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**Internet Connectivity and Accessibility in University Libraries: A Study of Access, Use and Problems among Faculty of Natural Sciences Students, University of Jos, Nigeria**

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**Abstract**

**Objective** – This study has the objective of establishing whether the undergraduate students of the Faculty of Natural Sciences, University of Jos, have access to and use Internet facilities in the University library.

**Methods** – A survey research design was adopted for this study and questionnaires were used in gathering data. Statistical methods used in the analysis include percentages, frequencies, and Chi-Square test for measuring the association of library visit and use of the Internet.

**Results** – The analysis of the data and findings indicated that there is Internet connectivity in the library. The findings also revealed that few students (15.5%) use the computer and the Internet on a daily basis. The problems of slow Internet connection at peak periods and unsteady power supply were clearly identified. Furthermore, the analysis revealed that there is no association

between the students' library visits and their use of the Internet for most academic purposes, except for downloading articles.

**Conclusion** – The presence of Internet connectivity in the library, does not translate to meaningful academic behaviour among the students. Therefore, sensitising and training of the students on Internet usage were recommended for better academic performance and life-long learning.

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## **Introduction**

University students pay frequent visits to their libraries to search and retrieve relevant and current information in electronic/online format for the purpose of effective learning and research. University library patrons include undergraduate and postgraduate students, researchers, information professionals, staff, and other users from outside the university who intend to use the university library. The undergraduate students are expected to read further after class to collect and retrieve information for assignments, seminars, term papers, and projects and this information could be retrieved from the Internet with adequate access and connectivity. The undergraduates of a university, particularly the final year students, need information to satisfy their needs, and to enhance their academic pursuit during their course of study in the university. In addition, they need information to write their projects for the requirements of the award of their degrees.

The mandate of the university library is therefore to provide adequate and relevant information resources both in print and online for users. The print information resources include journals, textbooks, and magazines; the Internet and online resources are to support class work, assignments, research/project work, term papers and, seminar presentations by providing relevant information and services for effective and efficient achievement of academic and social purposes. Internet connectivity and accessibility to information resources on the Internet are an integral part of the research process for students. After discussing with their professors, students look up the references in class readings, go to the

Internet for resources, and begin the research process. University libraries and students in many countries use Internet resources and search engines regularly as well as e-mail as a normal form of communication (Kindilchie & Samarraie, 2008).

One of the major problems confronting university education in Nigeria has been inadequate current and relevant information materials for teaching and research (Okonofua, 2008). According to (Adika, 2003) efforts had been made to ameliorate the challenges through interlibrary loan and document delivery, yet the situation persisted. It was therefore, in the light of this that the use of the Internet was introduced into the educational system to bridge the information gap (Okonofua, 2008). The University of Jos and its library have also subscribed to the Internet and its facilities (University of Jos Library, (2015). The library has provided a Computer Laboratory with the sole aim of providing access to information on the Internet. The information that is retrieved from the Internet could promote the students' academic purposes. In addition, other academic databases could also be accessed in the library. Help is provided in the use of the databases subscribed to. Users of this facility are required to collect the respective username and password of the subscription databases from the respective Subject Librarians. In addition, the Systems Unit organizes regular training programmes for students and staff on how to access and use the electronic library resources via the Internet and also the local server. The Laboratory is divided into two sections: Desktop Computer Lab and Laptop Computer Lab for library users. The Laboratory also offers printing and scanning

services at affordable prices for the undergraduate students. The final year students were considered for this study because they are expected to do more on writing term papers, in addition to writing their projects in partial fulfilment for the award of their degrees. They therefore have a need for Internet resources.

The Faculty of Natural Sciences started during the 1974/75 session, as The Faculty of Science in the Jos Campus of the University of Ibadan. It moved to its present site at the Bauchi Road Campus during the 1975/76 session. The Faculty of Natural Sciences, University of Jos consists of ten academic departments, namely: Botany, Chemistry, Computer Science, Geology and Mining, Industrial Chemistry, Mathematics, Microbiology, Physics, Statistics, and Zoology. These departments award first degrees, higher degrees, and diplomas.

