

INTERNET USE PATTERN OF UNDERGRADUATE STUDENTS AT THE UNIVERSITY OF LAGOS, NIGERIA

Stella I. Anasi

University of Lagos Library, Akoka-Yaba, Nigeria

Abstract

This study examined the pattern of Internet use by undergraduate students at the University of Lagos, Main Campus, Akoka, Lagos, Nigeria. It revealed that the level of Internet use is low among undergraduate students from both the Faculty of Education and Faculty of Law. It also revealed that though majority of the students browse the Internet many of them cannot design search strategies. However, the study showed that internet use has very high impact on the academic/career related activities of the students. The study recommends the provision of faculty computer laboratories equipped with internet facilities, installation of solar electric power back-up system, and the integration of Internet and computer literacy into the compulsory general studies programme of the University.

Introduction

The Internet has revolutionized every facet of educational activities. It is a vibrant tool with extraordinary possibilities for research, teaching, learning and publishing activities. It provides a massive set of information resources such as online catalogues, databases, e-books, e-journals, and online newspapers and magazines. In fact, the Internet represents a single-repository of educational resources far more than any single educational institution can acquire and organize. It is capable of performing more than the role of traditional libraries. Adeogun (2003) opined that people who have necessary skills and infrastructural facilities are more than ever before accessing extraordinarily esteemed resources at a much greater depth and quantity.

Currently, the University of Lagos, Nigeria is restructuring academic and research work to reflect the global shift towards electronic learning. It has initiated the Virtual Learning Environment (VLE) project by acquiring the fibre-optics infrastructure, Very Small Aperture Terminal (VSAT), Sun Microsystems and Visual Data Centers. These technologies will enable the University to extend its domestic networks across national and international frontiers. Also, in the first quarter of 2004, the University organized a train-the-trainer course for selected academics drawn from all the faculties. Presently, the University of Lagos, Nigeria is one of the institutions selected by MTN Foundation Universities Connect Project. This is a collaborative facility between MTN Foundation and Net Library Nigeria Limited aimed at providing access to digital information resources worldwide and sustainable access to up-to-date information in tertiary

institutions in Nigeria. Already, the physical structures have been put in place at the Akintunde Ojo Library Extension. An extensive literature search showed that, in spite of the tremendous impact of Internet in educational activities very few studies had been carried out on its pervading influence on educational enterprise in Nigeria.

Olatunji-Bello, Ibegwam and Odugbemi (2002) examined the use of computer and internet services provided by the medical library for staff and students of the College of Medicine, University of Lagos. It appears, from the study, that the impact of internet use in educational activities by the larger undergraduate population at the main campus of the University is taken for granted. Their work, however, has little in common with the present paper. Obviously, the population involved and the environment are significantly different. While their work focused on staff and students' use of Computer and Internet resources at the Medical Library, College of Medicine, Idi -Araba, this study is directed at the undergraduate students' use of Internet facilities located in and around Akoka Campus. This study, therefore, was designed to gather and analyze information on the pattern of Internet usage by undergraduates of the University of Lagos, including students' level of skill and ability to use the internet, the impact of internet usage in educational and career-related activities of undergraduate students in eight faculties at the Akoka main campus of the University of Lagos. The outcome of this study will contribute to the development of policies to facilitate provision and utilization of the internet for teaching, learning and research activities.

Literature Review

The Internet has become dramatically and strategically important in a wide range of activities including banking, education, communication and politics. Seifkashani (2003) observed that internet facilitates, classifies and enables the exchange of information and knowledge which are the key to economic and educational development. Such information varies from local news to business, education or health information which helps to enhance the standard of living of its users.

The impact of the internet to teaching, learning, research and administration structures in universities all over the world is tremendous. In Australia, Macchiusi and Trinidad (2001) wrote that AARNet was one of the first academic computer networks in the world whose existence and the skills of its technicians enabled Australia to be an early adopter of internet technology and application. This encouraged higher education institutions in Australia, especially Curtin University of Technology, to adopt and make major commitments towards using internet technologies to improve administration, research, teaching and learning despite financial constraints.

