Digital Literacy and Informal Learning among Students: A Case of Students in Petroleum Training Institute, Delta State, Nigeria

Onome Norah Ekoko
Delta State University, Abraka, Nigeria
ORCID: 0000-0003-3228-3677

Received: 21st March, 2022 - Revised: 26th July, 2022 - Accepted: 10th October, 2022

DOI: https://dx.doi.org/10.4314/glj.v28i2.5

Abstract

Digital literacy is a set of 21st-century skills associated with the effective use of technology. This study investigated digital literacy skills of students and informal learning, a case of students of Petroleum Training Institute (PTI) in Effurun, Delta State, Nigeria. Five research questions guided the study. Adopting the descriptive survey research design, 220 students were accidentally selected from the population of students in the institution. The research design was survey and questionnaire served as the instrument for the collection of data. The finding revealed that the students in Petroleum Training Institute (PTI), Effurun engage in informal learning activities through social networking platforms, reading of web pages such as blogs and reports, reading of books, watching television programmes and taking online courses. They have moderate digital literacy skills and most of them make use of YouTube, WhatsApp group chat, Blogs, Wiki (Wikipedia), Twitter, Facebook groups, Google Talk (Hangouts), Pinterest, and Yahoo Answer. However, their extent of use of digital literacy tools in informal learning is low and they face challenges such as lack of familiarity with some digital literacy tools, limited internet access, high cost of data for surfing online, delay in downloading information from web browsers and difficulties when searching for the necessary materials.

Introduction

New technologies have significantly changed the way we engage in so many activities. This has facilitated changes in the otherwise traditional tasks are performed. One of such activity is learnings. With technology, learning can now take place anywhere, not only in classroom and organized setting but online and unsupervised formats. Known as informal learning, this learning is intent on offering ways of participating in academic activities without the usual restrictions that characterizes formal learning (Bull, Thompson & Searson, 2008). According to Lai and Smith (2018), with advancement in technologies, learning can occur anywhere. Whether in the classrooms as formal and coordinated set of activities or informally, driven purely by personal needs of time speed and convince. It is learning that requires learners to possess the skills to access, locate, extract, evaluate, organize and present digital information.

Digital literacy, includes all competencies necessary to use digital technology. This literacy is connected with handling digital technology while enabling individuals to perform information retrieval tasks and other related tasks in technology driven settings (Buckingham, 2006; Biradar & Naik, 2017). These skills have been identified as important and necessary for individuals to survive in the highly technological advanced educational settings. All forms of modern education are technology driven, which invariably implies that students participate in all learning activities. Today, digital skills have been seen to promote informal learning, distant learning, learning of foreign languages and learning many soft skills (Soltovets, Chigisheva, Dubover, 2019; MariaJose Masanet & Establés, 2019).

Informal learning requires a competency in information literacy, media literacy and digital literacy. Having adequate digital literacy skills have been

shown to positively influence on student performance (Tohara, Shuhidan, Bahry & Norazmi bin Nordin (2021). Students must adapt these technologies in their daily learning quest, not just use technologies for the fun of it but to gain something meaningful from using these technologies. Thus, gaining digital skills are mandatory so that students are comfortable when navigating and learning in informal environments.

Available literature shows that the adoption of digital media for learning in informal leaning environment in Nigeria, is still in its infancy due to inadequate digital skills (Ebele, Ejedafiru & Oghenetega, 2013). This, inadequate digital skill may have adverse effect on student's willingness to undertake informal learning. More recently, studies like that of Ogunbodede, Idubor, Odewusi and Aboma (2020) opined that although students use social media and other technologies, they rarely engage these technologies for learning, the authors had to recommend that libraries and managements of tertiary institutions should endeavor to teach students that these skills can be used to exploit the educational advantages of inherent on social media applications.

Thus, it may seem that some undergraduates are yet to take advantage of digital tools for learning informally. Using the students of Petroleum Training Institute (PTI), Effurun, Delta State, this paper is interested in digital literacy skills of students and their use digital tools in informal learning.

