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# Relationship between Information Literacy and Use of Electronic Information Resources by Postgraduate Students of the University of Ibadan

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**RELATIONSHIP BETWEEN INFORMATION LITERACY AND USE OF ELECTRONIC INFORMATION  
RESOURCES BY POSTGRADUATE STUDENTS OF THE UNIVERSITY OF IBADAN**

**BY**

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**ABSTRACT**

The research surveyed the relationship between information literacy and use of electronic information resources for academic purposes by postgraduate students of the University of Ibadan, Nigeria. The study adopted a descriptive survey design. Samples of 300 of postgraduate students within seven out of 13 faculties were randomly selected. Data were collected using questionnaire designed to elicit response from respondents and data were analyzed using descriptive statistics methods percentages, mean, standard deviation, analysis of variance, correlation analysis and regression analysis. Low level of usage of electronic resources, in particular, full texts data bases is linked to lack of search techniques skills by many postgraduate students of the university to access the myriad of e-resources. There was significant relationship between information literacy skills and use of electronic information resources at  $\alpha = 0.05$  ( $P = 0.34$ ). Lack of adequate skills of postgraduate students resulted into the non encouragement of the expected research-led enquiry in using electronic information resources (EIRs) in this digital age. Information and Communication Technology (ICT) course be part of the curriculum of every postgraduate programme, with emphasis on e-information literacy.

**Key words:** Information Literacy, Use of Electronic Information Resources, Postgraduate students, University of Ibadan.

**INTRODUCTION**

The emergence of electronic information resources (EIRs) has also greatly transformed information handling and management in Nigerian university communities. Ani and Ahiauzu, (2008) assert that electronic information resources have gradually become a major resource in every university community. Electronic information resources are provided in electronic form, and these include CD-ROM database, online databases, online journals, OPACs, Internet and other computer-based electronic networks (Ehikhamenor, 2003; Jagboro, 2003; Shuling, 2006; Tsakonas and Papatheodorou, 2006). Academics in developing countries are fast embracing the Internet as a source of information for teaching and research. Some studies have revealed the use of the Internet, email and search engines for research purposes (Ojedokun and Owolabi, 2003; Oduwole, 2004; Badu and Markwei, 2005).

The growth of information resources has become a global phenomenon, most especially in developed societies due to technological advancement in information technology (IT). Postgraduate students in developed countries are getting access to digital information and creating their information electronically. Academics now have access to global digital information resources, particularly the

Internet for their scholarly communication (Ani and Ahiauzu, 2008). Interestingly, the Internet represents different things to different people depending on what is being sought. In the academia, it facilitates the extension of the frontiers of knowledge and constantly enhances the drive to keep abreast of scholarly publications (Ajegbomogun and Akintola, 2004).

The Internet and the World Wide Web provide scholars with quick and easy access to electronic information resources located around the globe. Academic staff members now exchange preliminary drafts of research findings with colleagues and maintain contacts by monitoring electronic bulletin boards, chat rooms and listservs on subjects of interest. Information users now use the Web to access remote databases and full-text document resources that were previously only available through expensive on-site research visits. Researchers use the Web to watch real-time images from remote research stations and satellites or participate in group discussions and group projects. Mashhadi and Han (1996), note that the information and communication revolution which resulted in the advent of the Internet, has been a formidable tool of information exchange which has obliterated distance and time and accelerated the process of creating a global community of inquiry.

Information in the early 21st Century is characterised by information overload, unequal distribution, a strong tendency to triviality and increasing concerns about credibility (Sayers, 2006). As the volumes of information are constantly increasing, search skills are required in order to gain access to the information that is available. To gain access and use these vast resources effectively, information users must learn to overcome information anxiety and as well explore the available information to enable them interpret and as well utilize information for rational decision-making. The change in formats and organization of information shows that users of information resources need guidance and education in order to achieve realistic expectations.

Roth (1999) aptly describes the current information environment and the pitfalls facing users of information globally thus:

...explosion of information generated and stored, the unregulated sprawl of the Internet, the shift from a print to an image-based culture, the development of sound and video archives,...of seemingly infinite reproduction of words and pictures through electronic media, the pitfalls ...have multiplied geometrically. In the midst of the information explosion, ability to access, retrieve and evaluate information has constituted a significant part of today's definition of literacy.

