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Digital Literacy Skills of Library and Information Science Undergraduates in South-West, Nigeria

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ABSTRACT

This study investigated the digital literacy skills of Library and Information Science undergraduates in South-West, Nigeria. The study adopted survey research design, and questionnaire was used to collect data from the respondents. Sample size of one hundred and ninety-nine (199) was determined using Taro Yamane's (1973) formula and multi stage sampling technique was used for the selection of 199 respondents from 518 population of the study. Out of 199 copies of the questionnaire administered, 184 copies were retrieved and fit for data analysis resulting in a 93% response rate. Analysis was done using descriptive statistics. The result revealed that the level of digital literacy skills of the undergraduates was high. The study concluded that the level of digital literacy skills of Library and Information Science undergraduates in South-West, Nigeria, was high. It was recommended that the university faculties should leverage on this strength to enhance the teaching learning process by using the digital platforms to teach the students more often.

Key words: Digital literacy skills, Library and Information Science (LIS), Undergraduates

As society evolved because of technology, it is vital that undergraduates have digital skills to operate and function effectively. Digital literacy comprises a set of competencies needed for participation in the knowledge society of the 21st century. According to Antoninis and Montoya (2018), digital literacy skills involve browsing skill, searching and filtering data skill, information and digital content creation skills, evaluating digital content, managing data, communication and collaboration. These involve interacting and sharing through digital technologies and engaging in citizenship through digital technologies. It involves effective use of smart phones, tablets, laptops, and desktop PCs for purposes of communication, expression, collaboration and advocacy (Omiunu, 2019). This has provided access to digital information in different formats. However, students' access to possession of devices and digital resources revealed poor usage of technology in the learning process (Kaeophanuek, Na-Songkhla & Nilsook, 2018).

The development in technology of the 21st century has necessitated the change of academic activities from analogue platforms to digital platforms. Students are expected to be digitally literate so that they can participate actively and acquire the knowledge and skills in the course of their university education while using technology. This is necessary especially now that technology is used in learning-teaching, research and more importantly the society is transforming with technology. This implies that students without digital literacy may be cut off from benefiting from this transformation or deployment of electronic resources can affect not just personal development but academic and future employment. Importantly, digital literacy skills help students to showcase their ability to learn and apply new technology skills. It also helps students to present their ideas in a more innovative way thereby improving students' academic performance. Similarly, digital skills help students in critical thinking, development of perseverance, resilience and strength of purpose cooperation (team work), being creative and good communication skills.

Extant studies on covid-19 pandemic describes the restriction of physical meetings between faculty members and students. The restriction of contact led to the use of digital technology which has become a prerequisite for students' academic engagement. The result is that digital platforms have become more ubiquitous and students must become skilful enough to maximize the digital applications for their academic work. It is expected that this study will herald a

significant improvement in students' engagement and performance. Findings on a study of digital literacy skills of LIS students revealed that they possessed intermediate level skills. However, following the definitions of scholars on digital literacy, it is fit to bring to note that the criteria used in Adeoye and Adeoye's (2017) work do not provide an encompassing coverage of what digital skills entail.

In addition, most of the works on digital literacy focused on lecturers and not students in Nigeria. Hence, there is the need to focus on library and information undergraduates in Nigerian universities to show the true picture of their level of digital literacy skills. This study, although involves different group of students, it revealed that few studies have focused on specific library and information science students in South-West, Nigeria. The aim of this study is to investigate students in this regards as it is vital for educational administrators and librarians to understand the level of digital competencies to support them better not just for designing targeted contents but to bridge the digital divides as well as support them in the use of information available online.

The structure of this study will include literature review, results, discussion, conclusion and recommendations. Digital literacy skill is also vital to enhance confidence in use of electronic databases in the library. In addition, digital literacy skill is necessary for retrieval of relevant and up-to-date information for student's work. To this end, undergraduates need such digital skills for speedy retrieval of the exact information needed from electronic resources to use for the various academic activities (Adeoye & Adeoye, 2017).