Research Questions

This study provided answers to the following research questions:

1. What informal learning activities are students in PTI, Effurun, Delta State, Nigeria. mostly engage in?
2. What digital literacy skills do students possess?
3. What digital literacy tools are commonly used by students?
4. To what extent do students in PTI use digital tools in informal learning?
5. What are the perceived challenges to the use of digital literacy tools for informal learning?

Literature Review

McGivney (1999) broadly described that informal learning is learning which occurs outside a structured learning environment. Usually triggered by activities and interests of individuals or groups. Informal learning environment also seen as learning which takes place away from a designated and formal environment. A learning, where learners set their own educational objectives. Informal learning has low degree of planning and structuring, learning support, time, and objectives (Kyndt & Baert, 2013). An important quality is, informal learning ensures that learners learn at their own speed (pace and style), select their own leaning content, decide how to learn it, where they want the learning to occur (online or a physical location) and with whom they want (Jahnke, 2013).

Put simply, digital literacy is understanding how digital technology functions and how it is effectively used. Sefton-Green, Nixon and Erstad (2019) explained that it is a phrase that describes our associations with technologies and their effect on our interaction with others. To be digitally literate is familiarity with varieties of practices that concern digital tools. It involves being able to create, share and efficiently communicate content in different formats. Digital literacy also includes knowing how and when digital appliances can best be used to support processes. Some visible traits that a digitally literate individual displays are critical thinking skills, information assessment skills, familiarity with common digital technologies, the Internet environment and data privacy issues (Nicholson, 2017). In explaining further, Biradar and Naik (2017), described a digital literate individual as one who is vast with using digital/media tools, to retrieve, evaluate and use information critically. It connotes ability an individual has that allows him/ her do assignments in a digitized environment (JonesKavalier & Flannigan, 2016). Explaining the concept further, Bira-Allen (2016) stated that it is a process that combines other literacies. One which relies on knowledge literacy, Internet literacy and web literacy. All mentioned literacies are important and necessary for digitalization. Hence, these skills make individuals digitally literate. Being regarded as essential skills, which ensure that individuals successfully navigate and work online (Nicholson, 2017).

Their importance and need have been investigated by numerous authors in the recent years. Solomon, Jarkko Ade and Mike (2016) investigated students' experiences with mobile learning, in Nigeria, here, they found students in Enugu use different devices for educational activities and purposes which include sending messages, taking part in educational games, social learning, reading e-books and pdfs documents, engaging in assignments and partaking in quizzes. Undergraduates of Federal Universities in Southwest, Nigeria in a survey admitted to being confident of their information literacy skills and their

media literacy skill which allowed them to efficiently use media tools to capture pictures and record videos. The students were also confidently avoiding plagiarism when writing online (Adeoye & Adeoye, 2017).

In a similar research on digital literacy skills UNN students, Ukwoma, Iwundu and Iwundu (2016) reported that, some students expressed significant digital skills which enabled them to improve their literature search proficiency (95.1%), create documents with Microsoft word (85.3%), effectively communicate using e-mail (84.2%), identify information sources (83.7%), use information retrieval systems (79.3%), evaluate online information (76.1%), make graphic presentation (73,9%) and bookmark relevant websites (69%). Rahman, Ariawan and Pratiwi (2020) surveyed digital literacy ability of students employing quantitative approach with a survey method. They found that students digital literacy competencies were at an average level. The students expressed inability towards some aspects such as including valid references in their work. Regarding hardware use, students used applications that support distance learning activities. According to a Thai University investigation by Kaeophanuek, Na-Songkhla, and Nilsook (2018) on students' opinions on digital literacy skills for teaching and learning, they felt they had good capabilities using digital tools while their information and digital transformation skills were felt to be at the intermediate level.

Ogunbodede, Idubor, Odewusi and Aboma (2020) stated that students widely used social media. WhatsApp and Facebook are the two social media networks mostly used by students for academic purposes. Wickramanayake and Muhammad (2018), posited that students are seen to widely use mobile phones to access social media, entertainment and communication among themselves and for education purpose and in the process enhanced their different digital skills.