It is globally accepted today that the Internet has impacted and revolutionised lives, particularly in academic circles. Students use the Internet for different purposes, including their scholarly activities. Although most undergraduate students pride themselves on being computer literate, the fact remains that it is only during examination periods that one observes high numbers of students in the library with few using either their personal computers or the ones provided by the library. This shows that most of the students are either unaware of the Internet facility in the library or they are ignorant of its full benefits for their study and research. It is against this backdrop that the researchers wish to establish Internet connectivity, access and use among students of the Faculty of Natural Sciences of University of Jos, in addition to solving the problems students encounter in using the Internet.

### **Literature Review**

The Internet, which is also referred to as the 'net', is a collection of computers and computer Networks located all over the world, all of which share information established upon Internet

protocols. Therefore, it is an information highway using different computer networks. Adegoke (2009) affirms that, "Indeed, the Internet is also a virtual library which is seen as virtual space containing a vast amount of information and documents including books, pictures, video, graphs and musical sounds that can be consulted." Thus, the Internet provides a way of accessing information of all types. Reddick and King (2001) agree that 'Clearly, there is a lot of information out there – too much to catalogue. In fact, nobody knows exactly what is available online and where it is. The growth represents both an opportunity and a hazard.... The opportunity is that, sitting at your desk, you can access information that you may not have known been existing [sic]' (p.74). The risk is that you waste a lot of time looking at information that is not relevant to the projects on which you are working.

The Internet is fast changing the methods for accessing and using information among various groups of students. Accessing information in the library through the use of catalogue cards is a daunting task. In some cases the information may be available but, due to certain constraints, inaccessible. The Internet has introduced new concepts of literature searching and is recasting the roles played by students in the educational process (Omotayo, 2010). Still, while many undergraduates use the Internet, there are many who may not. Supporting this view, Aguolu and Aguolu (2002) averred that information in a library may be available and yet not accessible. This could be due to the student's ignorance of the library's Internet connectivity and proper access channels.

Students' ignorance and lack of proper access channels could be due to failure of the university's management to provide adequate education and facilities. There are many surveys on access to the Internet, and nearly all found out that Internet access is a huge problem among many students. Such access problems include below average computer literacy of the students, accessibility to the Internet, slow connectivity

and downloading, and severe network failure (Udende & Azeez 2010; Fasae & Aladeniyi 2012; Otunla 2013). Indeed, access to current literature is still a problem in Africa, as university libraries continue to contend with problems of poor funding, and student unrest.

The use of the Internet can be of prime benefit to students. It is very useful by allowing students to access different types of information and also to process this information and communicate it to their peers across the globe (Eytayo, 2008); Eytayo further asserts that the Internet has become the most popular way of locating and retrieving information. The Internet has become a very useful tool in the library for simplifying information location, retrieval, use, and communication. Abubakar and Bada (2005) observe that it provides facilities and capabilities to browse through a list of subject headings to get an idea of what is available in other places through the network. Internet connectivity can facilitate the work of reference librarians to answer queries on areas in which they lack prior knowledge, and such information is often very current and up to date.

On the use of the Internet in Nigerian universities among students, Jagboro (2003) established that two-thirds of the respondents indicated that they used it for e-mail. Just over half used it to get research materials while 39.73% used it to retrieve course materials. She attributed the low level of Internet use to low level of connectivity and high cost of cybercafé facilities. In addition, Hanauer, Dibble, Fortin, and Col (2004) surveyed a diverse community college to assess the use of the Internet by the students of health-related information. The survey showed that 83% of Internet users had access to the Internet at their home and 51% of the respondents accessed the Internet at the college or library.

The Internet is very useful to university students in Nigeria because it enables them to have access to timely, accurate, and relevant information that cannot be obtained from library shelves. Bankole and Oludayo (2012) note that the majority (86%)

of their respondents (undergraduates) from Olabisi Onabanjo University, Ago-Iwoye, Nigeria use the Internet to search for information. Mishra (2009) studied the use of Internet at the University of Maiduguri, Nigeria. The findings show that the Internet was very important for 60.8% of the respondents, with 74.6% using the Internet for research. Google was mentioned by 71.5% of participants as their preferred search engine and Mishra concludes that necessary facilities should be put in place for faculty and students to make optimal use of information resources available on the Internet. Emphasizing the advantages of Internet resources, Dadzie (2005) writes that it is an invaluable research tool that complements the print-based resources in a traditional library setting. The advantages, according to her, include: access to information that might be restricted to the user due to geographical location or finances; access to more current information; and provision of extensive links to additional resources related with contents.