Based on this assertion, it is obvious that users of information resources must possess information literacy skills in order to harness information resources at their disposal. To respond effectively to an ever changing environment, users of information resources need more than just a knowledge base, they also need techniques for exploring it, which will also connect it to other knowledge bases and thus making practical use of it for rational decision making or problem solving. In other words, the landscape upon which we use to stand has been transformed, and users of information resources are being forced to establish a new foundation called information literacy (Owusu-Ansah, 2004).

However, it is important to understand that availability and access to information is not sufficient to guarantee that a library user will acquire the skills necessary to comfortably survive in an information world. According to the Association of College & Research Libraries (2002), information literacy is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information...Information literacy is focused on content,

communication, analysis, information searching, and evaluation. It is a vital ability for the modern information-intensive world, enabling personal, economic, social and cultural development.

Ojedokun and Lumade (2005) describe information literacy as the ability to locate, evaluate, manage and use information from a range of sources not only for problem solving but also for decision making and research. Information literacy is much broader than the acquisition of traditional information skills. This includes how to use a catalogue, how to locate a book on the shelves and how to access an electronic databases. Warschauer (2004) recognises information literacy as part of the electronic literacy spectrum, which includes computer literacy – ability to operate a computer.

Information literacy is becoming increasingly more important in our world that is rapidly evolving through the growth and proliferation of technological and information resources (American Library Association, 2000). As a result, information users are faced with countless information choices and must decide which resource(s) to use in the acquisition of information. They also determine the authenticity, validity and usability of the information they discover (ALA, 2000). The ability to access, evaluate and use information is a prerequisite for lifelong learning and a basic requirement for the information society.

The theory of information literacy presupposes that an individual recognises the need for information and knows how to find, evaluate, use and subsequently communicate information effectively to solve particular problems or to make decisions (Ojedokun, 2007). This author asserts further that whether information comes from the Internet or the World Wide Web, online databases, books, journals, government departments, films, conversations, posters, pictures or other images or any number of other possible sources, the skill to understand and critically evaluate the information is inherent in the notion of information literacy.

Bawden (2001) stresses that information literacy can be conceived as a continuous learning process that encompasses abilities and knowledge, plus the notion of values, with emphasis on several other terms and combination of terms. According to him, these terms have also been used by different authors. The terms include 'info literacy,' 'informacy,' 'information empowerment,' 'information competence,' 'information competency,' 'information competencies,' 'information literacy competence' and 'information literacy competencies.' Others are 'information competence skills,' 'information handling skills,' 'information problem solving,' 'information problem solving skills,' 'information fluency,' 'skills of information literacy,' 'information literacy and skills,' 'information literacy skills.'

Information literacy skills (ILS), according to Parang, Raine and Stevenson (2000), is a fusion of library literacy, computer literacy, media literacy, technological literacy, critical thinking, ethics and communication, which when acquired, would enable users of information to become independent life-long learners. ILS enables individuals to recognize not only when information is needed, but also when different kinds of information are needed. It provides users of information resources with methods by which they can cope with the huge quantity of information coming from all directions, through all varieties of information resources. It can then be assumed that information literacy skills are needed by Nigerian academics for effective use of information resources for quantity and quality research output.

Julien (2002) believes that an information literate person today should possess specific online searching skills such as the ability to select appropriate search terminology, logical search strategy and appropriate information evaluation. However, one barrier to the efficient utilization of information (re)sources especially digital resources in developing countries is the relatively low level of information literacy skill (Julien, 2002; Tilwawala, Myers and Andrade, 2009). Without the ability to manipulate and use information effectively, investments in both print and electronic based resources may be a waste (Pejova,

2002). In this regard, some scholars have suggested that the digital divide between the developed and developing world has widened due to lack of information literacy skills in developing countries (Dewan, Ganley and Kraemer, 2005).

Menou (2002) suggests that people should be sensitized to be able to use stand-alone computers, computer networks, and primarily, the internet and other basic applications such as word processor, spread sheet, electronic mail, and possibly more advanced ones such as presentations, production of web pages, construction of websites, use of digital multimedia equipment and programmes. He also emphasises a retooling of information professionals and submits that the potentials of the information age cannot be realized without expanding the scope of information and computer literacy. With the advent of information and communication technology (ICT) in Nigerian academic institutions, academic libraries are now using electronic information storage and retrieval devices, such as CD-ROMS; their catalogues are now OPACs, and beyond these, most universities have E-resources. As these electronic devices are introduced, it is assumed that a new skill for use needs to be developed and acquired.

