

New Media and Mass Communication
ISSN (Paper)2224-3267 ISSN (Online)2224-3275
Vol 67, 2018

www.iiste.org

ICT Literacy Skills as Correlate of Information Utilisation Among Undergraduate Students of University of Lagos, Lagos State, Nigeria

Yusuf, Felicia¹, Owolabi, Sola Emmanuel², Oluwafemi A. Idowu³, Aregbesola, Ayooluwa^{4*}

^{1,2,4}Centre for Learning Resources, Landmark University, P.M.B. 1001, Omu-Aran, Kwara State, Nigeria.

³Kenneth Dike Library, University of Ibadan, Ibadan, Nigeria.

*E-mail of the corresponding author: aregbesola.ayooluwa@lmu.edu.ng

Abstract

The study surveyed ICT literacy skills as correlate of information utilization among undergraduate students of University of Lagos, Nigeria. It was found that the level of ICT literacy skills among the undergraduate students of the University of Lagos was relatively high. Majority of the students in the University of Lagos indicated that they acquired the ICT literacy skills mostly through self-study (users' guide), formal education, by trial and error method, as well as assistance from their colleagues.

There was no significant relationship between ICT literacy skills and information use by the undergraduate students. Likewise, no significant relationship existed between the acquisition of ICT literacy skills and use of information by the undergraduate students.

The study recommended among others that the university should periodically organize ICT literacy programmes to improve on students' ICT literacy skills for effective accessibility of the available ICT facilities like the internet and e-resources for productive information use.

Keywords: ICTs, Information utilization, ICT literacy skills, Information use.

1. Introduction

Information and communication technology is incontrovertibly becoming indispensable for educational activities. ICT has impacted on the quality and quantity of teaching, learning and research in university education. Therefore, ICT provide opportunities for students to communicate with one another more effectively during formal and informal teaching and learning (Yusuf, 2005). The technological literate person is aware of how technology is related to broader social system, how technological system cannot be fully separated from the educational, political, cultural and economic framework which shapes them. In order to be informed and acquire a balanced state, a certain level of knowledge, skills and abilities are required (Zainab, Abrizah & Edzan, 2002).

Khalkhali, Moradi and Amuei (2008) described ICT literacy to include using digital technology, communicative tools and access to communicative and informative networks, information management, data incorporation and integration, data evaluation and creation for accessing cognitive function in society. The researchers pointed out that five components of ICT literacy are categorized in the definition and these include:

- Data accessing: knowing how to collect and retrieve data.
- Data manage: applying an existing organizational or classification scheme.
- Data integration: interpreting and representing information. It involves summarizing, comparing and contrasting.
- Data evaluation: making judgments about the quality, relevance, usefulness, or efficiency of

information.

- Data creation: data production by data invention, establishment and design in digital environment.

If ICT has become indispensable to educational activities it is therefore required that undergraduate students who constitute majority of students in universities acquire necessary skills to maximally benefit from usage of ICT. Quadri and Abomoge, (2013) also affirmed that undergraduate students constitute the greatest fraction of student categories in any institution of higher learning; this is because the universities usually admit more undergraduates than postgraduate students. The undergraduate students are expected to read further after class instructions to gather information for class work, assignments, seminars, term papers and project and this information could be retrieved from various sources within and outside the library, particularly in the online environment.

2. Objectives of the study, Research Questions and Hypotheses

2.1 Objectives of the study

- Ascertain the level of ICT literacy skills possessed by undergraduates in the University;
- Find out method of acquisition of ICT literacy skills by undergraduates in the University;
- Find out the relationship that exists between ICT literacy skills and information use by the undergraduates;

2.2 Research Questions

- What is the level of ICT literacy skills possessed by undergraduates in the University?
- What is the method of acquisition of ICT literacy skills by undergraduates in the University?