Most Vietnamese students have digital facilities both at home and within their institutions and could use these for learning English language. In addition, they were adequately aware and their attitudes toward of digital literacy technologies are positive however, their technological competencies were between low and average (Nguyen & Habók, 2022). Similarly, Tohara, Shuhidan, Bahry & Norazmi bin Nordin (2021) reported that, while digital literacy model helps facilitate teaching and improve learning, students in Malaysia still struggled with carrying out studies in digital environment because of limited skills.

An investigation in Ambrose Alli University by Oyeyemi (2021) on postgraduate students' acquisition of digital skills that could facilitate access to electronic databases revealed that most strongly indicated using ERIC, Science Direct, EBSCOHost, Agora, GOALI and HINARI databases. However, 171(65.0%) lacked personal abilities to determine and respond to security issues regarding web-based activities; 168(63.9%) were inadequacy equipped to construct search strategies for locating information in a digital environment. Furthermore, use of Smartphones (100%), Laptops (84.8%), and desktop computers (82.1%) as the dominant digital devices used to access electronic databases. The author recommended that student's digital skills should be improved upon. With majority of work on digital literacy have focused on use of technologies and skills of students is an indication that a good portion of students are proficient in one way or the other in their digital literacy skills. However, none of the studies reviewed looked into using these skills in informal learning. This study intends to fill this gap.

.

Methodology

The study is a descriptive survey research design. The population is 2461 students from the Petroleum Training Institute, Delta State, Nigeria. The study used a sample size of 246, consisting of 10% of the total population. A questionnaire titled, "Digital Literacy and Informal Learning Questionnaire" (DLILQ) was self-constructed by the researcher. Permission to undertake the study was sought and got from the Student Affairs Division of the Institution. The study adopted the accidental sampling technique in distributing the research instrument to students only within the school. A total number of 246 questionnaires were distributed within two days and 220 were retrieved. Simple percentage and Mean were used to analyze the data.

Results

Table 1: Biodata of Students

Gender	No of Students	Percentage (%)
Male	100	45.5%
Female	120	54.5%
Age		
16 – 20 years	66	30
21 – 25 years	132	60
26-above years	22	10
Total	220	100

Table 1 shows biodata of the students. 100 (45.5%) are males and 120 (54.5%) are females. This implies that females respondents are more. 66 (30%) are between 16 – 20 years; 132 (60%) are between ages 21 – 25 years; while, 22 (10%) are ages 26-above years. Thus, respondents between ages 21 – 25 years are more.

Answering of Research Questions

Research Question One

What informal learning activities are students in PTI, Effurun, Delta State, Nigeria. mostly engage in?

Table 2: Informal Learning Activities of Students

Activities	Agree	Disagree	Ranking
Social Networking	198 (90%)	22 (10%)	**1st**
Reading webpages (e.g. blogs, reports)	189 (86%)	31(14%)	**2nd**
Reading books	186 (84.5%)	34 (15.5%)	**3rd**
Watching television programmes	148 (67%)	72 (33%)	**4th**
Online courses	144 (65.5%)	76 (%)	**5th**
Watching documentaries	112 (51%)	108 (49%)	**6th**
Participating in games	112 (51%)	108 (49%)	**6th**
Participating in team building activities in religious centers	106 (48.1%)	114 (52%)	**8th**
Participating in Games and Simulations	101 (46%)	119 (54%)	**9th**
Self-Study/Self-directed learning	92 (42%)	128 (58%)	**10th**
Self-Study/Self-directed learning	92 (42%)	128 (58%)	**10th**
Participating in forums	77 (35%)	143 (65%)	**12th**
Conferences and Seminars	76 (34.5%)	144 (65.5%)	**13th**
Participating in coaching sessions	65 (29.5%)	155 (70.5%)	**14th**
Participating in Podcasts	51 (23.1%)	169 (77%)	**15th**
Reading newspapers and/or magazine articles	41 (18%)	179 (81.3%)	**16th**
Writing on the web	30 (14%)	190 (86.3%)	**17th**
Participating in book Club	14 (6.3%)	206 (93.6%)	**18th**
Participating in chat rooms	0 (0%)	220 (100%)	**19th**

Table 2 shows the informal learning activities students mostly engage in. From the ranking and with a score of 90%, 198 students mostly engage in informal learning through social networking platforms. Next is informal learning through the reading of web pages such as blogs and reports 189 (86%) and reading of books 186 (84.5%). Students also learn informally by watching television programmes 148 (67%) and taking online courses 144 (65.5%). The least activity they engage in is, participating in book clubs 14 (6.3%) while none of participated in chat room discussions.