Objective

To determine the level of digital literacy skills of Library and Information Science students in universities in South-West, Nigeria.

Literature Review

Concepts of Digital Literacy Skills

Digital literacy is one of the major skills among media, technology, information, visual, and computer literacy (Omiunu, 2019). The term 'digital literacy' came into existence in the mid-1990s to explain the transformation of reading and writing in an internet mediated

environment (Bawden, 2001; Feerrar, 2019). Despite the argument regarding getting an encompassing definition of the term “digital literacy”, several scholars have tried to do justice to this. According to Karpati (2011), digital literacy is an umbrella concept for important skill clusters in the information age. The skills include information literacy skills, communication skills, digital content creation skills, safety skills and problem solving skills. Another scholar, Omiunu (2019) defines digital literacy as the set of competencies required for full participation in a knowledge society and it includes knowledge, skills, and behaviours involved in the effective use of digital devices such as smart phones, tablets, laptops, and desktop PCs for purposes of communication, expression, collaboration and advocacy. In recent time, digital literacy has even become much more than the ability to handle computers but has extended to a set of basic skills which include the use and production of digital media, information processing and retrieval, participation in social networks for creation and sharing of knowledge, and a wide range of professional computing skills (Karpati, 2011). In their contribution, Emiri (2015); Shopova (2014) stated that digital literacy refers to the ability to use technology competently, interpret and understand the various digital contents and assess its credibility, create, research, and communicate with appropriate tools. In addition, Belshaw (2011) stated that digital literacy is supported by basic technical use of computers and the internet in a digital environment. Digital literacy could refer to the basic skills or ability to use a computer confidently, safely and effectively. It also cuts across the ability to use office software such as word processors, email and presentation software, the ability to create and edit images, audio and video, and the ability to use a web browser and internet search engines.

Digital literacy skills of students

Some scholars have investigated digital literacy skills.A recent study conducted in North Bengal, India by Ehs and Ghosh (2022) found that digital literacy skills of LIS students was high. Cerny (2021) also found that digital literacy skills of library and information science students were high and stable. Another study on LIS undergraduate students found that the students could deploy such skills as electronic mail skills, internet surfing skills, social networking skills, basic computer operation, electronic search and retrieval skills, accessing electronic resources through search engines to their academic activities. However, the school environment was not conducive

and the level of the students' digital literacy skills was inadequate (Udoh, Ekpeyong & Olowookere, 2020).

Digital literacy was defined as the ability to critically appraise information using the internet to make effective and efficient decision (Brown & Dickson, 2010). There is a consensus that a new set of 21st-century skills involving technologies such as those related to digital literacy are needed for effective societal participation (Osterman, 2012). For example a study of Nigerian universities by Eke, Omekwu and Agbo (2014) found that individuals have such literacy skills which cut across the booting of computer system, logging in and logging out of the internet, using world wide web to find out information for academic purposes, saving files from a web page, use of various search engines in sourcing for academic materials, connecting to the internet, sending and receiving e-mail messages, downloading files from the internet and sending attachments with e-mail messages. However, respondents were found to be deficient in the use of e-resources for academic purposes, uploading file on the internet, use of web 2.0 tools in teaching and learning activities and taking part on on-line discussion and chatting with colleagues. Hamutoglu, Savasci and Sezen-Gultekin (2019) studied attitude towards e-learning and digital literacy skills of prospective teachers enrolled in the Department of Computer Education an Instructional Technology at a State University in Turkey. This study adopted a quasi-experimental pre-post-test design in an experimental group. The results overall demonstrated that whereas a significant change was observed in the participants' attitudes toward e-learning, it did not have a significant impact on their digital literacy skills.

Another study by Robinson and Taneh (2018) studied how digital illiteracy can be a constraint to technology education advancement in South-South region of Nigeria. A survey research design was adopted and the finding revealed that digital illiteracy is an obstruction to the progress of technology education in Nigeria. Based on the findings, it was recommended that in order to enhance digital proficiency in technology education, government should adequately provide digital facilities in all technology education institutions in Nigeria. Perdana, Yani, Jumadi and Rosana (2019) investigated digital literacy skills of students in grade 10 and 11 in Senior High School in Yogyakarta. It was found that the level of digital literacy skills of all the students was very low and efforts should be made to enhance students' digital literacy skills.

