

## ACCESS AND USE OF ONLINE RESOURCES: A CASE STUDY OF POSTGRADUATE STUDENTS OF THE UNIVERSITY OF JOS, NIGERIA

By

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### Abstract

*The study focuses on the level of access and use of online resources by postgraduate students of the University of Jos. The study was limited to finding out about the student's level of access to and use of online resources. A survey method of research was adopted to carry out an investigation. The data collection instruments used was questionnaires and interviews. Because of the large population, a simple random sampling technique was used to get a sample size of 200 respondents out of the total population. The data was analyzed using frequency tables and percentages. The study found that there is a generally low level of online resource access and use, influenced by insufficient workstations, slow speed of servers, restricted access to sites, high cost of resources and facilities, poor power supply and inadequate skills and experience needed to properly utilize the benefits of online resources, among others. On that premise, the study recommends that provision of free online resources for students should be given special attention by the school authority, adequate structures and facilities that will enhance the availability of online resources should be provided. Also, a clear online resources (ICT) policy framework should be developed. There is also need for the university to ensure that user-friendly online resources content are developed.*

**Key words:** Access, Use, online, resources

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### Introduction

Online resources, variously called, digital resources, internet resources, network resources, computer resources, online facilities, electronic information sources and e-library resources Okiki and Asiru (2011) referred to online resources as those resources that are found on computer networks of organizations (intranets) or on the global network of millions of computers (Internet). The terms digital resources, internet resources, network resources, computer resources, online facilities, electronic information sources, or e-library resources, among others, are therefore used synonymously in the present study to describe information accessed online or through local

networked resources (Harle, 2009). The word 'online' is an adjective, which refers to being connected through a computer. The effective utilization or otherwise of online resources may be a factor of how well information communication technologies (ICTs) are being used. Internet usage especially, directly impacts the use of online resources. This implies that the more the number of internet users found in a given country, the greater the indication that more online resources are being used. Briefly about the Internet, according to the Internet World Statistics (2011), the estimated number of internet users' world-wide, as at June 2010, was 1,966,514,816 people, out of the total estimated world population of 6,845,609,960

people. The leading countries in internet usage, according to the report include China, the United States of America (USA), Japan, India, Brazil, Germany, Russia, the United Kingdom (UK), France and Nigeria. The report stated that Africa with fourteen percent (14.8%) of the world's population, representing 1,013,779,050 people, has 110,931,700 internet users, which is equal to five percent (5.6%) of global internet users.

Nations all over the world are competing with one another concerning the most profitable ways of utilizing information for national development. According to the World Bank (2002), knowledge is a critical determinant of competitiveness in the world economy and with the information revolution and increasing demands for a highly skilled workforce. Nations must accord high priority to building capacity to effectively utilize technology in education. The Bank emphasizes the critical importance of effectively utilizing new information and communication technologies (ICTs) and online resources to meet the growing need for a more sophisticated labor force, better management of information resources and systems, and efficient contribution to poverty reduction around the world.

The developed nations, on one hand, are doing all they can to maintain their leadership position in constructive information access, use, and dissemination, while the developing nations, on the other hand, are trying all they could to bridge the prevailing digital divide (Jagboro, 2003). Online information constitutes one of the major global sources of information being tapped by nations and individuals. ICTs are the vehicles that are being used to harness online resources and they have so changed the world that, the world as it is now, could aptly be described as a 'global village' (Ajayi, 2008). Resources online is the main driver of the information age and the knowledge society that is now the norm in advanced countries. The appropriate and effective use of the resources in the generation and dissemination of information

has greatly speeded up the general development in advanced countries.

In Nigeria, for example, many students in higher institutions of learning still depend solely on the use of traditional methods to access and impart knowledge. This lack of use of ICTs and its resources for learning and teaching is discovered to be due to the level of illiteracy in the use of online resources and ICT (Ajayi, 2008). This study adopted an integrated theoretical framework of university students' online resource access based mainly on the technology acceptance model (TAM).

On average, the University of Jos has a students population of about fifteen thousand. Most science courses are heavily subscribed to, which makes it difficult to split these classes into small enough groups for meaningful staff-student interaction due to inadequate teaching support. This has been identified as one of the key reasons for poor performance in these courses, and this supports the need to look at the way of using technology (online resources) to facilitate the learning and teaching process.

