Polytechnics, while engineers are trained in Nigerian universities. Monotechnics are single discipline technological institutions for programmes such as agriculture, fisheries, forestry, surveying, nautical science, petroleum, etc.

The initiative for proving technical education in the context of formal education in Nigeria was taken by the Christian missions as early as 1897. Government effort to establish technical training institutions started in 1908 with the School of Survey in Oyo, School of Agriculture at Ibadan and Zaria (1930 and 1935 respectively), School of Engineering/Architecture in Lagos (1932) and the Nigerian Railway Training School, Lagos (1942). The Yaba Higher College, Lagos was established in 1932 as the first higher educational institution in Nigeria and it provided courses in engineering, teacher education, medicine, pharmacy, agriculture and forestry (Yakubu, 2002). At the tertiary level of education, the universities offer technical education programmes with the aim of contributing to national development through relevant high level manpower training in various technologies (Anyakoha, 2001).

The purpose of this study is to survey e-mail use by technical education in Nigerian universities. It explores personal characteristics of the respondents, reasons for using e-mail, how long they have been using e-mail, their e-mail address, places where they use/access e-mail, number of e-mails sent and received every week, frequency of checking e-mail, frequency of deleting e-mail, the type of mailing system they prefer and reasons for preference, benefits derived from e-mail and the problems encountered in e-mail use.

It is hoped that the findings of this study will assist relevant authorities to guide and encourage students to become better users of e-mail communication system and enable e-mail service providers to improve on the quality of their services/facilities.

Methodology

The research design for this study uses the survey method using the questionnaire to collect data from the respondents. In order to ensure that

relevant items are included in the questionnaire, extensive literature on the subject was consulted. In order to ensure its face validity, the data collection instrument was given to experts in the field to go through.

Copies of the questionnaires were administered and retrieved from 112 respondents in three Nigerian Universities - 40 from University of Benin, 30 from Nnamdi Azikiwe University and 42 from Delta State University. The data generated were analysed by gender using frequency counts and percentages.

Findings and discussion

Of the 112 respondents, 65 are males while 47 are females, as can be seen in Table I.

It has been noted elsewhere (Adomi and Ogbomo, 2000) that more males than females enrol for science and technology courses in Nigerian Universities. This corroborated by the ratio of gender participation in this study.

While 86.2 percent of the males use the e-mail to communicate with parents/relatives, 66 percent are motivated to do so. A majority of the students are sponsored by their parents/relatives. Therefore, they would communicate with their parents/relatives for many reasons - request for payment of school fees, stipends, money for books, accommodation and make enquiry about family affairs. The students often resort to the use of e-mail as a fast means of communication for such purposes.

Table II reveals that 69.2 percent of the males and 46.8 percent of the females use the e-mail to communicate with course mates; students can send information about what is happening in school to their course mates that travelled. Such information could be assignments given by lecturers, lecture and examination timetables, date of resumption and matriculation, etc.

Table I
Sex of respondents

Sex	Frequency	Percent
Male	65	58.04
Female	47	41.96

A total of 24.6 percent of the male respondents and 19.1 percent of the females communicate with their lecturers via e-mail. E-mail is a quick means through which lecturers can give assignments to a large number of students as it facilitates sending of one piece of information to a large number of people. Students have been known to send chapters of their research projects/theses to their supervisors, especially if such supervisors are part-time lecturers or visiting lecturers to the institutions or if their supervisors are on annual vacation/sabbatical leave.

"Above 25 months" ranked first as the time both sexes have been using e-mail for communication. The analysed data in Table III show that most of the respondents have been using e-mail for over ten months.

The question was asked to find out through which e-mail provider(s) the students have e-mail address(es). Table IV reveals that most of them - 84.6 percent males and 95.7 percent of the females - are having e-mail addresses with Yahoo! while Hotmail rank second. Thus most of the students have free web-based e-mail addresses. This could be due to some obvious reasons. First the free web-based e-mail can be accessed from any part of the world with internet connectivity; second, they are free and therefore can be used by students without financial stress; third, they are more reliable than institution/commercial based e-mail services. Also students do not have access to use of institution e-mail service as only staff (where they are available) can have e-mail accounts with them.