An important element of the flexibility described by Corral is the recognition that amongst so much change some constants remain. For example literacy that existed in the era of print are still needed, but may have to be re-engineered to fully function in the digital environment. Perhaps the most obvious in the context of libraries and learning is the literacy of reading for a degree, an activity that is no less valid in this century than it has been previously, but which now encompasses more varied activities than reading a book or journal. Students of the net generation (Oblinger 2005), the digital natives described by Prensky (2001), work simultaneously across different media. Students at BU can be seen using laptops, books and mobile phones as they work. Observing students working in groups around laptops and PCs inspired the introduction of „techno booth in autumn 2008. These technology-rich spaces have proved to be extremely popular, enabling students to work in groups with a variety of media and Web 2.0 technologies.

However, the shift to electronic resources has brought its own problems. Fan (2005), noted that:

Most scholars, researchers, and students obtain academic information from Internet resources every day to further their own research. Fairly quickly they understand that rigorous standards of academic scholarship cannot be satisfied by a simple Yahoo search: the vast quantity of undifferentiated material such a search yields must frustrate those longing for truth.” Understanding information seeking behaviour in using electronic journals is now a major concern for libraries providing electronic journal services.

## **STATEMENT OF THE PROBLEM**

The search for information is increasingly becoming important, particularly for academic and research purposes. The worldwide web is increasingly used in conjunction with research, to share information, and to publicize projects and organizations. At the same time, the ability to sift through the gamut of information available online to find reliable and accurate data is becoming more important every day. Quite a large number of postgraduate students in developing nations as reported in literature have poor e-information literacy competency. Their low literacy skills correlate with their inability to exploit the benefits of electronic resources in their academic work. The need for this study was prompted after discovering that most postgraduate students did not find relevant and current materials for their term papers and seminar papers despite the fact that the University Library subscribes to and archives a large quantity of electronic resources. Secondly, it was assumed that postgraduate students should be knowledgeable and comfortable with electronic resource usage. The purpose of the study is to trace and

establish relationships that exist between information literacy skills on level of usage of electronic information materials for academic work of postgraduate students.

### **OBJECTIVES OF THE STUDY**

The main purpose of this study was to investigate the relationship between information literacy and use of electronic materials by postgraduate students for academic purposes at the University of Ibadan. The specific objectives of the study were to:

1. determine the level of electronic information literacy skills possessed by the postgraduate students of the University;
2. investigate what kind of electronic information resources are available to postgraduate students of the University;
3. investigate the level of usage of electronic information resources by the postgraduate students for academic purposes;
4. find out the relationship between information literacy skills of postgraduate students.

### **LITERATURE REVIEW**

The term information literacy, sometimes referred to as information competency, is generally defined as the ability to access, evaluate, organize and use information from a variety of sources. Being information literate requires knowing how to clearly define a subject of investigation, select the appropriate terminologies that express the concept or subject under investigation, formulate a search strategy that takes into consideration different sources of information and various ways information is organized and data are collected and analysed for value, relevance, quality and suitability; and successively turn information into knowledge (Watson and Johnston, 2000).

Information literacy is a set of skills which requires an individual to recognise when information is needed and has the ability to locate, evaluate and use effectively the needed information (American Library Association, 1990). Information is very important in every society and the growth of information due to the fact that industrial and information technology revolution leaves people with avalanche of information and information resources to interact with. Ojedokun and Lumade (2005) describe information literacy as the ability to locate, evaluate, manage and use information from a range of sources not only for problem solving, but also for decision making and research. Information literacy can no longer be defined without considering technology literacy in order for individuals to function in an information-rich, technology infused world.

Boekhorst (2003) notes that all definitions and descriptions of information literacy presented over the years can be summarized in three concepts: The ICT concept which refers to the competence with which to use ICT to retrieve and disseminate information. The information (re)sources concept, this refers to the competence to find and use information independently or with the aid of intermediaries, and finally, the information process concept of information literacy, which refers to the process of recognizing information need, retrieving, evaluating, using and disseminating of information to acquire or extend knowledge. This concept includes both the ICT and use of information sources.

Audunson and Nordlie (2003) also categorise information literacy into three main groups. The first group according to them describes technical capabilities, that is, computer literacy. The second deals with intellectual capabilities as they relate to traditional literacy, and the third, communicative competence that presupposes technical as well as intellectual capabilities. For each dimension, the authors distinguish several levels of competence, from basic competence to super-user competence to in-depth competence and consider information literacy as the sum of different kinds of literacy.