Specifically, studies that focused on Library and Information Science found that students had access to digital resources but they could not understand how to maximise the technology in

the learning process (Kaeophanuek, Na-Songkhla & Nilsook, 2018). However, the school environment was not conducive and the level of the students' digital literacy skills was inadequate (Udoh, Ekpeyong, & Olowookere, 2020).

In their study of digital literacy skills of undergraduate students in Nigerian Universities, Adeoye and Adeoye (2017) found that students possessed an average level of digital literacy skills which comprise using online works, and using media-capture devices. This study employed descriptive research design and a multiple stage sampling technique. The study employed descriptive survey design and multiple stage sampling technique was used. To search for LIS students' digital literacy skills, Emiri (2015) in his study, digital literacy skills among librarians in university libraries in the 21st century in Edo and Delta States, Nigeria found that the level of proficiency of digital literacy skills was moderate and for others low. Also, while tertiary students are expected to possess digital skills (Leahy & Dolan 2010), studies such as Heerwegh, DeWit & Verhoeven (2016); Bergdahl, Nouri & Fors (2019); among others noted that, many students do not have the digital skills needed to be able to function in the digital academic environment.

Similarly, Kim, Hong and Song (2019) emphasized that students need strong digital skills to perform academic work and commit to involvement in the context of academic learning in university e-learning environments. The struggle to engage in various academic activities has been a major challenge that is common with the use of the traditional and print based literacy (Hassel & Ridout, 2018). This has led to adverse effect of learning outputs among students and has reduced the impact of education on students' development. For example, Ukwoma, Iwundu and Iwundu (2016) investigated the digital literacy skills possessed by the students of University of Nigeria, Nsukka (UNN), and the extent to which they use these digital literacy skills in their academic works. The study found that some students that possess digital literacy skills use it daily and it has affected their academic engagement. Another study in context of Nigeria, by Adeoye and Adeoye (2017) emphasised the need for undergraduates to have digital literacy skills to function in digital environment for academic pursuit. This will help the students to be able to use technological devices to interact and connect with others especially on issues that relate with their academic activities.

Methodology

The study adopted the survey research design. The study population was 518 final year Library and Information Science (LIS) students in the five (5) universities that are accredited to offer Library and Information Science and allied courses in South-West, Nigeria. Using Taro Yamane's (1973) formula, a sample size of 199 was determined. Stratified random sampling was used to select three universities that participated in the study. A structured questionnaire was used for data collection. The level of digital literacy skills of LIS students was measured using the following modified version of digital literacy scale by the European Commission (2014). The scale comprises the following: Information literacy skills (which include information retrieval skills, information processing ,information use, skills to use web browser and skills to participate in social network); communication skills (which include skills for knowledge sharing and presentation); digital content creation skills (which include skills for using office software, creating, editing and operating e-mail services), safety skills and problem solving skills (which include skills to use the internet).

Possessing digital literacy skills is a good foundation that could help promote students' learning and such students could easily navigate the use of mobile learning applications. The instrument was validated using face validity, content validity and construct validity. To ensure the reliability of the instrument, a pilot study was conducted at Ambrose Ali University, Ekpoma involving 30 students. The Cronbach's alpha reliability coefficient for digital literacy skills is 0.954. Out of 199 copies of questionnaire that were distributed, only 184 copies were returned within the response period and fit for analysis. The response rate was 93%. The analysis of the data was done using descriptive statistics that is frequency counts, percentages, mean and standard deviation. The Statistics Package for Social Sciences (SPSS) version 21 was used to analyse the data.

Demographic information of the respondents

This section presents the information of the respondents according to their age, gender and the name of university.