In the United States, Wilson (2003) wrote that internet has changed the research patterns in political science throughout the world. He affirmed that “the advent of the internet and the use of computers in general provided virtually instantaneous access to treasure troves of data allowed for the electronic manipulation of that data in ways that reduced the man-hours required for analysis to a mere fraction of what had heretofore been required, and permitted dissemination of research results in essentially real time”. This significantly transformed the research environment of political scientists in both qualitative and quantitative terms.

In Mexico, a study carried out by Ramirex (2003) on the impact of the internet on the reading practices of college students of the schools of philosophy, literature, and sciences of the National University of Mexico revealed that there was a growing interest in digital reading and that a significant percentage of the surveyed students increasingly depended on the internet for their school-related activities because it was easy and fast. Also, 82% of them used computers to write papers. However, most of them were not proficient in hypertext.

In Iran, Seifkashani (2003) observed that the internet was expanding very rapidly with tens of thousands of users, mostly academic, everywhere in the country. He noted that the Iranian Center for Scientific and Technical Research and the Ministry of Telephone and Communications are the main providers of internet facilities to universities and research institutes. Thus many universities have established computer sites to promote internet use by both students and professors.

In China, the development and application of the internet is remarkable. By December 2002, the statistics from the China Internet Network Information Center (CNNIC, www.cnnic.net) showed that there were already more than 20.83 million host computers and 59.10 million internet users. The provisions of news online, digital journals and e-books on the internet have had enormous impact on reading in China (Qunqing, 2003). Confirming the internet development in China Wilson (2003) in his study revealed that internet use has changed the entire research environment in China with people having access to information on a world-wide basis. He affirmed that resorting to the internet is now an integral part of Chinese research behaviour with younger students desiring the use of internet more than older ones. In fact, internet use has enabled scholars in China to operate at equal footing with their counterparts in other parts of the world.

In 1997, internet was introduced in the University of Botswana. Ojedokun (2001), in his study, found out that a large number of the students (77%) had access to internet facilities in the University of Botswana. While

Ojedokun and Owolabi (2003) indicated that majority of the staff of the University of Botswana (94.4%) could access the internet in their offices.

At the National University of Singapore, the Pacific Internet (Technet Unit) was set up in 1991. This is most experienced internet access provider in the region and it was funded by the National Science and Technology Board (NSTB) to provide internet services to the education, research and development communities. Pacific Internet also organized training for students from tertiary institutions who volunteered to work as internet patrol (Sabaratnam, 1997).

The University of Ghana was connected to the internet in 1998. Hinson, Adika and Buatsi (2005) studied the use of the internet by 166 academic staff of the university and reported that educational databases, electronic mail, the worldwide web, discussion group, and companion lecturing websites were used in teaching and research.

Aragba-Akpore (2003) reported that in Nigeria there were 153,350 internet users in 2001, 38,100 were connected through wireless while 115,250 were linked up via dial-up but with the increase in the number of cyber cafes providing services through VSAT and radios, the number of internet users has tripled.

Okike (2000) observed that only 18 out of 37 universities in Nigeria, had access to the internet. While Sani and Tiamiyu (2004) in their study of automated services in Nigerian Universities, wrote that cyber cafes, e-mail, internet browsing etc were provided not by university units but by private medium and small enterprises operating within and around the university campuses.

Olatunji-Bello, Ibegwam and Odugbemi (2002) examined internet and computer services usage in the College of Medicine, University of Lagos and reported that major deterrents to internet use, as indicated by the respondents, include telephone dialing time delay and power outages from public electric supply.