The thriving growth of electronic publications is reshaping the nature of collections and the mode of delivering and accessing information in libraries. The traditional print resources nowadays face challenges from their electronic counterparts in faster and timely delivery of information as well as in improved access (Bandyopadhyay and Chu, 1999). Among various resources for learning, staff and students throughout much of the world can retrieve seemingly endless volumes of information from all over the globe in a short span of time. It appears that the rate of production of electronic materials has exceeded that of print-based publications (Dalgeish & Hall, 2000).

Electronic information resources offer today's students different opportunities compared to their predecessors. Brophy (1993) details the advantages of networking for the user as being: the information needed can be delivered from the most appropriate source to the user; the user can re-specify his or her needs dynamically; the information is obtained when it is wanted, so becomes "just in time" rather than "just in case"; the user selects only the information needed to answer the specific question and, finally, the information is only stored should the user wish. Electronic information can therefore provide a number of advantages over traditional print based sources.

Liew, Foo and Chennupati (2000) argue that while reading an e-journal is not the same as reading a printed one, many are beginning to acknowledge the possibility that electronic documents (e-documents) offer users advanced features and novel forms of functionality beyond what is possible in printed form. Years ago Brophy (1993), noted that the advantages of electronic resources over print include speed, ease of use, ability to search multiple files at the same time, ability to save, print and repeat searches, more frequent updating and the ability to access from outside the library (a particular advantage for the distance learner). According to Dadzie (2005), electronic resources are invaluable research tools that complement print-based resources in any traditional library. Their advantages include access to information that might be restricted to the user because of geographical location or finances, access to current information, and provision of extensive links to additional resources or related content (Dadzie 2005). E-resources could be stored electronically thereby saving space, the risk of lost, theft or damage is lessened and costs significantly reduced.

In a study conducted at Makerere University. A look at the Library and Information Science (LIS) postgraduate students' responses regarding their attitudes on e-resources shows an encouragement. The majority (72%) of LIS postgraduate students strongly feel that the standard of their academic work would suffer without e-resources. They believe that in order to perform well, they cannot avoid e-resources. They are divided over the issue of promoting Open Access Journals to help in fighting plagiarism of people' work. But the majority disagree with the idea of not subscribing to paid journals since Open Access Journals exists. They believe that a University is not worth its name without e-resources and agree that with the advent of e-journals and e-books, CD-ROMS are becoming unpopular among students (Okello-Obura and Ikoja-Odongo, 2010.)

Kinengyere (2006) examines the effect of information literacy (IL) on the usage of electronic information resources in academic and research institutions in Uganda. The paper reports that availability of information does not necessarily mean actual use. The study shows that some of the available resources have not been utilized at all. This means that users are not aware of the availability of such resources, they do not know how to access them, or they do not know what the resources offer. All this calls for continued information literacy programs. IL is very vital in influencing utilization of information resources. Information professionals are needed to pass on IL skills to library users, while library users should endeavor to find out what information is available online for their consumption.

Information literacy encompasses more than good information-seeking behavior. It incorporates the abilities to recognize when information is needed and then to phrase questions designed to gather the needed information. It includes evaluating and then using information appropriately and ethically once it is retrieved from any media, including electronic, human or print sources. Information literacy is the solution to Data Smog. It allows us to cope by giving us the skills to know when we need information and where to locate it effectively and efficiently. It includes the technological skills needed to use the modern library as a gateway to information. It enables us to analyze and evaluate the information we find, thus giving us confidence in using that information to make a decision or create a product "Introduction to Information Literacy," (Association of College and Research Libraries, 2000).

To exploit the richness of the resources available to them students need a complex range of literacy. Kope (2006) listed a number of learning skills and strategies that she groups under the term "academic literacy". These range from critical thinking and advanced reading skills to learning with and from technology. Critical thinking is an essential skill in the print environment but is arguably even more vital in the digital learning environment. The plethora of electronic resources available demands a level of discernment and evaluation on the part of students that earlier generations learning from books and a small selection of printed journals did not have to consider.