Table 1: Demographic Information of the respondents

Characteristics	Classification	Frequency	Percentage

			%
Age	16-20 years	43	23.4
	21-25 years	102	55.4
	26-30 years	36	19.6
	31 years and above	3	1.6
Gender	Male	83	45.1
	Female	101	54.9
Name of University	Lead City University	12	6.5
	Tai Solarin University of Education	136	73.9
	University of Ibadan	36	19.6

Level of Digital Literacy Skills of Library and Information Science students

Table 2: Digital literacy skills of students

Digital Literacy Skills	**Very High Level (%)**	**High Level (%)**	**Average Level (%)**	**Low Level (%)**	**Very Low Level (%)**	**Mean**	**SD**
Information literacy skills						**4.21**	**.940**
I can save information that I need	88(47.8)	75(40.8)	9(4.9)	7(3.8)	5(2.7)	4.27	.925
I can download information for my work	84(45.7)	75(40.8)	15(8.2)	5(2.7)	5(2.7)	4.24	.916
I have the ability to browse online information that meets my information need.	79(42.9)	82(44.6)	10(5.4)	8(4.3)	5(2.7)	4.21	.930
I can use different search strategies when searching for information	77(41.8)	83(45.1)	11(6)	6(3.3)	7(3.8)	4.18	.961
I can filter the information to determine what is useful	75(40.8)	84(45.7)	11(6)	7(3.8)	7(3.8)	4.16	.971
Communication literacy skills						**4.05**	**.991**
I can share content with others	68(37)	87(47.3)	17(9.2)	5(2.7)	7(3.8)	4.11	.952
I have the ability to observe basic rules when communicating with others	63(34.2)	93(50.5)	14(7.5)	8(4.3)	6(3.3)	4.08	.940
I can protect my reputation online	71(38.6)	78(42.4)	19(10.3)	6(3.3)	10(5.4)	4.05	1.054
I can vary my communication to suit my audience	63(34.2)	87(47.3)	17(9.2)	9(4.9)	8(4.3)	4.02	1.013
I can use a wide range of tools for online communication	59(32.1)	83(45.1)	25(13.6)	11(6)	6(3.3)	3.97	.997
Content creation skills						**3.82**	**1.051**
I can produce digital content	60(32.6)	70(38)	31(16.8)	19(10.3)	4(2.2)	3.89	1.047
I can explain how copyright applies to content	50(27.2)	88(47.8)	27(14.7)	13(7.1)	6(3.3)	3.89	.993
I can edit content created by others	50(27.2)	77(41.8)	32(17.4)	18(9.8)	7(3.8)	3.79	1.068
I can refine existing resources to create new ones	47(25.5)	81(44)	34(18.5)	15(8.2)	7(3.8)	3.79	1.035
I have the ability to create a multimedia	50(27.2)	75(40.8)	31(16.8)	19(10.3)	9(4.9)	3.75	1.113
Safety skills						**3.98**	**.981**
I can avoid cyber bullying(online harassment)	60(32.6)	90(48.9)	22(12)	8(4.3)	42.2)	4.05	.904

I can take basic steps to protect my devices from malware threats	62(33.7)	85(46.2)	24(13)	8(4.3)	5(2.7)	4.04	.943
I can take steps to avoid online risks to my health	56(30.4)	91(49.5)	21(11.4)	11(6)	5(2.7)	3.99	.952
I only share certain information about myself online	51(27.7)	95(51.6)	20(10.9)	8(4.3)	10(5.4)	3.92	1.024
I can take necessary steps to prevent intrusion to my privacy	58(31.5)	84(45.7)	22(12)	9(4.9)	11(6)	3.92	1.081
Problem solving skills						**3.83**	**1.02**
I can create something new with technology	50(27.2)	92(50)	20(10.9)	15(8.2)	7(3.8)	3.89	1.021
I can collaborate with others to produce innovative output	47(25.5)	94(51.1)	22(12)	14(7.6)	7(3.8)	3.87	1.005
I can use some technologies to solve routine problems	46(25)	92(50)	25(13.6)	12(6.5)	9(4.9)	3.84	1.033
I can troubleshoot my device if the need be	41(22.3)	90(48.9)	31(16.8)	15(8.2)	7(3.8)	3.78	1.008
I frequently update my digital competence	40(21.7)	92(50)	27(14.7)	18(9.8)	7(3.8)	3.76	1.023
Grand Mean	**3.98**	**.996**					