2.3 Hypotheses

The following two hypotheses have been formulated in order to provide solutions to the objectives of the study:

H01: There is no significant relationship between ICT literacy skills and information use by the undergraduates

H02: There is no significant relationship between the acquisition of ICT literacy skills and use of information by the undergraduates

3. Literature Review

ICT literacy, which is also known as digital literacy has been defined as an umbrella framework for a number of complex and integrated sub-disciplines – or “literacies” – comprised of skill, knowledge, ethics and creative output in the digital network environment (Calvani, Cartelli, Fini & Ranieri, 2008). Lei (2013) elaborated further that for each component, there are distinct bodies of research with similar names, many of which pre-date the “digital era”. “Computer Literacy” has since evolved to include information technology, or, “IT Literacy”, then later, information and communication technologies, or, “ICT Literacy” (Martin & Grudziecki, 2006).

On their own part, Calvani, Fini and Ranieri (2009) gave a summary of digital/ICT literacy as a combination of concrete and unquantifiable skills, which has to do with being able to explore and face new technological situations in a flexible way, to analyze, select and critically evaluate data and information, to exploit technological potentials in order to represent and solve problems and build shared and collaborative knowledge, while fostering awareness of one’s own personal responsibilities and the respect of reciprocal rights/obligations.

Breivik (2005) research indicated that students are entering higher education, including graduate school, lacking basic ICT skills and, because these skills are not being taught or reinforced in the classroom, they are also entering the workforce with a deficit of critical ICT abilities. As a result, the Computer Science and Techno communications Board (CSTB) and the National Research Council (NRC) issued a report (NRC, 1999 cited in Macklin & Culp, 2008) that identified three areas higher education should be addressing to support ICT literacy and better prepare graduates:

- Foundational skills: "the basic principles and ideas of computers, networks, and information".
- Contemporary skills: "the ability to use particular (and contemporary) hardware or software resources to accomplish information processing tasks".
- Intellectual capabilities: skills that "integrate knowledge specific to information technology with problem domains".

4. Methodology

The survey method was adopted for this study. The population for the study comprises 7486 undergraduate students from 4 faculties in University of Lagos. Four faculties were selected on the basis of the largest population of students. These faculties are Social Sciences with 6 departments, Business Administration with 5 departments, Education with 6 departments and Sciences with 11 departments. Data collection for this study would be conducted through the use of a questionnaire designed specifically for the purpose, which will be personally administered on the 308 undergraduates. Data was coded and analyzed using the Statistical Package for the Social Scientists (SPSS) software to develop descriptive and inferential statistics. Descriptive statistics such as frequencies and percentages presented in tabular form were used for the analysis.

A total of 308 copies of the questionnaire were administered to respondents in University of Lagos and all were duly completed and returned and were found valid for analysis. The reason for this high success was that students were asked to fill the questionnaire as they were leaving the examination hall. This represents a total of 100% response rate as shown in Table 1.

Table 1: Questionnaire administration and return rate

Faculties	Department	Questionnaire Sampled	Questionnaire Returned
Social Sciences	Economics	30	30
	Mass Communication	32	32
Business Administration	Banking and Finance	60	60
	Business Administration	78	78
Education	Adult Education	38	38
	Educational Administration	31	31
Sciences	Computer Science	23	23
	Mathematics	16	16
TOTAL		308	308

5. Results analysis

5.1 Demographic Characteristics of the Respondents

Table 2 showed the demographic characteristics of the respondents in University of Lagos such as faculty, department, gender, age, religion, et cetera. Majority of the respondents, 138(44.8%) were from the Faculty of Business Administration while the least of them 39(12.7%) were from the Sciences. Concerning the level of study, most of the undergraduates 133(36.7%) were in 400 Level while only 18.2% of them were in 100 level. There were 164(53.3%) female and 144(46.7%) male respondents in the study, while most of them 142(46.1%) fell within the age range of 21 to 25 years of age, and the least respondents were between 36 to 40 years of age. Also, majority of the respondents 73.3% practiced Christianity while just 65(21.1%) respondents belonged to Islam. As for the monthly income, 25.3% of the respondents earned between #25,000 and #29,999 while only 1.0% earned less than #10,000 per month. 108(35.1%) of the respondents indicated that father's occupation was civil servant while the least were pensioners; majority 122(39.6%) identified mother's occupation as businesswoman and 14.6% as pensioners; while more than half 194(63.0%) of the undergraduate respondents resided in the halls and only 15.9% resided at home as students.