The development of online access medium has to be put in place in order to achieve this objective. Budgetary provisions by the Federal Government of Nigeria are usually very lean and coupled with corruption that is prevalent in most public institutions; the Government has not been able to meet this dire need. With support from Carnegie Corporation, HP and the World Bank's Science and Technology Education Post Basic (STEPB), funds were committed to realizing this dream (World Bank, 2002).

### **Statement of Problem**

There is low level of access and use of online resources for student research and learning in Nigerian higher institutions of learning (Jagboro, 2003). In a study about online resources usage among university students in Southern Nigeria, agricultural science students were discovered to be more in experienced in the use of online resources

(Aduwa-Ogiegbaen and Iyamu, 2005). Similarly, Agbulu and Ademu (2010) discovered that Agricultural Science students were not knowledgeable enough in the use of ICT resources. This implies that such students' were not in position to effectively use computer technology to access and use online resources. Akinnagbe and Baiyeri, (2011) in a study on training needs analysis of students for information and communication technology (ICT) skills enhancement in Agriculture recommended that students should be exposed to ICT training to enhance learning and research.

Despite the fact that students do not use ICTs and online resource as they ought to, it is nonetheless true that there are huge resources available online that could be useful for learning, teaching and research. Since it is very difficult, if not impossible, for tertiary institutions of learning to adequately meet the needs of their students, in terms of providing required books, journals, and other learning resources, it is imperative for the tertiary institutions, and students to find ways of accessing online resources that are useful for academic work.

Rosenberg (2005) observed that in realization of the importance of online resources, especially to under developed countries, the United Nations created some access programs in various sectors, including the free online biomedical information databases such as the World Health Organization (WHO) Health InterNetwork Access to Research Initiative (HINARI); Access to Global Online Research in Agriculture (AGORA) and the Online Access to Research in the Environment (OARE) in the environmental sector, as well as the Program for Enhancement of Research Information (PERI). According to her, the creation of these online resources have helped in reducing the cost incurred by publishers through regular printing, storage, and shipping of hardcopies of their publications.(World Bank, 2002).

## Objectives of the Study

The objective of the study is to determine the level of access and use of online resources among postgraduate students of the University of Jos, Nigeria. Hence specific objectives were:

- To examine the factors that determines access and use of online resources by postgraduate students of the University of Jos.
- To determine the frequency of access and use of online resources by postgraduate students of the university of Jos.
- To determine the mode of access of online resources by postgraduate students of the university of Jos.
- To determine the constraints associated with access and use and
- To determine the benefits derived from online resources by postgraduate students of the University of Jos.

## Literature Review

This work is based on the Technology Acceptance Model (TAM) which implies belief in an active audience or users who rationally take decision whether or not to use a given medium depending on the benefits derivable from the medium. TAM looks specifically at the predictions of an information resource and system. Davis (1986) developed TAM with the purpose of predicting the rate of access and to identify the modifications which must be brought to the system in order to make it acceptable to users. This model suggests that the acceptability of an information system is determined by two main factors - perceived access and perceived ease of use. The importance of this theory is that technology use depends on access and ease of use of the system. In general, variables related to access and use of online resources (or any other information technology) could be

grouped into four categories: individual context, system context, social context, and organizational context. While social context means social influence on personal acceptance of online resources access and use, organizational context emphasizes any organization's influence or support for online resources access and use. Adomi (2005) identified relevance, system ease of use, and system accessibility as organizational context variables and maintain that the organizational context affects both perceived access and perceived ease of use of an online resource. Lu-Wei and Zhang (2008) similarly reported that higher information accessibility brings about higher ease of use. In this study, online resource accessibility refers to the degree of ease with which a university student can access and use a campus online system as an organizational goal.

Online resources of different types are available on various intranets of higher institutions of learning globally, as well as on the internet. The resources are employed by users, especially in the academia for learning, teaching and research. Issa et al (2009) posits that the type and quality of online resources, institutional goals, as well as government policies have either negative or positive impact on how users access and use the resources at their disposal. The uses to which the online resources are employed are affected by some given constraints and this, in turn influences the improvement or otherwise of learning, teaching and research.

Jagboro (2003) stated that online resource can be conceived as a rich, multi-layered, complex, ever-changing textual environment. Online resource provides several opportunities for the academia. It is a mechanism for information dissemination and a medium for collaborative interaction between individuals and groups without regard for geographic limitation. Contents created online ranges from simple e-mail messages to sophisticated documents sites incorporating sounds, images and words.