Methodology

Descriptive survey research design was adopted for the study. The target population of the study is 21,234 full time undergraduate students in the 2003/2004 academic sessions from eight faculties in the Main Campus at Akoka. The sample size consists of a randomly selected 800 full time undergraduate students from the eight faculties. This is based on Krejcie and Morgan (1970) recommendation of a sample size of 384 for a population of 200,000. This selection excludes undergraduate students in

the College of Medicine, Idi-Araba. The survey was carried out by means of a two part questionnaire which sought information on the bio-data of the respondents and pattern of internet usage, level of skills and ability to use the internet, impact of inter usage on education and career-related activities, and constraints to internet use. 800 copies of the questionnaire were distributed to the respondents. Five hundred and ninety-six (596) of those returned were found usable – a response rate of 74.5%. The data was analyzed using the Statistical Package for Social Science (SPSS). Percentages, frequency and mean item scores were employed in the reporting of the findings. Mean item score was used to generate ranking of the variables of interest using the formula:

$$\text{Mean item score} = \frac{\sum n_i K_i}{\sum K_i}$$

Where n_i = Number of responses to the variable being investigated.

K_i = The value of the respondent rank.

Findings and Discussion

The background data collected from the respondents show that 60 (10.1%) was from the Faculty of Arts, 70(11.7%) from the Faculty of Social Sciences, 91 (15.3%) from the Faculty of Environmental Sciences, 98 (16.4%) from Faculty of Business Administration, 51 (8.6%) from the Faculty of Law, 90(15.1%) from the Faculty of Engineering, 29 (4.8%) from the Faculty of Education, and 107 (18.0%) from the Faculty of Sciences. In terms of gender, 391 (65.6%) were males while 205 (34.4%) were females. In terms of age 88 (14.8%) were between 16-20 years, 125 (21%) were between 26-30 years, 21 (3.5%) were between 31-35 years, and 22 (3.7%) were above 35 years. The age range of 21-25 years attracted the highest response of 340 (57%). This finding affirmed earlier study by Akporido (2004) who maintained that it is mostly this age bracket of university students that thronged the cyber cafes to send or receive e-mails and browse the web for academic information.

With regard to academic levels, 62 (10.4%) were in year one, 107 (18%) were in year two, 133 (22.3%) were in year three, 168 (28.2%) were in year four, 100 (16.8%) were in year five, while 26 (4.3%) were in year 5 plus.

On the issue of internet literacy, 57 (9.6%) indicated that they were not internet literate, while 533 (89.4%) responded in the affirmative, and 6 (1%) did not respond to the question. In relation to e-mail addresses, 536 (89.9%) indicated that they had e-mail addresses, 30 (5%) did not have e-mail addresses, while 30 (5%) did not respond to the question. The high

percentage of internet literacy (89.4%) and possession of e-mail addresses (89.9%) is an encouraging trend as this will assist them to access vast information and educational resources on the web for their academic work.

TABLE I: Frequency of Internet Use

Frequency of use	FACULTIES								Total	%
	Law	Social science	Environmental science	Arts	Business Administration	Science	Education	Engineering		
Daily	7	8	10	7	13	7	-	7	59	9.9
Once a week	9	23	32	25	32	37	8	34	200	33.6
Twice a week	3	10	13	6	11	14	4	14	75	12.6
Thrice a week	2	6	10	2	10	9	-	15	54	9.0
Rarely	24	18	22	17	28	33	12	17	171	28.7
Never	6	5	4	3	4	7	5	3	37	6.2
Total	51	70	91	60	98	107	29	90	596	100

From table I: Taking the first four levels of 'frequency of use' to mean regular use of the internet, then the number of students who use the internet regularly as a percentage of the sample population in each faculty is as follows: Engineering 70 (77.7%), Environmental Sciences 65 (71.4%), Business Administration 66 (67.3), Social Science 47 (67.1%), Arts 40 (66.6%), Science 67(62.6%), Education 12(41.3%), and Faculty of Law 21 (41.1%)'

This indicates low internet utilization among undergraduates in the Faculties of Education and Law. It does appear that while undergraduate students in the other faculties are responding positively to the inevitable challenges of Information and Communication Technologies, their counterparts in the two faculties are either conservative or unwilling to move with time. Another reason could be that Law and Education students of this University are ignorant of the vast legal and education resources on the Internet, and perhaps, also, lack the requisite skills to exploit them. Ojedokun and Owolabi (2003) are of the opinion that acquisition of Internet skills could lead to the discovery of valuable resources on the Net. Undergraduate students from the Law and Education faculties may soon realize that institutional deficiencies in internet facilities are not enough reason why ICT competencies are not acquired. The students are therefore expected to engage in radical retooling in order to cope and compete favourably with their colleagues within and outside the country in the emerging electronic frontiers.