The visit to and use of any university library is dependent on so many variables; these include the resources provided or made available in the library, the environmental conditions, and even the student's self-efficacy (Waldman, 2003). If the resources are not sufficient for the needs of the users of the library, it is not likely that the library will be visited. By and large the accepted functions of a university, according to Ifidon (1999), are to cater for the teaching of the students and for the research interests of the faculties. Therefore, the purpose of any university library is to provide such resources, in the form of recorded knowledge, as are necessary for both teaching and research in the university. If such are provided, it is most likely that students would visit and use the library. The visit to the library by students could stimulate them to use the available Internet resources. Soria, Fransen, and Nackerud (2013) measured and published the impact of library visit and use on students' academic success in the University of Minnesota, USA. The study found that there are statistically relevant data showing first-year undergraduate

students who visit and use the library's resources (Internet) have a higher grade point average for their first semester and higher retention rate from fall to spring than those who hardly visit the library. This indicates that there is a relationship between library visit and use of its resources such as the Internet. This invariably promotes the student's academic performance.

A reduction in the usage of conventional library services at the university level suggests that students are looking somewhere else for information resources. The Association of Research Libraries (ARL) in 2005 reported that between 1991 and 2005, reference requests dropped by an average of 4.5% per year, and book checkouts fell by 1.2% per year, though this varied depending on the type of academic library (Applegate, 2008). The ARL also documented a decline in reference requests and borrowing between libraries from 2009-2011 (ARL, 2011). Request and borrowing of library materials is a function of the visit of the students to the library. McDonough and Jimenez (2007, P.171) reported from the University of Illinois and observed that in terms of undergraduate usage of the library, "They are losing clientele; students may come in the library to study, to socialize, to strike the newly installed cafe designed to lure them in, but they are not using library materials, or library services, at anything like the rate they did even ten years ago." This also suggests that the students visit to the library, may influence their use of the facilities (Internet). However, such is dependent on the urgent tasks at hand for the students. Quadri's (2013) findings from two private Nigerian universities revealed that there was significant relationship between level of study and utilization of online library resources ( $r = .933$ ;  $p = 0.05$ ) but that the Internet was an important source of information for the undergraduate students.

Diem (2013) posited that '...the use of libraries is influenced by the existence of important features' ( $p = 0.005$ ) and that these features include the provision of ICT facilities. This is the case in Indonesia. At Penn State University in the U.S.,

Internet access is available at Students' Computing Labs, residence halls, offices, most classrooms, and off-campus locations. In order to use the full range of Internet services students need the Penn State Access Account with other access requirements varying depending on location (Penn State University, 2012).

Internet access and its use had its own share of problems. According to Olalude (2007) one of these is the initial capital outlay to install Internet facilities. The reason for this is because most African countries are experiencing huge debts and foreign exchange problems. Therefore, to purchase such facilities becomes a huge problem. The consequence of this is the complete lack of these facilities in many African university libraries. In addition, Emejo (2009) reported that about 70 percent of Nigeria's Internet capacity has been disrupted following a reported damage to one of the landing cables of SAT3 submarine system. He expressed the opinion that this was the cause of the network outage being experienced by large number of Internet subscribers in the country. In a study of Internet access by students of Faculty of Sciences in two Nigerian universities, Fasae & Aladeniyi (2012) reported that most of their respondents, (97%) had experienced the problems of slow Internet speed followed by lack of skills for surfing the Internet. Furthermore, Israel and Edesiri (2014) reported that personal observation has shown that many undergraduate students lacked the skills needed to make effective use of the Internet to meet their educational needs.

### **Aims**

The primary objective of the study is to investigate the connectivity and accessibility of Internet services in the University of Jos library among final year students of the Faculty of Natural Sciences.

The specific objectives are:

1. To find out the frequency of use of computer Internet in the library;

2. To know if the students are aware of Internet connectivity in the library;
3. To investigate if they access the Internet in the library;
4. To assess the purposes for which they use the Internet in the library;
5. To determine the problems they have encountered with Internet access in the library.

