Post Graduate Students' Digital Literacy: Information Gaps

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Many countries of the world are observed to realize the importance of equipping their educational institutions with new technology which enhances information dissemination. Information and communication technologies (ICTs) have pervaded all spheres of contemporary life including information gathering. Connectivity provides many benefits which open access to large volume of educational information, opportunities for collaboration and the use of online applications for research work. Therefore it is important for postgraduate students to learn some skills to enable them explore the benefit of information and communication technology (ICT) for research work.

Information gathering is currently an important way that researchers make use of in most research works with broadband connectivity. Beetham (2010) stresses that digital tools are supporting and transforming research process in particular topic areas especially in scholarly collaboration, knowledge building, data gathering, analysis and presentation.

The information are gathered, communicated and utilized through technological tools. Therefore researchers need a repertoire of latest techniques like digital literacy to get these information and learning activities. Array of technological tools has been developed to enhance learning and academic research. One of such tools is internet which is believed to be relevant to education hence researchers need to avail themselves to use this array of ICT resources to enrich their research work.

The computer as a tool for online research activities requires digital literacy. Digital literacy is the ability of the user to recognize the necessary search engine to search for appropriate materials in the appropriate location and access the information effectively, evaluate and critically filter the materials that have not passed through peer review and use the authentic ones for the purpose it is sought for. In this context, digital literacy is not just handling of computer, it is much more than the ability to handle computers and its accessories but comprises of a set of basic skills which include the use of digital media, information processing and retrieval with the use of search engines and browsers, e-mail, participation and sharing of knowledge and a wide range of computing skills. Digital literacy is also the ability to develop strategies for searching for information for research purpose and lifelong learning which is applicable to all learning environment at all levels of education in the 21st century.

Information literacy skills and the ability to search for information in print materials and online databases form the basis of people's ability to evaluate and use information in all aspects of their research work. As the information environment has shifted from a paper-based to a digital one, the focus has shifted from Information Literacy (IL) to Digital Literacy (DL)" (Beetham 2010). With this shift in focus, there also emerged the theory that the inhabitants of this new environment, namely students born after 1980, were inherently better suited to navigating its challenges (Hargittai, 2010).

In this age of information explosion and technological development, the role of Post Graduate students' digital literacy in research work cannot be undermined. There is an increase in information and data resources and the internet is making in road to access resources such as e-journal, e-book but this takes some skills and knowledge to be able to navigate through and access them, source for the relevant materials to assist in intellectual development. Therefore postgraduate students have to be exposed to, be well informed and possessed the skills to access and use the computer and its peripherals.

Yusuf and Onasanya (2004) in Yusuf, Afolabi and Loto (2013) opines that ICT provides faster and easier access to more extensive and current information. It is used to do complex tasks as it provides students and researchers with ways of dissemination of research findings.

The National Policy on Education (2004), acknowledges the university education as an avenue to contribute to national development through research. In contemporary Nigeria, ICT has become a household name, used in offices and at home to access, receive and retrieve information. Emphasis is being placed on the use of the ICTs to access information from the world at large. Similarly many innovations today are as a result

of the exposure and access to the world of ICTs, and people all over the world can access information from any part of the world about their interests in life. In fact the world is now a global village through the use of ICT. But it has been observed that there is information gap in the use of digital devices among the postgraduate students. Most of them employ the services of cybercafé attendants to assist them source for materials from the internet. The reasons for this could be as a result of lack of skills in the use of these new technologies and inadequate information about the use of the devices. These challenges could also be attributed to lack of digital preparedness in e-learning in higher institutions hence the study examines digital literacy of postgraduate students and the information gap.

Purpose of the study

The purpose of this study is to examine the level of postgraduate students' digital literacy and ICT utilisation in research work. The paper also investigated their knowledge of browsers and search engines used researches.

Statement of the Problem

Digital skills is the gateway to effective access to varieties of ICT resources in research work but observation has shown that most postgraduate students do not avail themselves of this opportunity due to lack of search skills to source for information as well as having the techniques for collection and retrieval of such information. They rather employ Cybercafé operators to assist them in search for materials in this information age. To effectively use electronic device to join online communities and diverse networks, there is the need to possess basic digital search skills which observation has shown, most Post Graduate students researchers lack hence this study.