Table 2: Demographic characteristics of the respondents

Variables		Frequency	Percentage (%)
Faculty	Social Sciences	62	20.1
	Business Administration	138	44.8
	Education	69	22.4
	Sciences	39	12.7
Level of study	100	56	18.2
	200	62	20.1
	300	77	25.0
	400	133	36.7
Gender	Male	144	46.7

	Female	164	53.3
Age Range	16 – 20 years	105	34.1
	21 – 25 years	142	46.1
	26 – 30 years	18	5.8
	31 – 35 years	33	10.7
	36 – 40 years	10	3.2
Religion	Christianity	227	73.7
	Islam	65	21.1
	Others	16	5.2
Monthly income	<#10,000	3	1.0
	#10,000 - #14,999	74	24.0
	#15,000-#19,999	60	19.5
	#20,000-#24,999	61	19.8
	#25,000-#29,999	78	25.3
	>#30,000	32	10.4
Father's occupation	Civil Servant	108	35.1
	Private Company Employee	90	29.2
	Businessman	96	31.2
	Pensioner	14	4.5
Mother's occupation	Civil Servant	91	29.5
	Private Company Employee	35	11.4
	Businesswoman	122	39.6
	Pensioner	15	4.9
	Housewife	35	14.6
Residence as a Student	Hall	194	63.0
	Off campus	65	21.1

	Home	49	15.9
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5.2 Research Questions

Three research questions were formulated for this study in order to achieve the set objectives, and answer to these research questions are provided below:

Research Question 1: What is the level of ICT literacy skills possessed by undergraduates in the University?

Table 4.6 showed the level of ICT skills among the undergraduate students of the University of Lagos. About 274(88.8%) of the respondents were very good in using the internet and its various features, e.g. browsing, e-mail, et cetera while 23(7.5%) respondents were average and 11(3.6%) were poor in using the internet. It was also revealed that the majority of the respondents 267(86.7%) were very good at accessing information from the WWW while only 5 respondents were very poor. However, most respondents, 114(37%) were very poor in initiating search strategies by using Boolean operators like OR, AND, NOT with 80(26.0%) of them being average.

Other areas of ICT literacy skills where the students were very good included: independently operating personal computer systems, using software for preparing work, e.g. MS Word, using information from the WWW, using an eLearning platform, using electronic information sources, and using internet search tools (such as search engines, directories, etc.). The students were also good at initiating search strategies by using keywords, using technology effectively, with high level of information retrieval skills through various media.

Table 3: Levels of ICT literacy skills of undergraduates

ICT skills	V. Good		Good		Average		Poor		V. Poor	
	F	%	F	%	F	%	F	%	F	%
I can independently operate personal computer systems	188	61.0	74	24.0	38	12.3	1	0.3	2	0.6
Use software for preparing work, e.g. MS Word	124	40.3	111	36.0	47	15.3	11	3.6	6	1.9
Use software for presenting work, e.g. MS PowerPoint	87	28.2	85	27.6	89	28.9	22	7.1	9	2.9
Use internet and its various features, e.g. browsing, e-mail, et cetera	199	64.4	75	24.4	23	7.5	10	3.2	1	0.3
Access information from the WWW	191	62.0	76	24.7	26	8.4	4	1.3	1	0.3
Use information from the WWW	191	62.0	74	24.0	27	8.8	4	1.3	12	3.9
Use an eLearning platform	88	28.6	91	29.5	79	25.6	20	6.5	10	3.2
Perform data analysis with a computer package.	71	23.1	74	24.0	87	28.2	40	13.0	11	3.6
I can use electronic information sources	105	34.1	97	31.5	63	20.5	15	4.9	4	1.3
Ability to use internet search tools (such as search engines, directories, etc.)	168	54.5	75	24.4	38	12.3	9	2.9	1	0.3
I can easily initiate search strategies by using keywords	111	36.0	96	31.2	52	16.9	25	8.1	4	1.3
I can easily initiate search strategies by using Boolean operators like OR, AND, NOT	31	10.1	47	15.3	80	26.0	74	24.0	40	13.0
I am good at searching indexes and electronic databases for information	44	14.3	77	25.0	78	25.3	52	16.9	24	7.8
Use of indexes and electronic databases like JSTOR, Google Scholar	73	23.7	75	24.4	71	23.1	37	12.0	16	5.2
I can evaluate www sources	82	20.1	84	27.3	75	24.4	32	10.4	20	6.5
High level of information retrieval skills through various media	60	19.5	87	28.2	87	28.2	28	9.1	12	3.9
I can use technology effectively	96	31.2	96	31.2	72	23.4	11	3.6	4	1.3