Eshelks Associates (2001) said online resources are 'live', constantly 'moving', theoretically borderless, potentially infinite space for the production and circulation of information. The online resources are arguably one of the most significant developments of the late 20th century. Okiki and Asiru (2011) asserted that while printed materials have certain fixity and finitude, texts published online have much more fluid character. With texts no longer housed between library or bookshop walls, it becomes impossible to 'pin down' all or even most of the available materials in given subject areas for archival and classification purposes. The resources online, might thus be described as a 'sea of information', subject to the ebb and flow of various forces (political, corporate, institutional, etc.), creating an ever-shifting shoreline. The proliferation of publication online seems inevitable. Anyone with relevant skills, access to the necessary hardware and appropriate software can now 'publish' their work. This is obviously not possible in a print-dominated publishing environment.

Abreh (2010) arguably stated that the potential advantages of moving toward electronic publication for scholarly work far outweigh any possible disadvantages associated with such a move. With growing specialization and continuing pressure to publish, academics have been producing ever-greater numbers of articles and books every decade of the twentieth century. In some fields, the growth in published papers has followed a roughly exponential path (Adika, 2003).

Libraries, almost always short of both money and space, have become crammed with millions of books, serials, monographs, and other printed materials that are getting obsolete. Costs for serials; in particular, have reached unsustainable levels, with annual subscriptions for some journals amounting to millions of dollars (Agboola, 2003). He emphasized further, that at the same time, hundreds of new periodicals continue to be

developed each year which has forced libraries to steadily reduce the proportion of 'purchased serials' to 'total available serials' in most subject areas. Agbonlahor (2006) posits that prices of academics books have also posed difficulties for libraries, students and staff wanting to expand their scholarly collections, hence the need and dependence on online resources. By comparison with popular fiction, newspapers and glossy magazines, academic publications — both serials and books — have very small readerships (Wiley, 2006). Yet the costs associated with publishing, purchasing and storing them, if they are produced in print form, are exceptionally high.

Yusuf and Onasanya (2004) contended that publication in scholarly journals allows academics to communicate, in a disciplined and rigorous manner, with their national and international colleagues. Scholarly articles usually only find audiences beyond the academy when their subject matter is especially noteworthy. Through undergraduate and postgraduate education, academics build long-term knowledge, skills and research expertise. The network of peer review reinforces these processes. Nwezeh (2010) also asserted that "over the years, I have learned far more online about how things really work than I learned about how things should work in theory in six years of higher education as an undergraduate and graduate student". Online resources vis a vis virtual library services in our university is gradually becoming the most accessible source of knowledge. Online-based learning is a response to consumer demand and the reduction in government funding of our institutions. In view of the foregoing, the study sought to examine the accessibility and usage of online resources among postgraduate students of the University of Jos. Adomi (2005), posits that the growth of Nigeria must be hinged on technological capability and capacity of the citizens and technical prowess must be matched with business skills. This assertion can only be

realized if online resource integration in the education system meets the global standard. It is obvious that the present state of ICT and online resources access and use in education in the country is very low and unacceptable. Nwezeh (2010) reported that Nigeria is not harnessing the latest technology for productivity enhancements, as demonstrated by its low rating on ICT penetration of 112th position for "Technological Readiness" Index. Jagboro, (2003) also confirmed that personal computer (PC) penetration in Nigeria is one of the lowest in Africa. Despite the fact that the countries have a youthful population that is IT savvy and hungry not to only consume, but also to create content online. One of the major factors that affect online resources integration in Nigerian Universities is funding. The initial development costs of online resources are typically higher, and the level of cost recovery may be low. Consequently, most institutions are not usually encouraged to commit huge resources to enable access and use of online resources. Other problems are lack of hardware, inappropriate software, and lack of personal access to the use of computers by teachers and students (Issa et al, 2009). Out of a student population of 1.4million scattered in 37 state universities, 37 federal universities and 50 private universities, less than five per cent have access to personal computers in Nigeria (Adomi, 2005).

Most of the higher institutions in Nigeria lack basic online resources infrastructure to optimally utilize the benefits. Internet connectivity for instance is available in most tertiary institution in Nigeria, but in most cases the bandwidth subscribed to is too small to support any meaningful academic activity during peak period. There is lack of adequate manpower for the design operation and maintenance of online facilities in the institutions. Many schools make their choice of hardware based solely on the price and securing of large number of workstations. The support offered in most cases is commercial



without much academic content (Adika, 2003).