Research questions

The following research questions were generated to guide this study:

1. Are Post-Graduate students knowledgeable in the use of these browsers for research purpose?
2. What do Post-Graduate students use internet for?
3. Do Post-Graduate students employ the services of cybercafé operators in the use of search engines for research purpose?
4. What Post-graduate students use computer for?

Research Hypothesis

There is no significant relationship between Postgraduate Students' skill in the use of computers and digital literacy.

Significance of the Study

The study is significant in the sense that it will revealed the knowledge of different browsers and search engines that enhances research work. This study will serve as eye opener to Postgraduate students that research work can be made easy through the use of digital tool so they can avail themselves for training in the use of digital tools.

Literature Review

Digital literacy skills, particularly effective use of digital sources of information, are increasingly important in work and business, and form an integral part in Information Literacy and students' personal development. UNESCO's Information for All Programme3 (IFAP) recognizes the considerable effort being made by many international organizations in "measuring the information society", defining digital literacy as a life skill. Digital literacy improves employability because it is a gate skill, demanded by many employers on job application. It also works as a catalyst because it enables the acquisition of other important life skills.

Despite the expansion of ICT in Nigeria, researches investigating the level of ICT use for educational purposes are still relatively small. The use of technology in education and in education research in particular remains an emerging field of study. According to the working definition agreed at the UNESCO June 2003 Expert Meeting in Paris, "literacy is the ability to identify, understand, interpret, create, communicate with computer and use printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their

goals, to develop their knowledge and potential, and to participate fully in their community and wider society."

Digital Literacy Defined

According to (UNESCO, 2004) Digital literacy has positive effects on skills for successful learning. Students can access information more easily, as a growing amount of data are available in digital repositories that are much easier to access than traditional, paper-based learning resources. Managing information is a digital literacy component that students acquire and use in their private lives when joining online communities and keeping up with the diverse networks they are a part of. High skills are needed to use software tools research, integrate and evaluate information and be able to differentiate between reliable and useless digital resources.

Digital literacy refers to a set of user skills that enable active participation in a digital society where services and cultural offerings are computer-supported and distributed on the internet. Digital literacy significantly broadens the scope of potential sources of knowledge. However, information search in this area requires more sophisticated *information management* skills than traditional literacies that use resources whose validity and authenticity is relatively easier to assess.

A study implemented by the British Educational Communications and Technology Agency (Becta) reveals that the integrated use of technology enables a range of positive outcomes … progressed much faster when their digital literacy was developed using ICT tools and resources. The ability to locate and select information requires some skills. These skills will enable the students to engage with technological environments and use them to search for information and communicate it.

BENEFITS OF DIGITAL LITERACY

Digital literacy has some benefits which include the following:

- Digital literacy encourages communication and collaboration which enables student researchers to participate in digital networks for learning, research work and practices.
- It enables the student researchers to learn to use digital devices and applications
- It enhances learning skills in technology rich environment
- It helps students' access materials across the globe within the shortest time possible.
- It also enhances and assists in information sharing around the globe.

METHODOLOGY

The descriptive design of survey type was used for this study. The population for the study consisted of all the postgraduate students in Nigeria. The sample for the study is made up of 300 postgraduate students randomly selected from six universities in six states in South West, Nigeria. The instrument used for the study was a self-designed questionnaire tagged "postgraduate students digital literacy: Missing gap (PSDLMG)" and unstructured oral interview which was used to elicit information from the respondents and for data collection. The instrument was validated by research experts in ICT and test and measurement. Test retest was used to determine the reliability of the instrument and the reliability coefficient 0.75 was obtained. The questionnaire was administered by the researchers with the help of research assistants. Personal contacts of the researcher with the respondents enhanced good and prompt response. Data collected were analysed using descriptive statistics of frequency counts and simple percentage and inferential statistics of Pearson Product Moment correlation.

Results and Discussion

Question 1

Are Post-Graduate students knowledgeable in the use of the under mentioned browsers for research purpose?