Research Question Two:

What digital skills do the students have?

Table 3: Digital Skills of Students

I can comfortably do the following:	Agree	Disagree	Ranking / Level
Join social networks groups such as WhatsApp, LinkedIn, Facebook, etc.	204 (79.09%)	16 (7.2%)	**1st High**
Make video calls via the Internet	203(92.2%)	17 (8%)	**2nd High**
Share resource with other colleagues online	196 (93%)	24 (11%)	**3rd High**

I can comfortably do the following:	Agree	Disagree	Ranking / Level
Network with others via computers	193 (88%)	27 (12.2%)	**4th High**
Navigate webpages and use links	191(87%)	29 (9.5%)	**5th High**
Create and communicate digital information effectively	174 (79%)	46 (29%)	**6th High**
Upload/download text, video, audio and graphics.	172(78.1%)	48 (22%)	**7th High**
Use an email	154 (70%)	66 (30%)	**8th High**
Understand security risks and protect personal information	154(70%)	66 (30%)	**8th High**
Use digital devices (laptops, smartphones, ipads, desktops)	128 (54.5%)	92 (42%)	**9th High**
Protect computer from actions such as spam, viruses, and spyware that can cause harm	119(54%)	101 (46%)	**10th High**
Engage in online communities	113 (51.3%)	107 (49%)	**11th High**
Participate in creation and knowledge sharing	106(48.1%)	114 (52%)	**12th Low**
Use and create digital image.	101(46%)	119 (54%)	**13th Low**
Be part of online tutorials.	98 (44.5%)	122 (55.4%)	**14th Low**
Comment in blogs, forums or web pages	92(42%)	128 (58.1%)	**15th Low**
Navigate Google Scholar and other databases properly	91 (41.3%)	129 (59%)	**16th Low**
Bookmark and share web pages	89(40.5%)	131 (59.5%)	**17th Low**
Use advanced search options to refine search	76 (34.5%)	114 (52%)	**18th Low**
Evaluate websites	65(29.5%)	155 (70.4%)	**19th Low**
Find and evaluate online information	58 (26.3%)	162 (74%)	**20th Low**

The result in Table 3 shows the digital skills possessed by students. A close look shows that of the 20 items on the Table, 12 of the are above 50% score, hence, student's level of digital literacy skills is moderate. Specifically, majority, 204 (79.09%) of them belong to social networks like WhatsApp, LinkedIn, Facebook, 203(92.2%) make Internet video calls, share resource with other colleagues online 196 (93%) and network with others via computers 193 (88%). Others can move around web pages and use links 191(87%) and create and communicate digital information effectively 174 (79%). Ranking 20th, 19th and 18th indicates that students lack skills in finding and evaluating online information 58 (26.3%), evaluate web sites, 65(29.5%) and use advanced search options to refine search 76 (34.5%) respectively.

Research Question Three

What digital literacy tools are commonly used by students?

Table 4: Digital Literacy Tools

Tools	Agree	Disagree	Ranking
YouTube	200 (90.91%)	20 (9.09%)	1st
WhatsApp group chat	200 (90.91%)	20 (9.09%)	1st
Blogs	196 (89.09%)	24 (10.91%)	3rd
Wiki (wikipedia)	194 (88.18%)	26 (11.82)	4th
Twitter	188 (85.5%)	32 (14.5%)	5th
Facebook groups	186 (845%)	34 (15.5%)	6th
Google Talk (Hangouts)	168 (74.36%)	52 (23.64%)	7th
YahooAnswer	158 (71.82%)	62 (28.18)	8th