In President Barack Obama's Proclamation designating October 2009 as National Information Literacy Awareness Month. He stated that "Every day, we are inundated with vast amounts of information. A 24-hour news cycle and thousands of global television and radio networks, coupled with an immense array of online resources, have challenged our long-held perceptions of information management. Rather than merely possessing data, we must also learn the skills necessary to acquire, collate, and evaluate information for any situation. This new type of literacy also requires competency with communication technologies, including computers and mobile devices that can help in our day-to-day decision making"

To this end, Shapiro and Hughes (1999) outlined a "prototype curriculum" that encompassed the concepts of computer literacy, library skills, and "a broader, critical conception of a more humanistic sort", suggesting seven important components of a holistic approach to information literacy:

- Tool literacy or the ability to understand and use the practical and conceptual tools of current information technology relevant to education and the areas of work and professional life that the individual expects to inhabit.
- Resource literacy or the ability to understand the form, format, location and access methods of information resources, especially daily expanding networked information resources.
- Social-structural literacy or understanding how information is socially situated and produced.
- Research literacy or the ability to understand and use the IT-based tools relevant to the work of today's researcher and scholar.
- Publishing literacy or the ability to format and publish research and ideas electronically, in textual and multimedia forms ... to introduce them into the electronic public realm and the electronic community of scholars.
- Emerging technology literacy, or the ability to continuously adapt to, understand, evaluate and make use of the continually emerging innovations in information technology so as not to be a prisoner of prior tools and resources, and to make intelligent decisions about the adoption of new ones.
- Critical literacy or the ability to evaluate critically the intellectual, human and social strengths and weaknesses, potentials and limits, benefits and costs of information technologies.

Digital libraries, e-journal platforms, portals, e-prints and other web-based information systems provide services supporting users to perform intense work tasks that require complex interaction activities. This implies that library user cannot access e-resources without adequate computer skills. Skills required to access the maximum potential of electronic resources are much greater than those required for searching printed sources. These skills include knowledge of the structure of the database and the instructions which must be input into the computer by the searcher - as well as an understanding of the ways in which the instructions are linked to one another.

### METHODOLOGY

The descriptive survey research design was adopted in eliciting information from the students that formed the subject of the study. The random sampling technique was adopted in selecting the study population. This is to ensure equal representation of samples at the faculty and departmental level. The primary sampling unit were the 13 faculties with the population of 6,665 postgraduates' students. Seven conventional faculties (Agriculture & Forestry, Arts, Basic Medical Sciences, Education, Science, Social Science and Technology) from the university were selected to a good representation of the postgraduate students in the university. Convenience and purposive sampling techniques were adopted to select respondents from two homogeneous departments from each of the seven conventional faculties. Thus, making a total of 14 departments sampled for the study. These selected departments were considered to have full representation of all departments, considering their population in the university. Hence, 333 postgraduate students out of the 2,623 constituted the sample size. Data used for this study were collected using a test and questionnaire. Descriptive statistics such as percentages, mean, standard deviation, and correlation analysis were used to analyse data collected.

**Table 1: Population and sample size.**

| Faculty                | Department                        | Population   | Sample size |
|------------------------|-----------------------------------|--------------|-------------|
| Agriculture & Forestry | Agric Economics                   | 211          | 22          |
|                        | Animal Science                    | 111          | 27          |
| Arts                   | English                           | 158          | 20          |
|                        | Linguistics                       | 86           | 10          |
| Basic Medical Sciences | Biochemistry                      | 84           | 10          |
|                        | Physiology                        | 37           | 6           |
| Education              | Guidance& counseling              | 224          | 25          |
|                        | Teacher Education                 | 485          | 52          |
| Sciences               | Chemistry                         | 214          | 34          |
|                        | Computer Science                  | 171          | 25          |
| Social Sciences        | Psychology                        | 525          | 55          |
|                        | Sociology                         | 212          | 25          |
| Technology             | Agric & Environmental Engineering | 55           | 12          |
|                        | Food Technology                   | 50           | 10          |
| <b>Total</b>           |                                   | <b>2,623</b> | <b>333</b>  |

## RESULTS AND DISCUSSION

To establish the electronic information literacy skills possessed by respondents, a number of computer skills/packages, which are prerequisites to using electronic information resources was given to the respondents to choose from. The results were as indicated in Table 2.

**Table 2: Computer skills Possession N=300**

| S\N | Computer skills, packages | Yes          | No           | Mean | S.D |
|-----|---------------------------|--------------|--------------|------|-----|
| 1   | Word-processing           | 272<br>90.7% | 28<br>9.3%   | 1.09 | .29 |
| 2   | Spreadsheets              | 196<br>65.3% | 104<br>34.7% | 1.35 | .48 |
| 3   | Database management       | 99<br>33.0%  | 201<br>67.0% | 1.67 | .47 |
| 4   | Internet and e-mail use   | 283<br>94.3% | 17<br>5.7%   | 1.06 | .23 |
| 5   | Programming               | 65<br>21.7%  | 235<br>78.3% | 1.78 | .41 |
| 6   | Web page design           | 35<br>11.7%  | 265<br>88.3% | 1.88 | .32 |
| 7   | Desktop publishing        | 117<br>39.0% | 183<br>61.0% | 1.61 | .49 |
| 8   | Power point presentation  | 246<br>82.0% | 54<br>18.0%  | 1.18 | .38 |