### *Hypothesis*

There is no significant relationship between library visit and use of the Internet for all purposes.

### **Methods**

A survey design was adopted for this study, and questionnaires were used to gather data. The questionnaires were distributed with the assistance of lecturers to encourage a high return rate. The population for this study was nine hundred and sixty nine (969) final year students of the faculty of Natural sciences of the University of Jos (Academic Planning Unit of University of Jos, 2012). The faculty has ten departments with the number of students in the final year for the 2011/12 session as follows: Botany 71, Chemistry 62, Industrial chemistry 53, Geology and mining 143, Mathematics 90, Computer science 55, Statistics 88, Microbiology 161, Physics 131 and Zoology 115.

The sample size was determined by using Krejcie and Morgan's (1970) table for sample size.

Table 1  
Demographics of the Respondents

| <b>Departments</b>   | <b>Number</b> | <b>Percent</b> |
|----------------------|---------------|----------------|
| Microbiology         | 34            | 16.4           |
| Mathematics          | 45            | 21.7           |
| Statistics           | 23            | 11.1           |
| Geology              | 3             | 1.4            |
| Chemistry            | 35            | 16.9           |
| Physics              | 22            | 10.6           |
| Zoology              | 19            | 9.2            |
| Computer science     | 2             | 1.0            |
| Plant Science        | 19            | 9.2            |
| Industrial Chemistry | 5             | 2.5            |
| <b>Total</b>         | <b>207</b>    | <b>100</b>     |
| <b>Gender</b>        |               |                |
| Male                 | 124           | 59.9           |
| Female               | 77            | 37.2           |
| Missing              | 6             | 2.9            |
| <b>Total</b>         | <b>207</b>    | <b>100</b>     |
| <b>Age</b>           |               |                |
| 15-19                | 10            | 4.8            |
| 20-24                | 95            | 45.9           |
| 25-29                | 86            | 41.5           |
| 30-34                | 10            | 4.8            |
| Missing              | 6             | 2.9            |
| <b>Total</b>         | <b>207</b>    | <b>100</b>     |

According to Krejcie and Morgan (1970) a population of 1000 should have a sample of 278. Therefore, this sample (278) was considered appropriate for the population of 969. In addition, proportionate sampling was done to determine the sample for each department in the faculty, thus: Botany 20, Chemistry 18, Industrial chemistry 15, Geology and mining 41, Mathematics 26, Computer science 16, Statistics 25, Microbiology 46, Physics 38, and Zoology 33. A response rate of 207 constituting 74% was adequate because Yamane (1967) stated that a response rate of 60% is adequate for making generalisation for any given population. Statistics used include percentages, frequencies and Chi – Square statistics to test the association of the dependency of Internet usage on the visits the students made to the library. Furthermore, it was used because the variables in question were categorical.

## Results and Discussion

Table 1 shows the demographics of the respondents based on departments, gender, and age.

Table 1 indicates that the Mathematics Department had most of the students in the study (21.7%), and computer Science had the lowest (1%). Most of the students in the study were males (59.9%). This indicates a ratio of about 60% to 40% intake for males and female students. Most of the students' ages ranged from 25 to 29 years, with an average of 27 years, and this constitutes 41.5%. The age range is normal because it is within the bracket years Nigerian students are engaged in the national service. This is the accepted age at which students graduate from the universities and are engaged in free National service for their fatherland.

Table 2 indicates the frequency of use of the computer and Internet by the students in the library.

Table 2 shows that only 15.5% of the students were using the computer and Internet in the

Table 2  
Use of Computer and the Internet in the Library

|    | Item:   | Number     | Percent    |
|----|---|------------|------------|
| 1. | I use computer and Internet in Unijos Library |            |            |
|    | Daily   | 32         | 15.5       |
|    | Once a week                                   | 48         | 23.2       |
|    | Once a month                                  | 45         | 21.7       |
|    | Less than once a month                        | 70         | 33.8       |
|    | Missing                                       | 12         | 5.8        |
|    | <b>Total</b>                                  | <b>207</b> | <b>100</b> |
| 2. | I visit and use the library                   |            |            |
|    | Daily   | 44         | 21.3       |
|    | Once a week                                   | 75         | 36.2       |
|    | Once a month                                  | 29         | 14.0       |
|    | Less than once a month                        | 53         | 25.6       |
|    | Never   | 1          | 0.5        |
|    | Missing                                       | 5          | 2.4        |
|    | <b>Total</b>                                  | <b>207</b> | <b>100</b> |