A majority of both sexes - 95.4 percent of males and 83 percent of females - use/access e-mail in cybercafés (Table V). Cybercafés are places where entrepreneurs provide internet public access services for a fee; they can be run as part of services provided in restaurants, hostels, etc. or could be places set aside wholly for public access internet services. They are run in order to enable people who do not have personal internet connectivity or are travelling to have access to the resources and services of the internet. Cybercafés are very important in Nigeria as the cost of having internet connectivity is so high that private

Table II
Motivation for use of e-mail

Motivations	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
To communicate with parents/relatives	56	86.2	31	66.0
To exchange computer files	9	13.8	5	10.6
To communicate with lecturers	16	24.6	9	19.1
To exchange research ideas	36	55.4	17	36.2
For discussion groups	15	23.1	6	12.8
To send information obtained from the web	35	53.8	22	46.8
To send pictures	37	56.9	21	44.7
To send card and/or calendars	45	69.2	26	55.3
To communicate with course mates	45	69.2	22	46.8
To communicate with friends	58	89.2	29	61.7
To send/receive love letters	28	43.1	22	46.8
To send/receive technical advice	27	41.5	14	29.8
To receive e-newsletters	32	49.2	11	23.4
To send/receive academic information	53	81.5	33	70.2
For chatting	34	52.3	21	44.7

Table III
How long respondents have been using e-mail

How long	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
1-5 months	8	12.3	6	12.8
6-10 months	10	15.4	10	21.3
11-15 months	9	13.8	7	14.8
16-20 months	10	15.4	5	10.6
21-25 months	5	7.7	5	10.6
Above 25 months	21	32.3	12	25.5
No response	2	3.1	2	4.3

Table IV
E-mail service providers of respondents

E-mail providers	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
Yahoo!	55	84.6	45	95.7
Hotmail	7	10.7	5	10.0
Excite	-	-	1	2.1
Justice	1	1.5	2	4.3
37.com	2	3.1	2	4.3
Info web	-	-	5	10.0
Skannet	-	-	1	10.0
No response	2	3.1	-	-

Table V
Where respondents use/access e-mail

Places where e-mail is used/accessed	Male (n = 65)		Female (n = 47)	
	No	%	No	%
Cybercafés	62	95.4	39	83
Lecturers' offices	2	3.1	1	2.1
Friends' offices	1	1.5	7	14.9
Parents/relatives' offices	4	6.2	3	6.4
At home	2	3.1	2	4.3
No response	2	3.1	-	-

individuals can not (easily afford it (Adomi *et al.*, 2003).

Students are not yet provided with free internet services in Nigerian universities; the majority of them have to resort to using cybercafes located within the campuses and outside the campuses for e-mail communication and other internet services.

"Less than ten" ranked first as the number of e-mails sent by both sexes (61.5 percent males and 72.3 percent females) in this study as can be seen from Table VI, followed by 10-20 mails. One each of the female respondents send 61-70, 71-80, 81-90, 91-100 and more than 100 e-mails. It can be deduced from Table VI that a higher percentage of the female respondents send more e-mails than males.

As can be seen from the analysed data in Table VII, most of the respondents (63 percent of males and 63.8 percent females) receive less than ten e-mails every week followed by those who receive between 10-20 e-mails. The volume of e-mails one receives is dependent on some factors. First, it depends on the number of people one sends e-mail to; second, it is dependent on the number of those who have one's e-mail address; others include the position one occupies; one's business/occupation; the number of information resources one subscribes to; discussion groups one belongs, etc. These are some of the factors which could have been responsible for the number of mails the respondents in this study receive every week.