From **table 2** above, majority of the respondents 283(94.3%) indicated that they can surf the internet and e-mail use without any difficulties. The same was accounted for with usage of power point presentation and Ms-Word for word processing while skills about how to use spreadsheets was also found to be adequate. Skills in desktop publishing accounted for 117(39.0%). Low percentage of the respondents had low skills in desktop publishing, database management, and programming. Skills in web page design were indicated by 265 (88.3%) lacking.

A number of computer skills/packages, are prerequisites to using electronic information resource. The result of the study revealed that internet and e-mail use skills ranked high among postgraduate students of the University of Ibadan. This indicates that postgraduate students of the University of Ibadan can surf the internet and use e-mail without any difficulty. Their skills in word-processing, power point presentation, and spreadsheets also ranked high. This finding corroborates (Ansari, 2010), that there is a direct relationship between computer literacy and use of electronic resources. Kinengyere (2007) is of the same opinion that for the effective use of electronic resources, computer use and information literacy skills are essential.

Findings also revealed that they have low skills in desktop publishing, database management, and programming. This scenario falls below the findings of Okello-Obura and Ikoja-Odongo (2010) that the majority of LIS postgraduate students at Makerere University have different computer skills that include word-processing, Internet and e-mail, database management, power point and web page design which was seen very encouraging. This brings to bear the suggestion of Dutton (1990) that the skills required to maximize the potential of electronic resources are much greater than those required for searching printed sources. These skills include a knowledge of the structure of the database and the instructions

which must be input into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another.

**Table 3: Information literacy skills for electronic information resources utilization**

| S/N   | Item Description   | VH          | H            | L           | VL          | Mean | S.D  |
|-------|--|-------------|--------------|-------------|-------------|------|------|
| i.    | Formulating questions based on information needs                                       | 70<br>23.3% | 155<br>51.7% | 58<br>19.3% | 17<br>5.7%  | 2.79 | 1.01 |
| ii.   | Identifying potential electronic sources of information                                | 64<br>21.3% | 144<br>48.0% | 63<br>21%   | 29<br>9.7%  | 2.70 | 1.03 |
| iii.  | Developing successful search strategies  | 86<br>28.7% | 140<br>46.7% | 46<br>15.3% | 28<br>19.3% | 2.89 | .99  |
| iv.   | Accessing electronic sources of information  | 86<br>28.7% | 154<br>51.3% | 39<br>13.0% | 21<br>7.0%  | 2.96 | .94  |
| v.    | Evaluating electronic information sources  | 58<br>19.3% | 140<br>46.7% | 63<br>21.05 | 39<br>13.0% | 2.64 | 1.02 |
| vi.   | Organizing electronic information for practical application                            | 44<br>14.75 | 134<br>44.7% | 66<br>22.0% | 56<br>18.7% | 2.52 | .99  |
| vii.  | Integrating new information from electronic sources into an existing body of knowledge | 70<br>23.3% | 135<br>45.0% | 61<br>20.3% | 34<br>11.3% | 2.71 | 1.04 |
| viii. | Using electronic information sources in critical thinking and problem solving.         | 76<br>25.3% | 144<br>48.0% | 50<br>16.7% | 30<br>10.0% | 2.82 | 1.00 |

From **table 3** above, over two-thirds of the respondents indicated that their skills in utilizing electronic information resources for academic purposes were high. Of the eight components of electronic information resources literacy skills for academic purposes, skill in accessing electronic information of information ranked highest in that (80%) of the respondents indicated that they are competent in it. The respondents' skills in organising electronic information sources accounted for the lowest with 177 (59 %). This revealed that about 133 (41 %) of the respondents did not organise electronic information sources they used for academic work.

The study found that the relatively high skills in electronic resource experience for academic purposes negates the finding of Ozoemelem (2009) about postgraduate students of the Department of Library and Information Science of Delta State University, Abraka, Nigeria low level of electronic resource experience. On the other hand, the inadequacy of respondents' skills in evaluating electronic information sources suggested Obama's Proclamation as panacea when designating October 2009 as National Information Literacy Awareness Month: "Rather than merely possessing data, we must also learn the skills necessary to acquire, collate, and evaluate information for any situation". This had earlier being advanced by Shapiro and Hughes (1999) as critical literacy, the ability to evaluate critically the intellectual, human and social strengths and weaknesses, potentials and limits, benefits and costs of information technologies.