library daily, while 33.8% of them used it less than once month. Perhaps these few 15.5% of the students that use the computer and the Internet in the library are the ones that own personal laptops and/ or the ones that use the library's computers which are connected to the Internet. This result is contrary to the study by Awoleye, Siyanbola, and Oladipupo (2008) which revealed that about 92% of undergraduate students have embraced the Internet and are using it consistently. What is interesting, however, is that the library provides Internet and computer services in all the branch libraries that are permitted to be used by all students for an interval or period of one hour due to limited computer/access points. Most of the students visit and use the library once a week (36.2%) and only (14%) visit and use the library once a month. This percentage is close to those that use the library's Internet facility. It thus implies that only few of the final year students visit and also use the library's Internet. The implication of this is that the library as an information provision

centre will not achieve its objective and as a result will be a colossal and wasteful investment.

Table 3  
Internet Connectivity in the Library

|    | Items  | Number | Percent |
|----|--|--------|---------|
| 1. | There are computers with Internet connectivity in the library                            |        |         |
|    | Yes  | 163    | 78.7    |
|    | No   | 39     | 18.8    |
|    | Missing  | 5      | 2.4     |
|    | Total  | 207    | 100     |
| 2. | I always seek permission to use the computer Internet facilities                         |        |         |
|    | Yes  | 120    | 58.0    |
|    | No   | 81     | 39.1    |
|    | Missing  | 6      | 2.9     |
|    | Total  | 207    | 100     |
| 3. | I own a wireless laptop computer and connect with the library's Internet facility to use |        |         |
|    | Yes  | 94     | 45.4    |
|    | No   | 108    | 52.2    |
|    | Missing  | 5      | 2.4     |
|    | Total  | 207    | 100     |
| 4. | I desire to acquire a laptop computer in the near future                                 |        |         |
|    | Yes  | 145    | 70.0    |
|    | No   | 43     | 20.8    |
|    | Missing  | 19     | 9.2     |
|    | Total  | 207    | 100     |

Table 3 presents 78.7% of the students indicating that there are computers with Internet connectivity in the library and 58% take permission before they use it. Only 45.4% used their own wireless laptops to connect with the library's Internet. The majority of the respondents affirmed that there is Internet connectivity in the library. This revelation is not in consonance with the submission of Baro and Asaba (2010) who averred from their study of Internet connectivity in university libraries in Nigeria that most university libraries in Nigeria lacked Internet connectivity, especially the private university libraries, and that is why they failed the National University Commission's (NUC) accreditation most of the time. Up to 58% of the students will always seek permission before they use the Internet connectivity, it could be those that own their personal laptops. The reason why students sought permission is because the library's rules and regulations state that: before using any system, permission needs to be given by the system managers to avoid system break down and other misuse by students such as visiting pornographic sites. The majority of the students (78.7%) testified to the availability of Internet connectivity in the library. However, only few (15.5%) used it daily for their normal academic activities. This shows that the students need to be re-orientated and re-sensitised on the need to use these facilities for academic work. Part of such orientation is normally given during the use-of-library class at the point of entry into the university and subsequently in their research classes.

Table 4 below presents the platforms through which students accessed the Internet.

The faculty students accessed the Internet mostly through their GSM phone (72%), followed by private cybercafés in town (68.6%) and the library (63.3%) (Table 4). Access to the Internet is least through their departments (20.5 %). While the majority of the students confirmed the presence of Internet connectivity in the library, the majority accessed the Internet via their mobile phones. This could