While "Twice a week" ranks highest – with 46.2 percent responses from males and 31.9 percent from females – "Occasionally" follows (with 27.7 percent males and 23.4 percent females) (Table VIII). It should be noted that the subjects of the study are students, most of whom may not be able to afford to pay in cybercafes to regularly check their e-mails. It should also be pointed out that the frequency of e-mail checking is dependent on ready availability and access to terminals/personal computers with internet connectivity, the volume of e-mails one expects/receives, etc. As most of the students do not send/receive large number of e-mails frequently, it is only natural that most of them do not check their e-mail daily. That most do not

Table VI
Number of e-mails sent per week

Number sent	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
Fewer than 10	40	61.5	34	72.3
10-20	21	32.3	11	23.4
21-30	2	3.1	2	4.3
31-40	-	-	2	4.3
41-50	1	1.5	1	2.1
51-60	1	1.5	2	4.3
61-70	-	-	1	2.1
71-80	-	-	1	2.1
81-90	-	-	1	2.1
91-100	-	-	1	2.1
More than 100	-	-	1	2.1

Table VII
Number of e-mails received per week

Number received	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
Fewer than 10	41	63	30	63.8
10-20	12	18.5	11	23.4
21-30	3	4.6	2	4.3
31-40	-	-	-	-
41-50	2	3.1	-	-
51-60	-	-	-	-
61-70	1	1.5	1	2.14
71-80	-	-	1	2.1
81-90	1	1.5	-	-
91-100	-	-	1	2.1
Over 100	5	7.6	-	-
No response	-	-	1	2.1

Table VIII
Frequency of checking e-mail box

Frequency	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
Daily	4	6.1	6	12.8
Twice a week	30	46.2	15	31.9
Once a week	13	20.0	12	25.5
Occasionally	18	27.7	11	23.4
No response	-	-	1	2.1

check daily could be due to the fact that they do not have ready access to free terminals/personal computers with internet connection.

A question was asked to find out how frequently the respondents delete their e-mails. While 38.5 percent of the male respondents indicated occasionally, 27.7 percent females did so (Table IX). Most e-mail users do not consider deleting their e-mails except they are alerted by their e-mail service providers of having exceeded 75

Table IX
Frequency of e-mail deletion

Frequency	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
Daily	1	1.5	3	6.4
Every two days	6	9.5	5	10.6
Once a week	17	26.2	14	29.8
Once in two weeks	10	15.4	3	6.4
Once a month	2	3.1	3	6.4
Occasionally	25	38.5	13	27.7
Never	4	6.2	1	2.1
No response	-	-	3	6.4

percent of their e-mail storage capacity. However, the mails that some people first consider deleting are unsolicited and returned mails (mails returned due to incomplete/wrong destination address) before other ones.

An overwhelming majority of both sexes (96.9 percent males and 95.7 percent females) prefer e-mail while only 3.1 percent of the males and 4.3 percent of the female respondents prefer the postal system of communication (Table X). People, the world over now communicate more using e-mail than through the postal system. It has been reported that at a recent meeting of the West African Regional Organisation of Postal Services (CPAO), that delegates shared the pain they were taking from the impact of e-mail on their business as business loss of 5-15 percent were discussed. Although letters will never disappear completely, African Postal Services are a great deal more vulnerable than their developed world counterparts to e-competition – they have much lower volumes and the level of security they offer is often far from impressive; post office box subscribers much prefer to use e-mail (Balancing Act, 2003). Reasons for preferring e-mail are depicted in Table XI while the ones for preferring postal system are presented in Table XII.

In Table XI, most of the respondents (44.4 percent males and 55.6 percent females) indicated that they prefer e-mail because it is faster. E-mail can be delivered instantly to the destination and the recipient can also respond to the mail immediately. Depending on ready access to internet-enabled machines, two people can exchange several correspondences a day, irrespective of the distance between the two of them. Conversely, it can take up to three or

Table X
Type of mail preferred

Type of mail	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
E-mail	63	96.9	45	95.7
Postal mail	2	3.1	2	4.3

Table XI
Reasons for preferring e-mail

Reasons	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
Faster in mail delivery	28	44.4	25	55.6
Cheaper	4	6.3	3	6.7
More confidential	2	3.2	1	2.2
More convenient	3	4.8	4	8.9
Can be received/delivered in any part of the world	3	4.8	3	6.7
More effective and efficient means of communication	1	1.6	1	2.2
Safer/more reliable	8	12.7	2	4.4
Saves travelling cost	1	1.6	2	4.4
Can send/receive more volume of information	—	—	1	2.2
Ease of access	4	6.3	2	4.4
Can save needed information from the web	—	—	1	2.2
Promote/enhance IT skills	1	1.6	1	2.2
More directed to the recipient	—	—	1	2.2
Easier to obtain research information	1	1.6	—	—
No response	13	20.6	7	15.6

Table XII
Reasons for preferring postal system

Reasons	Male (n = 7)		Female (n = 2)	
	No.	%	No.	%
Speedy delivery of letters	—	—	1	50
Cheaper	—	—	1	50
Guarantees more confidentiality	1	50	—	—
No response	1	50	—	—

four weeks on rare occasions for one in West Africa to get a response to a letter sent to the UK through the postal system.