This position is corroborated by Ojo and Akande (20005) who stressed that students need to acquire the requisite skills so as to maximize the potential of electronic resources.

Generally, 59 (9.9%) of the respondents use the Internet daily, 200 (33.6%) use the internet once a week, 75(12.6%) use the internet twice a week, 54 (9.0%) use the Internet thrice a week while 37 (6.2%) have never used the Internet and 171 (28.7%) rarely use the Internet. The implication of the findings is that 65.1% of the students use the Internet regularly while 34.9% of the student rarely or has never used the Internet. The non-users perhaps are laggards or late adopters of innovation. Another reason may be that Internet facilities are not easily accessible to them. A direct consequence of their inability to get relevant information and resources for their work is discouragement and avoidance of the use of Internet.

Table II: Level of Internet Skills and Ability.

Internet skills	Very High F(%)	High F(%)	Low F(%)	Very Low F(%)	None F(%)
Send and receive mail unaided.	301 (50.5)	150 (25.2)	40 (6.7)	28 (4.7)	56 (9.4)
Opening e-mail box unaided.	277 (46.5)	156 (26.2)	51 (8.6)	32 (5.4)	58 (9.7)
Browse the internet on your own.	275 (46.1)	150 (26.7)	51 (8.6)	33 (5.5)	60 (10.1)
Visit of websites.	195 (32.7)	177 (29.7)	100 (16.8)	45 (7.6)	54 (9.1)
Skilled user of search engines.	153 (25.7)	155 (26.0)	130 (21.8)	56 (9.4)	73 (12.2)
Familiarity with the Internet environment.	150 (25.2)	248 (41.6)	95 (15.9)	54 (9.1)	31 (5.2)
Saving search results on diskette.	144 (24.2)	134 (22.5)	111 (18.6)	71 (11.9)	104 (17.4)
Saving search results on hard disk.	122 (20.5)	116 (19.5)	141 (23.7)	75 (12.6)	110 (18.5)
Sending documents via the net.	116 (19.5)	147 (24.7)	123 (20.6)	73 (12.2)	103 (17.3)
Design of search strategies.	60 (10.1)	125 (21.0)	188 (31.5)	84 (14.1)	101 (16.9)

As indicated in Table II, 301 (50.5%) and 150 (25.2%) of the respondent possess very high skills and ability to send and receive mails unaided, while 40 (6.7%) of the respondents have low skill and ability to send and receive mails unaided. This implies that more than seventy-five percent of the respondents could send and receive mail unaided. Also, 277 (46.5%) of the

respondents possess very high skill and ability to open e-mail box unaided, 156 (26.2%) of the respondents possess high skill and ability to open e-mail box unaided, while 51 (8.6%) of the respondents possess low skill and ability to open e-mail box unaided. This reveals that more than seventy-three percent could open an e-mail box unaided. With regard to browsing the internet, 275 (46.1%) of the respondents possess very high skill and ability to browse the internet on their own, 159 (26.7%) of the respondents possess high skill and ability to browse internet without assistance, while 51 (8.6%) possess low skill and ability to browse the internet on their own. This shows that more than seventy-two percent could browse the internet unaided.

The next internet use index is skill and ability to visit websites. 195 (32.7%) of the respondents possess very high ability and skill to visit websites, 177 (29.7%) of the respondents possess high ability to visit websites while 130 (21.8%) have low ability and skill to visit websites. Other internet use skill and ability indices are as presented on the table. It can therefore be concluded that more than half of the respondents possess basic skills and abilities to browse the internet but cannot design search strategies. They are therefore not skilled navigators of the web and so will not very successfully exploit web-based information in a short time. It can be inferred that most of them employ trial and error in their attempt to access Internet resources.