**Table 4: Electronic information resources are availability and use**

| S\N | Electronic resources                        | Yes          | No           | Mean | S.D |
|-----|---|--------------|--------------|------|-----|
| 1   | CD-ROMS                                     | 171<br>57.0% | 129<br>43.0% | .43  | .50 |
| 2   | Internet                                    | 266<br>88.7% | 34<br>11.3%  | .89  | .32 |
| 3   | E-mail                                      | 231<br>77.0% | 69<br>23.0%  | .77  | .42 |
| 4   | Electronic journals                         | 140<br>46.7% | 160<br>53.3% | .53  | .50 |
| 5   | DATAD (database of thesis and dissertation) | 57<br>19.0%  | 243<br>81.0% | .19  | .39 |
| 6   | OPAC(online public access catalogue)        | 42<br>14.0%  | 258<br>86.0% | .14  | .35 |
| 7   | Electronic books                            | 149<br>49.7% | 151<br>50.3% | .50  | .50 |

Majority of the respondents indicated that internet 266 (88.7%), e-mail 231 (77.0%) were available for use in the university. About half 149 (49.7%) of the respondents indicated availability of e-electronic books for their use at the University of Ibadan while less than half of the respondents 140 (46.7%) indicated availability of electronic journal for their indicated that there is the availability of electronic journals. OPAC (Online Public Access Catalogue) and DATAD (database of thesis and dissertation) were not available for use by more than two thirds of the respondents 258 (86.0%); 243 (81.0%) respectively.

Results indicated that internet and e-mail were ranked most available and used in the university. This is in consonance with the findings of Hall and Parsons (2001), dependence, coupled with easy access to technology, points toward students spending a substantial quantity of time on the Internet/online. This also supports the findings of (Valentine, 1993) that students of tertiary institution showed that they looked for the fastest way that would lead to satisfactory results when doing research, going for electronic information sources first.

CD-ROM, electronic journals and e-books that were not used by about half of the postgraduate students at the University of Ibadan could be best explained in light of Kinengyere (2006) that examined the effect of information literacy (IL) on the usage of electronic information resources in academic and research institutions in Uganda. The paper reports that availability of information does not necessarily mean actual use. The study shows that some of the available resources have not been utilized at all.

The findings on the availability and use also revealed that Online Public Access Catalogue (OPAC) and Database of thesis and dissertation (DATAD) were not available for use by more than two thirds of the postgraduate students under the study. This present scenario is hinged on the digitization process that is ongoing as at the time of this research. This suggests that those few postgraduate students who used them did so at the faculty, departmental libraries or special/research libraries visited outside the university.

**Table 5: Level of usage of electronic information resources for academic purposes**

| S\N | Items  | No           | Yes          | Mean   | S.D |
|-----|--|--------------|--------------|--------|-----|
| 1   | SCIENCEDIRECT:   | 15<br>5.0%   | 285<br>95.0% | 0.95   | .22 |
| 2   | JSTOR  | 183<br>61.0% | 117<br>39.0% | 0.39   | .49 |
| 3   | E-JOURNALS   | 201<br>67.0% | 99<br>33.0%  | 0.33   | .47 |
| 4   | AGORA  | 205<br>68.3% | 95<br>31.7%  | 0.32   | .47 |
| 5   | African journals online:   | 203<br>67.7% | 97<br>32.3%  | 0.32   | .47 |
| 6   | HINARI   | 232<br>77.3% | 68<br>22.7%  | 0.23   | .42 |
| 7   | PUBMED central   | 230<br>76.7% | 70<br>23.3%  | 0.23   | .42 |
| 8   | OARE:  | 242<br>80.7% | 58<br>19.3%  | 0.19   | .40 |
| 9   | BIOMED CENTRAL   | 247<br>82.3% | 53<br>17.7%  | 0.18   | .38 |
| 10  | NIGERIAN VIRTUAL LIBRARY   | 267<br>89.0% | 33<br>11.0%  | 0.11   | .31 |
| 11  | Global development network   | 269<br>89.7% | 31<br>10.3%  | 0.10   | .30 |
| 12  | Research paper in economics  | 278<br>92.7% | 22<br>7.3%   | 0.073  | .26 |
| 13  | BMJ publishing group:  | 279<br>93.0% | 21<br>7.0%   | 0.07   | .26 |
| 14  | POPLINE: population information online                             | 280<br>93.3% | 20<br>6.7%   | 0.066  | .25 |
| 15  | BIOONE: <a href="http://www.Bioone.org">http://www. Bioone.org</a> | 281<br>93.7% | 19<br>6.3%   | 0.0633 | .24 |
| 16  | EBSCOHOST  | 281<br>93.7% | 19<br>6.3%   | 0.0633 | .24 |
| 17  | HIGHWIRE ARCHIVE:  | 282<br>94.0% | 18<br>6.0%   | 0.06   | .24 |
| 18  | Proceedings of the American mathematical society                   | 285<br>95.0% | 15<br>5.0%   | 0.05   | .22 |
| 19  | DOAJ   | 286<br>95.3% | 14<br>4.7%   | 0.046  | .21 |
| 20  | WILSON WEB OMNIFILE:   | 290<br>96.7% | 10<br>3.3%   | 0.033  | .18 |
| 21  | Transactions of the American mathematical society                  | 290<br>96.7% | 10<br>3.3%   | 0.033  | .18 |
| 22  | ASSR: Arab social science research                                 | 290<br>96.7% | 10<br>3.3%   | 0.033  | .18 |