Research question 2: What is the method of acquisition of ICT literacy skills by undergraduates in the University?

The various methods of acquiring ICT literacy skills among the undergraduate students of University of Lagos are revealed in Table 4.7. Majority of the respondents 212(68.8%) acquired ICT literacy skills through self study (users' guide). Also, about half of the total respondents 156(50.6%) acquired the ICT literacy skills through formal education, while the least of the respondents from the University acquired the ICT literacy skills through training offered by the university library.

Table 4: Method of acquiring skills by undergraduate students

Method of acquiring skills	Frequency	Percentage %
By trial and error	189	61.4
Assistance from my colleagues	207	67.2
Guidance from library staff	110	35.7
Self-study (user's guide)	212	68.8
Training offered by faculty/department	84	27.3
Training offered by my university library	71	23.1
Formal Education	156	50.6
Short course on computer appreciation	134	43.5
Attending workshops/seminars	123	39.9
Attending IT programmes	139	45.1

5.3 Test of Hypotheses

H01: There is no significant relationship between ICT literacy skills and information use by the undergraduates

Table 4.9: Relationship between ICT literacy skills and information use

Variable	Mean	Std. Dev.	N	R	P	Remark
ICT literacy skills	35.6873	16.7052	230	.171*	.019	NS.
Information use	21.8070	12.0981				

** Sig. at .01 level

Table 4.9 showed that there was no significant relationship between ICT literacy skills and information use by the respondents ($r = .171^*$, $N = 230$, $P > .05$). This simply implies that ICT literacy skills have no significant influence in the use of information by the undergraduate students. Hence, the null hypothesis is valid and is therefore upheld.

H02: There is no significant relationship between the acquisition of ICT literacy skills and use of information by the undergraduates

Table 4.10: Relationship between the acquisition of ICT literacy skills and information use

Variable	Mean	Std. Dev.	N	R	P	Remark
Acquisition of ICT literacy skills	10.0000	1.0000	228	.175*	1.000	NS
Information use	21.8070	12.0981				

** Sig. at .01 level

It is shown in Table 4.10 that there was no significant relationship between the acquisition of ICT literacy skills and use of information by the respondents ($r = .175^*$, $N = 228$, $P > .05$). This shows that the means through which the undergraduate students acquired their ICT literacy skills has nothing to do with their use of information. Therefore, the null hypothesis remains valid and is thus upheld.

6. Discussion of the Findings

The findings of the study revealed that the level of ICT literacy skills among the undergraduate students of the University of Lagos was relatively high. It was found that most of the undergraduate students were very good at using the internet and its various features, e.g. browsing, e-mail, et cetera; and, accessing

information from the WWW. Other ICT literacy skills possessed by the students included: independently operating personal computer systems, using software for preparing work, e.g. MS Word, using an eLearning platform, electronic information sources, and internet search tools (such as search engines, directories, etc.). However, most of the students had poor skills in initiating search strategies by using Boolean operators like OR, AND, NOT. It was observed from the findings that most of the students in University of Lagos indicated that they acquired the ICT literacy skills mostly through self study (users' guide), formal education, by trial and error method, as well as assistance from their colleagues.