Table III: Reasons for Use of Internet

Reasons	Mean	Rank order
For communication via e-mail.	4.04	1
For reading e-books/e-journals.	3.61	2.5
For writing seminar papers.	3.61	2.5
For writing class/group assignment.	3.57	4
For reading newspaper/magazines online.	3.53	5
For chatting with other web users.	3.52	6
For downloading of files.	3.51	7
For seeking foreign admission.	3.47	8
To find scholarships/grants.	3.40	9
For entertainment/relaxation.	3.38	10

5 = Most Important, 4 = Important, 3 = Less Important, 2 = Not Important, 1 = Undecided

Table III reveals the students' reasons for using internet. Communication via e-mail ranked first with a mean of 4.04. The high rate of e-mail usage supports similar studies by Ojedokun (2001) and Olatunji-Bello, Ibegwam and Odugbemi (2002). Both reading of e-books/e-journals and writing of seminar papers rank second. Writing of class/group assignment ranked fourth with a mean of 3.57 while reading of newspaper and magazines online ranked fifth with a mean of 3.53. This finding shows that undergraduate students in University of Lagos understand the fact that scholarship operates in a network environment which requires ability to communicate, contact and cooperate with others in the academic community. Omekwu (2001) affirmed that "Internet-based facilities and services have opened up wide ranging possibilities for professional communication, cooperation and contact".

Table IV: Impact of Internet on Career and Related Activities

Career/related activities	Mean	Rank order
Writing of term papers.	4.21	1
Writing of projects.	3.88	2
Reading.	3.85	3
Writing of class/group assignments.	3.80	4
Communication.	3.73	5
Writing of seminar papers.	3.70	6
Seeking of foreign admission.	3.68	7
Entertainment/sports.	3.51	8
Finding of scholarships/grants.	3.45	9
Examination preparation.	3.32	10

5 = Very High, 4 = High, 3 = Low, 2 = Very Low, 1 = None

Table IV indicates that the use of internet has very high impact on the writing of both term papers and project with mean rating of 4.21 and 3.88 respectively. The table also shows that the internet has great effect on both reading and writing of class/group assignments. These were rated third and fourth with mean rating of 3.85 and 3.80 respectively. These findings reveals that internet use has very high impact on academic career and other related activities of the respondents. This implies that the undergraduate students of University of Lagos, Akoka are responding positively to the emerging paradigm of learning and research. Thus the MTN Universities Connect Project and Virtual Learning Project of the University are worthwhile initiatives which will soon launch the students to the platform of academic excellence far better than that of their predecessors. In the long run, the availability, accessibility and utilization of these electronic resources will definitely make graduates of the University of Lagos a force to contend with in the highly competitive international labour market.

Table V: Preferred Search Engines

Search Engine	Mean	Rank order
Yahoo	3.51	1
Google	3.33	2.5
Altavista	3.33	2.5
Dogpile	2.19	4
Webcrawler	2.17	5
Excite	2.13	6
Hotbot	2.07	7
Magellan	2.05	8
Infoseek	2.04	9
Argos	1.98	10
Lycos	1.96	11

4 = Most preferred, 3 = Preferred, 2 = Less preferred, 1 = Not preferred.

As shown on Table V, the most preferred search engine was “Yahoo” which was ranked first with a mean of 3.51. “Google” and “Altavista” together to ranked second with a mean of 3.33. Students preference for “Yahoo” may be due to the e-mail and text message facilities it provides which facilitate communication with friends and relatives.

Table VI: Constraints to Internet Usage.