Table 1: Post-Graduate students knowledgeable in the use of these browsers for research purpose

S/N	TYPES OF BROWSERS	Knowledgeable		Not Knowledgeable	
		Frequency (N)	%	Frequency (N)	%
1	Yahoo	346	76.9	104	23.1
2	Google chrome	208	46.2	242	53.8
3	Mozilla fire fox	278	61.8	172	38.2

Table 1 showed that 76.9% of the Post-Graduate students were skillful in the use of yahoo browser for their research activities, 61.8% were skillful in the use Mozilla fire fox while Google chrome was the least with only 46.2% of the sample indicating Post graduate students have the skill in the use of these browsers for research purposes. Therefore, the extent of Post-Graduate students' skillfulness in the use of browsers for research purpose is moderately high

Question 2

 What do Post-Graduate students use internet for?

Table 2: Post-Graduate students' perception of Internet usage

S/N	Internet Utilisation	YES		NO	
		Frequency(N)	%	Frequency(N)	%
1	For general information search	416	92.4	34	7.6
2	For personal information and knowledge development	313	69.6	137	30.4
3	To keep abreast of the happenings in the world	347	77.1	103	22.9
4	To download materials for assignment	278	61.8	172	38.2
5	To listen to educative global news	209	46.4	241	53.6

Table 2 reveals that 92.4% of Post graduate students perceive internet could be used to source for general information, 69.6% perceived it could be used for personal information and knowledge development, 77.1% perceive it could be used to keep abreast of the happenings in the world, 61.8% perceived it could be used to download materials for assignment while only 46.4% perceived it could be used to listen to global educative news.

Question 3

Do Post-Graduate students employ the services of cybercafé operators in the use of these search engines for research purpose?

Table 3: Post-Graduate students' employment of cybercafé operators in the use of the under mentioned Search Engines

S/N	Though I know how to browse yet I employ the services of Cybercafé operators in the use these search engines for research purpose	AGREE		DISAGREE	
		Frequency (N)	%	Frequency (N)	%
1	Google	278	61.8	172	38.2
2	Yahoo	310	68.9	140	31.1
3	MSN	35	7.8	415	92.2
4	Baidu	35	7.8	415	92.2
5	Mamma	105	23.3	345	76.7

Table 3 revealed that the respondents agreed that Google and Yahoo were prominent search engines used by cybercafé operators helped them use for research purpose. 61.8% of the total sample used Google while 68.9% used Yahoo search engine. Other search engines of less recognition among the operators included MSN (7.8%), Baidu (7.8%) and Mamma (23.3%)

Question 4: Are Post-graduate students effective in use computer ?

Table 4: Post-graduate students' effectiveness in the use of computer?

S/N	ITEMS	Effective		Not Effective	
		Frequency (N)	%	Frequency (N)	%
1	Creating files and folders	311	69.1	139	30.9
2	Downloading and Uploading materials	70	15.6	380	84.4
3	Navigating through the internet with search engines	278	61.8	172	38.2

Table 4 showed that 69.1% of the post-graduate students can create files and folders with computers effectively, 61.8% can navigate through the internet with search engines effectively while 84.4% were not effective in downloading and uploading materials from the internet little wonder they made use of cybercafé operators.

Hypothesis 1- There is no significant relationship between Postgraduate Students' skill in the use of computers and digital literacy.

Table 5: Pearson Correlation of students' use of computers and digital literacy

Variable	N	Mean	SD	R	P
Students' skill in the use of computers	450	4.85	0.66		
Digital Literacy	450	24.28	2.74	0.722	<0.05

P<0.05

Table 5 showed that there was significant, high positive relationship between post-graduate students' skills in the use of computers and their digital literacy (r = 0.722, P<0.05). The null hypothesis is rejected. Therefore, there was significant relationship between computer skill and digital literacy.

Discussion

The study revealed that a good percentage of the postgraduate students were aware that information and communication technology could be used for research purposes. Furthermore the findings of the study showed that the perception of Postgraduate students about computers and internet use to source for research materials was very high (92.4%) while those who used them for to update their knowledge (77.1%), 69.6% used them for personal knowledge development and those who used it for downloads recorded (61.8%). The perception of Postgraduate students corroborates the study of Beetham (2010) that digital tools are supporting and transforming research process in particular topic areas.