Table 4  
Access to the Internet

|    | Items   | Number     | Percent     |
|----|---|------------|-------------|
| 1. | I access the Internet in the library via its server |            |             |
|    | Yes   | 131        | 63.8        |
|    | No  | 70         | 33.3        |
|    | Missing   | 6          | 2.9         |
|    | <b>Total</b>  | <b>207</b> | <b>100</b>  |
| 2. | I access the Internet in my faculty                 |            |             |
|    | Yes   | 61         | 29.5        |
|    | No  | 141        | 68.1        |
|    | Missing   | 5          | 2.4         |
|    | <b>Total</b>  | <b>207</b> | <b>100</b>  |
| 3. | I access the Internet in my department              |            |             |
|    | Yes   | 43         | 20.8        |
|    | No  | 154        | 74.4        |
|    | Missing   | 10         | 4.8         |
|    | <b>Total</b>  | <b>207</b> | <b>100</b>  |
| 4. | Through subscription to MIS wireless access         |            |             |
|    | Yes   | 83         | 40.1        |
|    | No  | 117        | 56.5        |
|    | Missing   | 7          | 3.4         |
|    | <b>Total</b>  | <b>207</b> | <b>100</b>  |
| 5. | Through GSM phone services                          |            |             |
|    | Yes   | <b>149</b> | <b>72.0</b> |
|    | No  | <b>52</b>  | <b>25.1</b> |
|    | Missing   | <b>6</b>   | <b>2.9</b>  |
|    | <b>Total</b>  | <b>207</b> | <b>100</b>  |
| 6. | Through private cybercafés on campus                |            |             |
|    | Yes   | 100        | 48.3        |
|    | No  | 96         | 46.4        |
|    | Missing   | 11         | 5.3         |
|    | <b>Total</b>  | <b>207</b> | <b>100</b>  |
| 7. | Through private cybercafés in town                  |            |             |
|    | Yes   | 142        | 68.6        |
|    | No  | 55         | 26.6        |
|    | Missing   | 10         | 4.8         |
|    | <b>Total</b>  | <b>207</b> | <b>100</b>  |

Table 5  
Frequency and Use of the Internet in the Library

|    | <b>Use for:</b>                              | <b>Number</b> | <b>Percent</b> |
|----|--|---------------|----------------|
| 1. | <b>E-mail</b>                                |               |                |
|    | Never  | 76            | 36.7           |
|    | Occasionally                                 | 95            | 45.9           |
|    | Once a week                                  | 20            | 9.7            |
|    | Daily  | 10            | 4.8            |
|    | Missing                                      | 6             | 2.9            |
|    | <b>Total</b>                                 | <b>207</b>    | <b>100</b>     |
| 2. | Receiving E-newsletters                      |               |                |
|    | Never  | 137           | 66.2           |
|    | Occasionally                                 | 48            | 23.2           |
|    | Once a week                                  | 14            | 6.8            |
|    | Daily  | 6             | 2.9            |
|    | Missing                                      | 2             | 2.1            |
|    | <b>Total</b>                                 | <b>207</b>    | <b>100</b>     |
| 3. | Downloading articles from<br>online journals |               |                |
|    | Never  | 106           | 51.2           |
|    | Occasionally                                 | 77            | 37.2           |
|    | Once a week                                  | 16            | 7.7            |
|    | Daily  | 7             | 3.4            |
|    | Missing                                      | 1             | 0.5            |
|    | <b>Total</b>                                 | <b>207</b>    | <b>100</b>     |
| 4. | Internet phone calls                         |               |                |
|    | Never  | 134           | 64.7           |
|    | Occasionally                                 | 48            | 23.2           |
|    | Once a week                                  | 6             | 2.9            |
|    | Daily  | 15            | 7.2            |
|    | Missing                                      | 4             | 1.9            |
|    | <b>Total</b>                                 | <b>207</b>    | <b>100</b>     |
| 5. | Chatting                                     |               |                |
|    | Never  | 120           | 58.0           |
|    | Occasionally                                 | 52            | 25.1           |
|    | Once a week                                  | 13            | 6.3            |
|    | Daily  | 16            | 7.7            |
|    | Missing                                      | 6             | 2.9            |
|    | <b>Total</b>                                 | <b>207</b>    | <b>100</b>     |
| 6. | Listening to live radio/TV<br>broadcasts     |               |                |
|    | Never  | 139           | 67.1           |
|    | Occasionally                                 | 41            | 19.8           |
|    | Once a week                                  | 8             | 3.9            |
|    | Daily  | 15            | 7.2            |
|    | Missing                                      | 4             | 1.9            |