Source: Researchers field work, 2022

Decision Rule: if mean is ≤ 2.99= low, 3.0-3.49=Average, 3.5-4.49=high, 4.5-5.0=very high

As presented in Table 2, the level of digital literacy of the students was high (grand mean=3.98, SD=.996). The result further revealed that the students' level of information literacy skills (mean=4.21), communication literacy skills (mean=4.05), content creation skills (3.82), safety skills (mean=3.98), and level of problem solving skills (mean=3.83) were high. The result also explains that under information literacy skills, the respondents indicated that they have the ability to browse online information that meets their information need (mean=4.21), download information for their work (mean=4.24), and save information they need (mean=4.27). They also indicated under communication literacy skills that they share content with others (mean=4.11), and they have the ability to observe basic rules when communicating with others (mean=4.08).

The respondents indicated that they can protect their reputation online (mean=4.05), and have the ability to vary their communication to suit their audience (mean=4.02). Under content creation skills, the respondents indicated that they can produce digital content (mean=3.89), and can explain how copyright applies to content (mean=3.89). On safety skills, the respondents indicated they can avoid cyber bullying (mean=4.05), and can take basic steps to protect their devices from malware threat (mean=4.04). They also indicated they can take steps to avoid online risks to their health (mean=3.99). The respondents equally indicated under problem solving skills that they can create something new with technology (mean=389), and can also collaborate with others to produce innovative output (mean=3.87). They also can use some technologies to solve routine problems (mean=3.84).

Discussion of findings

The level of digital literacy skills of library information science students in universities in South-West indicates that the students rated high in their level of digital literacy skills. It further revealed that the level of students' information literacy skills, communication skills, content creation skills, safety skills and problem solving skills was high. The result indicates that students have the ability to browse online information that meets their information needs, download information for their work, and have the ability to observe basic rules when communicating with others, use technologies to solve routine problems. This supports the finding of Eke,Omekwu and Agbo (2014), who discovered that individuals have such literacy skills which cut across the booting of computer system, logging in and logging out of the internet, using world wide web to find out information for academic purposes, saving files from a web page, use of various search engines in sourcing for academic materials, connecting to the internet, sending and receiving e-mail messages, downloading files from the internet and sending attachments with e-mail messages. This therefore implies that individuals can possess digital literacy. This finding also supports that of Also, Esh and Ghosh(2022) who found that the level of digital literacy skills of Library and Information Science students was high.

On the contrary, the finding of the study was not supported by the studies of Kaeophanuek et al (2018) whose study found that LIS undergraduates possessed intermediate digital literacy skill level. Their findings revealed that the students had access to digital resources but do not understand how to maximize the technology in the learning process. Likewise, the study the finding by Adeoye and Adeoye (2017) discovered that students possessed an average level of digital literacy skills which comprise using online works, and using media-capture devices. Other studies that disagree with this finding were that of Perdana, et al (2019) found that the digital literacy skill level of all the students was very low while Emiri (2015) found that the level of proficiency of digital literacy skills was moderate. This implies that LIS students in South –West universities have high digital literacy which could be because of the current deployment of electronic resources in schools and the application of technology to activities in society.

Conclusion

The level of digital literacy skills of Library and Information Science students was high, but not very high. The level of information literacy skills, communication literacy skills content creation skills, safety skills, problem solving skills was high but not very high. The students need to be more consciously involved in raising their level of information literacy skills, communication skills, content creation skills, safety skills, problem solving skills to ‘’very high’’ level.

Recommendation

1. Since the level of digital literacy skills of the student was found to be high, the universities faculties should leverage on this strength to enhance the teaching learning process by using the digital platforms to teach the students more often.

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