Constraints	N	%
Lack of time.	433	72.7
High cost of browsing.	313	52.5
Irregular power supply.	295	49.5
Inaccessibility of internet facilities.	223	37.4
Inadequate knowledge of search strategies.	199	33.4
Inadequate knowledge of search engines.	185	31.0
Lack of computer/internet knowledge.	135	22.7
Inability to get reliable and accurate information.	127	21.3
Inability to access websites.	116	19.5

As indicated on Table VI, the greatest constraints to internet usage is lack of time, high cost of browsing and irregular power supply. More than 72% of the respondents indicated that lack of time was a barrier to internet use and more than 52% of the respondents considered high cost of browsing as a constraint, while more than 49% indicated that irregular power supply was an obstacle to internet use. Lack of time as a major constraint to internet use is affirmed by the findings of Ojedokun and Owolabi (2003). The reason, perhaps, is due to the fact that most of the cyber cafes the students use have low bandwidth and this causes slow internet response and

failure of server. As a result, the students have to spend long time before they can get the desired information. The issue of high cost of browsing or cost of access as a major constraint is supported by the findings of Hinson, Adika and Buatsi (2005). At the University of Lagos, Nigeria, most of the cyber cafes are provided and managed by profit-oriented entrepreneurs. High cost of browsing may also be a result of high cost of bandwidth and telephone lines. As such, most operators charge NGN100.00 (\$0.74) and above per hour.

The findings in this study display a similar pattern with that found in the extensive study carried out by Teferra (2004). In his study, Teferra reported that the major constraints to the full utilization of the internet by universities in Africa include poor telephone lines, slow speed of connectivity (low bandwidth), frequent power outages, high cost of telecommunications, lack of technical support, and limited accessibility etc.

Implication of the Study

The study revealed that even though majority of the students use the Internet regularly for their academic work, the level of Internet usage is low among undergraduates from both the Faculty of Education and the Faculty of Law when compared to undergraduates from other faculties. This implied that most Education students and Law students of the University of Lagos carry out their research and learning activities without access to Internet-based resources and as a result may not be able to compete with their colleagues within and outside the country in both academic knowledge and expertise.

Secondly, the study pointed out that though majority of the students possess the basic skill and ability to browse the internet more than half of them could not design search strategies. The implication is that most of them spend time and resources and still find it extremely difficult to get relevant information.

Conclusion

It is quite clear, from the study, that the impact of the internet on the academic activities of students is very high. For the students to fully reap the benefits of e-learning, e-library and other web-based resources, internet and computer literacy is imperative. Even though the students make use of internet resources at the few functional cafes located on campus, it is likely that the number of internet users will increase if constraints such as high cost of browsing, irregular power supply, inaccessibility of internet facilities, among others, are addressed.

Recommendations

In view of the pervading impact of the internet and the evolving information environment (e-learning and e-library) in the University of Lagos, and the findings discussed in the preceding sections, a number of inevitable challenges must be addressed for students of the university to be active participants rather than speculative spectators in the dynamic and challenging information world. The University of Lagos administrators must address the following:

1. Establishment of Faculty Computer Laboratories

Each faculty in the university should have a computer laboratory equipped with computers and internet facilities. This will reduce the time students spend in taking turns at the few functional cyber cafes on campus and also enable the students to have easy access to internet facilities, perhaps, at a subsidized rate. The computer laboratories should be managed by staff of the Centre for Information Technology and Systems (CITS).

2. Improvement in Electricity Supply on Campus.

The university, apart from connecting to the national grid, has a central generating plant and a stand-by generator, yet power outage has become a regular occurrence on campus. The university authority may therefore need to consider acquiring solar electric power backup system to ensure uninterrupted power supply.

3. Training on Internet Literacy.

The Centre for Information Technology and Systems (CITS) should organize regular training for students to enable them acquire effective internet search skills which could lead to the discovery of valuable learning resources on the web and also minimization of the length of the time spent on browsing due to inadequate search skills. Adequate and formal training on internet use will also help to prepare the students to take full advantage of the e-learning and e-library initiatives of the university.

4. Re-design the Curriculum

Internet and computer literacy should be integrated into the compulsory general studies programme of the university. Each student should be assessed on the areas covered to ensure the acquisition of relevant skills that will make him/her functional in the evolving information environment.

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