Many students lack the knowledge and skills to benefit from abundant resources online, in addition, they are not enthusiastic about the change and the additional learning and teaching flexibility associated with online resources. Poor economic condition and their effect on middle-level manpower stand as a major barrier to the access, use and development of online resources in our higher institutions of learning. Even an average middle-income earner cannot avoid basic technological communication gadgets. This has made the integration of necessary online resources (e-mail, world-wide-web etc.) into higher education most difficult (Issa et al, 2009).

## Methodology

The research method used for this study was the survey research method. The survey research method was found appropriate for this study because according to Harle (2009), it is “concerned with the collection of data to describe and interpret existing conditions, prevailing practices, beliefs, attitude, on-going processes, etc.” In the case of this study, the existing condition which it sought to describe, interpret and report on, is the determination of the level of online resources access and use by institutions of higher learning in Nigeria.

## Data Presentation, Analysis and Discussion

This section presents the analysis of data collected, the results and the discussion of the findings based on the statistical analysis appropriate for the study.

**Table 1: Faculty of Respondents**

Faculty	Frequency	Percent
Law	14	7
Natural Sciences	34	17
Social Sciences	41	20.5
Arts	28	14
Education	42	21
Environmental Sciences	12	6
Medical Sciences	19	9.5
Pharmaceutical Sciences	10	5
<b>Total</b>	<b>200</b>	<b>100</b>

The respondents' faculty and various responses are as shown on table 4 above.

**Table 2: Programme of Study**

Programme	Frequency	Percent
PGD	16	8
Masters	100	50
PhD	84	42
Total	200	100

The various programmes of study as shown in table 2 in the University of Jos and the responses of the students per programme.

### Analysis of Research Questions

Table 3: Online resources and services mostly used

Resources	Frequency	Percent
E-mail	47	23.5
E-Journal	29	14.5
E-book	10	5
Online database	24	12
Digital Archive	21	10.5
E-Thesis	46	23
Mailing lists	23	11.5
Total	200	100

Table 3 shows the types of online resources and services the respondents use mostly and from the responses we can see that most of

them, 47 (23.5%), use it for reading and sending mails and the least activity 10 (5%).

Table 4: Sources of online resources access

Sources	Frequency	Percent
cybercafés' within institution	7	3.5
Cybercafés' outside the University	193	96.5
<b>Total</b>	<b>200</b>	<b>100</b>

Majority of the respondents 193 (96.5%) uses the cybercafé outside university environment as against those that use the cybercafés within the university environment.

Table 5: Accessibility of online resources

Accessibility	Frequency	Percent
Easy	36	18
Average	104	52
Difficult	43	21.5
No Idea	17	8.5
Total	200	100

Table 5 shows data on respondents' access to the online resources. While 36 (18%) of the respondents said that online resources are easily accessible to them, another 104 (52%) of them said that the online resources

are averagely accessible to them. However, 43 (21.5%) of the respondents agreed that online resources are difficult to access, but 17 (8.5%) of them said that they have no idea at all.

**Table 6: Major problems militating against access and effective use of online resources**

Problems	Frequency	Percent
Slow speed of server	14	7
High service charge	28	14
Difficulty in locating needed sites	16	8
Poor environment	15	7.5
Power failure	27	13.5
System breakdown	46	23
Poor knowledge of how to use online resources	16	8
Insufficient workstation	9	4.5
Restricted access to sites	3	1.5
Time constraint	14	7
All of the above	12	6
<b>Total</b>	<b>200</b>	<b>100</b>

The major problems militating against access and effective use of online are listed on table 7 above. Repeated system breakdown poses a major challenge 46

(23%) for online resources accessibility. Restricted access sites took the least 3 (1.5%) as asserted by the respondents.



**Table 7: Ways of solving problems**

<b>Ways to solve Problems</b>	<b>Frequency</b>	<b>Percent</b>
Adequate Internet services	25	12.5
Adequate power supply	31	15.5
Subsidized charges	42	21
Adequate qualified personnel to assist students	20	10
Free access to sites	47	23.5
Others	35	17.5
<b>Total</b>	<b>200</b>	<b>100</b>

Table 7 shows that in response to an open ended question in the questionnaire, 25 (12.5%) respondents suggested that good adequate internet services speed with high bandwidth should be provided. 31 (15.5%) respondents suggested that the adequate power supply can go a long way in solving incessant power problems and encourage Internet service provisions 24 hours a day. Another 42 (21%) suggestions that subsidized charges can encourage the students from online resource accessibility. 20 (10%) of the respondents agreed that adequate qualified personnel to assist the students should be employed. 47 (23.5%) of the respondents will like gain access to restricted but censored sites should be removed at the University cybercafé in order for the students to get access to useful academic materials. Internet should be used positively.