Only one respondent prefers the postal system because of speed of delivery of letters as compared to 52 (27 males and 25 females) who prefer e-mail as faster means of mail delivery. It should be pointed out that the type of mail one wants to send can determine the means – e-mail or postal – to employ to do so. There are obviously some mails one cannot send via the e-mail system. For instance, printed textbooks/journals/solid objects can be sent to the recipient not through e-mail but postal service. Each therefore has its advantages and disadvantages.

The respondents have gained so much from the use of e-mail, as can be seen from the data in Table XIII. Speed

of delivery ranked first, followed by ease of obtaining academic information, limiting the need to travel and low cost, in that order.

Slow computer response is the problem noted by most of the students (64.2 percent males and 46.8 percent

Table XIII
Benefits derived from e-mail use

Benefits	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
Speed of delivery	53	81.5	38	80.9
Obtaining academic information with ease	42	64.6	25	53.2
Limited the need to travel	41	63.1	21	44.7
Low cost	26	40.0	9	19.1
Opportunity to send the same message to several people instantly when the need arises	1	1.5	—	—
Others	3	4.6	—	—
No response	—	—	2	4.3

females) (Table XIV). With increasing internet connectivity, educational institutions in developing countries are beginning to tap the many opportunities offered by today's information societies. The same connectivity also supports all sorts of applications and behaviours that consume bandwidth, for instance, it helps to distribute e-mail spam and viruses, it allows music lovers and sports fans to keep up with their hobbies and favourite artists from around the world, it can be used to view pornography, it can provide opportunities for computer hackers to practice their skills, and it facilitates cross-border movement by all kinds of intelligent software, agents, worms and spiders harvesting and indexing content or simply tracking usage and offering upgrades. It can be termed abuse where these applications hamper the intended use of the internet connection. These and many others applications, all consume the limited bandwidth of higher education institutions in developing countries, resulting in response times slow down and performance drops, leading to frustrated users and ICT managers, a majority of researchers, information providers and institutions remain unable to access the high speed, broadband connectivity that is more and more necessary for research, teaching, and learning (INASP, 2003).

Slow internet/computer response can hamper users to derive full satisfaction from the use of e-mail. As stated earlier, students are yet to be provided with free internet services in Nigerian universities. Students therefore pay for access time and are provided with a ticket bearing username and password which are keyed into the system timer. Once the bought time expires, the timer automatically signs out the user. If there

Table XIV
Problems associated with e-mail use

Problems	Male (n = 65)		Female (n = 47)	
	No.	%	No.	%
Presence of junk/spam mails	17	26.2	12	25.5
Inadequate/lack of computer internet skills	42	64.2	22	46.8
Slow computer response	42	64.2	22	46.8
Return of sent mails because of incorrect addresses	17	26.2	8	17.0
High cost of e-mail	22	33.8	11	23.4
Others	-	-	7	14.9

is slow response from the system, this can eat up much of the bought time, which could lead to frustration of the user.

Conclusion

E-mail, which allows users to communicate in fast speed, has become a very popular means of information exchange all over the world. Its use enables both academics and students to send and receive academic information, exchange research ideas and generally facilitate cheap and effective communication. The Nigerian universities technical education students and most other users prefer it to the postal system, which is widely considered to be a slower means of mail delivery. Though e-mail is often the preferred means of communication, it is not amenable to delivery of certain mails. Presence of spam e-mails, inadequate and complete lack of IT skills, lack of access to internet-enabled machines, slow internet response among others could deter students and other users from taking increased advantage of e-mail as a means of communication.

Providing the students with opportunities to acquire IT skills through information literacy/internet training programmes/courses, provision of free terminals connected to the

internet to students, increasing the internet connection speed in the institutions could make the students better and greater users of e-mail.

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