|    |                           |            |            |
|----|---------------------------|------------|------------|
|    | <b>Total</b>              | <b>207</b> | <b>100</b> |
| 7. | Finding romantic partners |            |            |
|    | Never                     | 162        | 78.3       |
|    | Occasionally              | 25         | 12.1       |
|    | Once a week               | 7          | 3.4        |
|    | Daily                     | 10         | 4.8        |
|    | Missing                   | 3          | 1.4        |
|    | <b>Total</b>              | <b>207</b> | <b>100</b> |
| 8. | Reading E-newspapers      |            |            |
|    | Never                     | 135        | 65.2       |
|    | Occasionally              | 43         | 20.8       |
|    | Once a week               | 13         | 6.3        |
|    | Daily                     | 12         | 5.8        |
|    | Missing                   | 4          | 1.9        |
|    | <b>Total</b>              | <b>207</b> | <b>100</b> |
| 9. | Watching videos and films |            |            |
|    | Never                     | 142        | 68.6       |
|    | Occasionally              | 42         | 20.3       |
|    | Once a week               | 4          | 1.9        |
|    | Daily                     | 12         | 5.8        |
|    | Missing                   | 7          | 3.4        |
|    | <b>Total</b>              | <b>207</b> | <b>100</b> |

be the reason for the low library visits and consequent low use of the library's Internet connectivity. Apprehension could be said to be another factor to the low access to the Internet by the students in the library. One clear reason that could be speculated is that the students don't want to waste their time on the queue to take their turns, and a good number of them prefer the cybercafé in the town where they waste little or no time at all. This result is in tune with that of Ani (2010) who reported on access to the Internet in three Nigerian universities; that there is inequitable access to the Internet, as students mostly rely on private/commercial Internet cybercafés both on and off campuses for their access and use. Access to the Internet in the university libraries, departments/faculties, and university computer/ICT centres is very poor. This pattern of accessing the Internet outside the campus could have time implication on the part of the students; the time taken to visit the cafés in

town would have been used for positive study, and also may have conserve time wasted occasionally on missing lectures.

Table 5 shows the frequency of the use of the Internet by the students.

Table 5, indicates that the frequency of use of the Internet is mostly occasional for all purposes, especially for the use of e-mail (45.9%). Over seven percent (7.7%) frequently use the Internet for chatting on a daily basis. This finding corresponds with Lubans (1999) who found that a majority of respondents used the Internet from "several times a week" to "often." However, it is not in agreement with the findings of Ani's (2010) study on Internet access and use by undergraduate students of Nigerian universities that the Internet is extensively used by undergraduate students. The most prominent

Table 6  
Problems of Internet Access

|    | <b>Problem</b>                           | <b>Number</b> | <b>Percent</b> |
|----|--|---------------|----------------|
| 1. | Unsteady power supply                    |               |                |
|    | Yes                                      | 116           | 56.0           |
|    | No                                       | 77            | 37.2           |
|    | Missing                                  | 14            | 6.8            |
|    | <b>Total</b>                             | <b>207</b>    | <b>100</b>     |
| 2. | Slowness of the Internet at peak periods |               |                |
|    | Yes                                      | 169           | 81.6           |
|    | No                                       | 37            | 17.9           |
|    | Missing                                  | 1             | 0.5            |
|    | <b>Total</b>                             | <b>207</b>    | <b>100</b>     |
| 3. | Insufficient bandwidth for effectiveness |               |                |
|    | Yes                                      | 109           | 52.7           |
|    | No                                       | 95            | 45.9           |
|    | Missing                                  | 3             | 1.4            |
|    | <b>Total</b>                             | <b>207</b>    | <b>100</b>     |
| 4. | Space constraints in dept/faculty        |               |                |
|    | Yes                                      | 133           | 64.3           |
|    | No                                       | 74            | 35.7           |
|    | Missing                                  | -             | -              |
|    | <b>Total</b>                             | <b>207</b>    | <b>100</b>     |
| 5. | Space constraints at cybercafés          |               |                |
|    | Yes                                      | 99            | 47.8           |
|    | No                                       | 108           | 52.2           |
|    | Missing                                  | -             | -              |
|    | <b>Total</b>                             | <b>207</b>    | <b>100</b>     |
| 6. | Insufficient work stations               |               |                |
|    | Yes                                      | 103           | 49.8           |
|    | No                                       | 103           | 49.8           |
|    | Missing                                  | 1             | 0.5            |
|    | <b>Total</b>                             | <b>207</b>    | <b>100</b>     |
| 7. | Poor knowledge of Internet surfing       |               |                |
|    | Yes                                      | 75            | 36.2           |
|    | No                                       | 132           | 63.8           |
|    | Missing                                  | -             | -              |
|    | <b>Total</b>                             | <b>207</b>    | <b>100</b>     |