### **Discussion**

There is limited online resource access in the university. Majority of the postgraduate students do not have access to Internet facilities as a result of ineffectiveness of the university's online resources and the lack of distribution of the limited services being offered. Majority of postgraduate students access online resources via cyber cafés and personal data modems of which they have to pay for access. Only a handful of them use the online resources through the university

facility. The implication of this is that majority of them who do not have access through personal laptops go to the cyber café occasionally and only when the need is severe. Thus, the point of access influences the frequency of resource usage. Thus online resource users are motivated by the adequacy of resources online and the convenience it offers. Online resource usage is not motivated by the availability of facility in the university. One of the benefits is that students use the online resources to gather information to supplement course materials and write their assignments.

There are so many constraints that may have contributed to the students attitudes towards access and use of online resources, common among them are erratic power supplies, difficulty in locating the needed sites, slow speed of server, insufficient workstations and restricted access to sites etc. The result shows that actual access and use of online resources is important in determining behavioral attitudes towards use which reflects on student academic performance. In agreement with what TAM postulates, perceived access was found to have significant influence on students' intention to use the technology (Davis, 1989). Similarly both attitudes and perception have significant effect on intention to use. While Davis study focused on ICT acceptance, in correlation, this study focuses on access and use of online resources among

postgraduate students of the University of Jos, Nigeria.

### Conclusion and Recommendations

The conclusions and recommendation are based on the finding of the study and subsequent suggestions for further study.

The following conclusion was made as a result of the study carried out;

- The constraints that were found out to have influenced access and use of online resources included poor power supply, high cost of access and usage of online resources, insufficient workstations, slow speed of server, and restricted access to sites.
- Another finding also shows that there is low level of online resource access and use, inadequate skills and experience needed to utilize the benefits of online resource amongst postgraduate Students of the University of Jos.
- It was also noticed in the course of the study that mass of irrelevant information accessed, download delay, failure to find needed information, inadequate/lack of search skills and difficulty in navigating through resources among others are some challenges encountered by the students when using online resources.
- There was significant difference in the desire to use online resources, and the actual access and use of online resources by the students. The resources that were noted to be more useful to respondents included online databases, digital archives, E-journals, E-books etc.

The above corroborated Okiki and Asiru (2011) who emphasized that access and use of online resources needed consistent funding, adequate skills and experience with reliable framework to ensure its functionality and continuous development.

### Recommendations

The following recommendations have been given in the light of the findings:

- The university should provide online access to students within the University campuses and in its faculties/departments. Computer laboratories and e-learning centers as well as makes available more computers and improved networks in its library as the study found out that the high cost of accessing the online resources through commercial cybercafés limits its use. The provision of free access will increase the time spent online by students as studies have shown that students tend to spend more time online when access is free. The university is already making effort to address online service provision, as at the time of preparation of this report, they commissioned an IT center.
- The school should be able to reach a position where the acquisition of Information and Communication Technology facilities and skill are regarded as priority, since it is one of the key learning objectives for its students, this will help them to be fully equipped to cope with current challenges. To this end more practical courses on ICT should be included in their curriculum particularly first year postgraduates' students' curriculum.
- Also government should equip universities with the enabling infrastructure such as adequate power supply, effective internet connectivity etc. Online resources centers with well trained personnel should be established in the universities where students can have free access to the web and other electronic resources. Thus, it is necessary that managers and developers of online resources help students increase their perception

positively through local content e-learning. One possible solution is to develop more user-friendly online content. This kind of system will add new perception to the previous attitude and thus bring about more satisfaction that will encourage them to make more use of online resources.

- There is the need for the University to develop clear ICT policy framework that will support the development of online resource services, and ensure that students and staff are exposed to training and retraining on continuous basis so that they will know appropriate techniques to use for retrieving relevant information.
- To encourage students to use the Internet more for academic activities, lecturers should give students assignments that will require them go online for needed resources. The lecturers should further encourage students to always seek for additional information online to complement lecture notes.

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