7. Summary of findings

The major findings of the study are summarised as follows:

- The level of ICT literacy skills among the undergraduate students of the University of Lagos was relatively high. Most of the undergraduate students were very good at using the internet and its various features, e.g. browsing, e-mail, et cetera; and, accessing information from the WWW.
- Majority of the students in the University of Lagos indicated that they acquired the ICT literacy skills mostly through self study (users' guide), formal education, by trial and error method, as well as assistance from their colleagues.
- There was no significant relationship between ICT literacy skills and information use by the undergraduate students. Likewise, no significant relationship existed between the acquisition of ICT literacy skills and use of information by the undergraduate students.

8. Conclusion

The level of ICT literacy skills possessed by undergraduates greatly influenced their information use capability. The undergraduates used educational information, personal information, information related to course work, research information from time to time in their daily activities. And, with the ICT literacy skills like the ability to use the internet and its various features, e.g. browsing, e-mail, locating information resources in the library, and ability to independently use the computer systems to access information from the WWW, et cetera, they were able to acquire the relevant information needed to function effectively as students.

The availability of ICT facilities like the computers, internet facilities and electronic resources, etc., and the high level of ICT literacy skills possessed by the students to support their information use notwithstanding, they were often confronted with the challenges like poor network\internet connectivity and inadequate technological facilities to use which need to be urgently addressed by the university library to ensure the effective provision of information services to the users community to help them realise their education goals.

9. Recommendations

The following recommendations were made based on the findings of this study:

1. The university should periodically organise ICT literacy programmes like short courses and trainings for the students in various faculties and departments to improve on their ICT literacy skills for effective accessibility of the available ICT facilities like the internet and e-resources for productive information use.
2. The various methods of teaching the students ICT literacy skills in the institution need to be

intensified from all angles such as the libraries, departments, ICT laboratories, etc. to better equip the students to become independent learners.

3. Library also need to provide for adequate personnel to train the students in information literacy skills which they need for effective library use and information retrievals. This will make them self-learners and independent library users.

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Biographies

1. Yusuf, Felicia is the pioneer University Librarian (Director of the Centre for Learning Resources), Landmark University. She holds a B.A degree in Library Science/Sociology from Bayero University, Kano and a Master degree in Library and Information Science from the University of Ibadan. Before she was redeployed to Landmark University in 2011, she had worked for eight years at the Centre for Learning Resources, Covenant University, Ota where she received an award for singularly automating the Serials Section of the Library. She has published substantially in a number of reputable local and international journals. Yusuf, Felicia is a member of the Nigeria Library Association (NLA) and a Certified Librarian of Nigeria (CLN). She is currently on her PhD programme at the University of Ilorin.
2. Owolabi, Sola Emmanuel is a bibliophile and currently the Readers' Services Librarian and lecturer at the University Wide Courses Directorate of Landmark University. His research interest focuses on Bibliotherapy, Metadata Analysis, Soft Skills, User/Knowledge Management, Cataloguing and Classification, Emerging Information Technologies, Digital Libraries and currently a doctoral student at the University of Ibadan, Nigeria. He holds first degree in Library Science/ Communication Language Arts and Masters in Library and Information Science from the University of Ibadan. He has worked with multinational and corporate organizations before venturing into academics. Sola Owolabi is a Certified Librarian of Nigeria (CLN) and the Publicity Secretary of Nigeria Library Association (Kwara State Chapter).
3. Oluwafemi A. Idowu works with Kenneth Dike Library, University of Ibadan. He is a Certified Librarian of Nigeria (CLN) with interests in quality customer services, and emerging library technologies. He holds Diploma, First Degree and Masters in Library and Information Studies, University of Ibadan. He

has published extensively in reputed national and international journals.

4. Aregbesola, Ayooluwa is a faculty in the Centre for Learning Resources, Landmark University, Omu-Aran, Nigeria. He holds bachelor's degree in economics and Education from the University of Ado-Ekiti, and M.Inf.Sc. in Information Science from the University of Ibadan. His research interest spans the field of Social and Collaborative Computing. He is currently the Collection Development Librarian of the Centre for Learning Resources, Landmark University, Omu-Aran and has considerable number of publications in reputable local and international journals. He is a Member Nigerian Library Association (NLA), Member Information Technology Section of the Nigerian Library Association and a Certified Librarian of Nigeria (CLN).