The extent of Post-Graduate students' skillfulness in the use of browsers for research purpose is moderately high. This study confirms UNESCO June 2003 Expert Meeting in Paris on the working definition agreement that "digital literacy is the ability to identify, understand, interpret and communicate with computer which enhances online researches.

Findings also showed that Post graduate students employed cybercafé operators to assist them in browsing and Google and Yahoo search engines were prominent search engines used by cybercafé operators for research purpose. 61.8% of the total sample used Google while 68.9% used Yahoo search engine. Other search engines which were less recognized among the operators were MSN (7.8%), Baidu (7.8%) and Mamma (23.3%). Also Postgraduate students exchange information with colleagues through e-mail services using Yahoo and Gmail (69.1% and 61.8%) as indicated from the result of the oral interview conducted along with the questionnaire.

A good number of post-graduate students could create files and folders with computers effectively, navigate through the internet with search engines effectively while a greater number were not effective in downloading and uploading materials from the internet little wonder they made use of cybercafé operators.

The finding also showed that computer skill cannot be divested from digital literacy so Postgraduate students need to be computer literate in order to effectively employ digital literacy in research work. The revelation of this study supports Beetham (2010) findings that digital tools are supporting and transforming research process in scholarly collaboration and exchange of information. The result of the oral interview shows that though many of them have laptops and modem yet they prefer to contact cybercafé operators.

Conclusion:

Postgraduate students in the South West though had some degree of knowledge of computer, browsers, search engines but the level of digital literacy is low hence the employment of Cybercafé operators to assist in the search of online materials. They also exchange information and collaborate with fellow researchers through e-mail services.

Recommendation

Based on the finding of the study, it was therefore recommended that

- Higher Institution of learning should make it mandatory for all their Post Graduate Students to have some knowledge of digital literacy at the point of entry which could be ascertained through competency test.
- Postgraduate students should be exposed to some courses that are digital literate related to train them in the effective use of some if not all the digital devices.
- Postgraduate student researchers should endeavour to apply digital devices and applications in their research work rather than employing cybercafé operators.

REFERENCES

Beetham, H. (2010). *Review and Scoping Study for a cross-JISC Learning and Digital Literacies Programme : Sep 2010*. London. Retrieved from http://www.jisc.ac.uk/media/

   Documents /programmes/elearning/DigitalLiteraciesReview.pdf

British Educational Communications and Technology Agency (Becta)

Catts, R. and Lau, J. (2008): Towards Information Literacy Indicators. Conceptual framework paper.

   Paris, UNESCO Institute for Statistics http://www.ictliteracy.info/rf.pdf/.InfmtnLiteracyIndic.pdf

Educational Testing Service (ETS,2008): National ICT Literacy Policy Council ICT Literacy

   Skills. www.ets.org

Federal Republic of Nigeria (2004). *National policy on education: Revised Edition*. Abuja:
   NERDC press.

Hargittai, E. (2010). Digital Natives? Variation in Internet Skills and Uses among Members
   of the"Net Generation." *Sociological Inquiry*, *80*(1), 92–113. doi:10.1111/j.1475-
   682X.2009.00317.x

UNESCO Institute for Information Technologies in Education: DIGITAL LITERACY IN
   EDUCATION, Policy Brief (May 2011)

UNESCO's Information for All Programme3 (IFAP)

UNESCO (2004). *The Plurality of Literacy and its Implications for Policies.* UNESCO

   Education Sector Position Paper. (p. 13) http://unesdoc.unesco.org/images/0013/001362

UNESCO. (2005). Alexandria Proclamation on Information Literacy and Lifelong Learning. Alexandria,
   Egypt. Retrieved from http://portal.unesco.org/ci/en/ev.php-
   URL_ID=20891&URL_DO=DO_TOPIC&URL_SECTION=201.html

UNESCO June 2003 Expert Meeting in Paris

Yusuf and Onasanya (2004) in Yusuf, Afolabi and Loto (2013): *Appraising the role of
   information communication technology (ICT) as a change agent for higher education
   in Nigeria.* International Journal of Educational Administration and Policy Studies
   Vol. 5(8), pp. 177-183, December 2013