|     |  |            |            |
|-----|--|------------|------------|
| 8.  | Poor knowledge of computer skills                        |            |            |
|     | Yes  | 73         | 35.2       |
|     | No   | 132        | 63.8       |
|     | Missing  | 2          | 1.0        |
|     | <b>Total</b>   | <b>207</b> | <b>100</b> |
| 9.  | Unreadiness of the university library's computer labs    |            |            |
|     | Yes  | 112        | 54.1       |
|     | No   | 89         | 43.0       |
|     | Missing  | 6          | 2.9        |
|     | <b>Total</b>   | <b>207</b> | <b>100</b> |
| 10. | Insufficient workers to attend to customers at the cafés |            |            |
|     | Yes  | 89         | 43.0       |
|     | No   | 115        | 55.6       |
|     | Missing  | 3          | 1.4        |
|     | <b>Total</b>   | <b>207</b> | <b>100</b> |
| 11. | Virus contamination of saving devices                    |            |            |
|     | Yes  | 100        | 48.3       |
|     | No   | 99         | 47.8       |
|     | Missing  | 8          | 3.9        |
|     | <b>Total</b>   | <b>207</b> | <b>100</b> |

uses of the Internet among the students as reported by Ani (2010) include the use for e-mail and downloading articles from online journals; however, such uses of the Internet are of low frequencies from the current study (4.8% and 3.4% respectively on a daily basis). This scenario might have negative effects on students' overall academic endeavour, which could restrict sharing of ideas with their peers and also their lecturers.

Table 6 indicates the problems of Internet access encountered by the students.

Table 6 presents slowness of the Internet at peak periods as the major problem of Internet access (81.6%) followed by unsteady power supply (56.0%). However, just over one third of participants (35.2 %) attested that poor knowledge of computer skills was their problem. Although the frequency of use of the

Internet is low for all purposes, such problems indicated by the final year students could affect

the degree of use of the Internet. The slowness of the Internet at peak period is bound to the issue of bandwidth. This situation is in agreement with the report of Womboh and Abba (2008) who emphasized that Nigeria, which had an information technology mission statement of its intention to become an IT capable country in Africa and a key player in the information society by the year 2005, had not achieved this as at 2008. They noted further that the number and quality of computer literate librarians to train the students were not adequate; this perhaps accounted for the 35.2% of the students in the current study who noted poor computer knowledge as their problem. Bankole and Oludayo's (2012) findings also show that slowness of the Internet at peak periods is one of the major constraints facing Internet usage

among Olabisi Onabanjo undergraduate students. This trends will prohibit and demoralise the students in their scholarly activities with consequent low performance academically.

From Table 7, there is no significant relationship between library visits of the students and use of the Internet for most of the purposes (six), except for two activities. These are downloading articles from online journals and finding romantic partners. Therefore, the null hypothesis is accepted for the six purposes. This relationship shows that these six purposes for using the Internet were not influenced by the students' visits to the library. However, there does exist a significant relationship between visiting the library and downloading articles from online journals or finding romantic partners (P. Value =0.008 and 0.015 respectively). This invariable suggests that as the students are mindful of downloading relevant online journals pertinent to their studies; they are also mindful of their social life style. This is expected of final year undergraduate students - they are of course adults.

## Conclusion

It is the conclusion of this research that Internet connectivity was provided in the University of Jos for Faculty of Natural Sciences students to access and use in their academic pursuit. The study showed that only a few of the final year students use the library's Internet facility when visiting the library. This means usage of Internet when visiting the library among the faculty students was extremely low. Despite this, there exists a significant relationship between their visit and usage of the Internet in downloading articles pertinent to their study. It is therefore recommended that the librarians in conjunction with faculty staff should sensitise and train students on accessing and using the Internet for better academic performance and life-long learning, as usage of the Internet by respondents was limited only to two purposes.

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