|           |                    |              |            |        |     |
|-----------|--------------------|--------------|------------|--------|-----|
| <b>23</b> | LanTEEAL           | 290<br>96.7% | 10<br>3.3% | 0.033  | .18 |
| <b>24</b> | MATHSCINET         | 292<br>97.3% | 8<br>2.7%  | 0.026  | .16 |
| <b>25</b> | INASP health links | 294<br>98.0% | 6<br>2.0%  | 0.02   | .14 |
| <b>26</b> | ZENTRAL BLATT MATH | 295<br>98.3% | 5<br>1.7%  | 0.016  | .13 |
| <b>27</b> | INASP PERI         | 296<br>98.7% | 4<br>1.3%  | 0.0133 | .11 |

Of the twenty-seven (27) full texts data bases subscribed to, archived and provided access to through username password by the University Library's portal only SCIECEDIRECT was ranked highest with about 95% usage statistics, followed by JSTOR, E-JOURNALS, AGORA, AJOL, HINARI all falling below 35% usage statistics. The low level of usage of usage could be linked to lack of awareness about the availability, lack of search techniques skills by many postgraduate students of the university to access the myriad of e-resources. This notion is supported by Okello-Obura and Magara (2008) that students are increasingly expected to use electronic information resources whilst at the university. To make use of the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them. Thachill (2008) also asserts that electronic resources and the new models of education have generated an even greater need for reference and instruction.

**Table 6: Relationship between Information Literacy skills and Use of Electronic Information Resources.**

| <b>Variable</b>                         | <b>Mean</b> | <b>Std. Dev.</b> | <b>N</b> | <b>R</b> | <b>P</b> | <b>Remark</b> |
|---|-------------|------------------|----------|----------|----------|---------------|
| Information Literacy Skills             | 18.6667     | 4.4038           | 300      | .122*    | .034     | Sig.          |
| Use of Electronic Information Resources | 22.0267     | 6.0775           |          |          |          |               |

**Sig. at .05 level.**

It is shown in table 4.5 (correlation analysis) above that there was significant relationship between Information Literacy skills and use of electronic information resources at  $\alpha = 0.05$  ( $P = 0.34$ ). The outcome showed that there was significant relationship between information literacy skills and use of electronic information resources at  $\alpha = 0.05$  ( $P = 0.034$ ). *Manda and Mukangara (2005)* established this association between training in the use of electronic information resources with actual use.

## **CONCLUSION AND RECOMMENDATIONS**

The relatively high skills in electronic resource experience for academic purposes might result in non encouragement of the expected research-led enquiry in this digital age, if critical literacy, the ability to evaluate critically the intellectual, human and social strengths and weaknesses, potentials and limits, benefits and costs of information technologies is neglected. The low level of usage of electronic resources, especially full text databases, among postgraduate students in the University of Ibadan revealed that they need to be more competent in using communication technologies, including computers and associated skills such as desktop publishing, database management, programming, and web page design to navigate in an electronic environment. Significant relationship between information literacy skills and use of electronic information resources was established from result of the findings. It is evident that postgraduate students need to be assisted by stake holders to acquire the needed electronic information literacy skills, provide unmediated access to effectively use and benefit from the myriads of

electronic information resources available to them to improve the quality of their academic and research work.

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