Tools	Agree	Disagree	Ranking
Instagram	154 (70%)	66 (30%)	9th
Pinterest	146 (66.36%)	74 (33.64)	10th
Friendster	31 (14.09%)	189 (85.90%)	11th
MSN Messenger (Skype)	30 (13.64%)	190 (86.36%)	12th
LinkedIn	20 (9.09%)	200 (90.91%)	13th
WordSift	14 (10.91)	206 (89.09%)	14th
Lingro	0 (0%)	220 (100%)	15th
MySpace	0 (0%)	220 (100%)	15th
Piktochart	0 (0%)	220 (100%)	15th
Pixton	0 (0%)	220 (100%)	15th
Thinglink	0 (0%)	220 (100%)	15th
Tween Tribune	0 (0%)	220 (100%)	15th

Table 4 shows the digital tools students use. Majority use YouTube and WhatsApp group chat 200 (90.91%). Blogs ranked 3rd with 196 (89.09%), Wiki (Wikipedia) ranked 4th with 194 (88.18%), while Twitter with 188 (85.5%), Facebook groups 186 (845%), Google Talk (Hangouts) 168 (74.36%) and Pinterest with 146 (66.36%) ranked 5th, 6th and 7th respectively. The least used tools are, Lingro, MySpace, Piktochart, Pixton, Thinglink and Tween Tribune with 0 responses respectively.

Research Question Four

To what extent do students in PTI use digital tools in informal learning?

Table 5: Extent of Use of Digital Tools in Informal Learning

I often use digital literacy tools to:	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed	Mean
Augment my classroom studies	56 (25%)	92 (41%)	30 (13%)	42 (21%)	2.73
Recognize appropriate reference sources needed	14 (6.3%)	46 (21%)	77 (35%)	83 (37.7%)	1.95
Identify information that best meet my learning needs	49 (22.2%)	43 (19.5%)	68 (31%)	60 (27.3%)	2.36
Facilitate my literature search	56 (25.4%)	73 (33.3%)	55 (25%)	36 (16.3%)	2.67
Initiate search strategies using keywords	33 (15%)	37 (17%)	61 (28%)	89 (40%)	2.06
Determine information gateways	21 (9.5%)	32 (14.5%)	62 (28.3%)	105 (47.7%)	1.85
Decide where to find information using digital skills	11 (5%)	46 (21%)	68 (31%)	95 (43%)	1.87
Aggregate Mean					**2.21**

Criterion Mean: 2.50

Table 5 presents the extent of use of digital tools in informal learning by students in PTI. With an aggregate mean of 2.21, indicates that students use of digital tools for learning informally is low. Individual items shows that only two items have mean scores of above 2.50. Use for digital literacy tools to augment classroom studies (2.73), while to facilitate literature search in informal learning (2.67). The implication is that students do not highly make use of digital tools in informal learning.

Research Question Five

What are the perceived challenges to use of digital tools for informal learning among students in Petroleum Training Institute (PTI), Effurun?

Table 6: Perceived Challenges to the Use of Digital Tools among Students

Challenges	Agreed	Disagreed
Lack of interest in informal learning activities	102 (46.6%)	118 (53.64%)
Inadequate operational skills	62 (28.1%)	158 (71.82%)
Lack of awareness of digital literacy tools	32 (14.5%)	188 (85.5%)
Lack of familiarity with most digital literacy tools	196 (90%)	24 (11%)
Limited access Internet	186 (84.5%)	34 (15.5%)
High cost of data for surfing online	168 (74.6%)	52 (23.4%)
Inadequate information retrieval skills	57 (26%)	163 (74%)
Lack of interest in using digital tools for assessing information	82 (37%)	138 (63%)
Inability to study without assistance,	83 (37%)	137 (63%)
Inability to filter the numerous search results among several results	73 (33.1%)	147 (67%)
Delay in downloading information from web browsers	158 (72%)	62 (28%)
Difficulties in searching for the necessary material	158 (72%)	62 (28%)

The result in Table 6 shows that 196 (90%) of the respondents indicated lack of familiarity with most digital literacy tools, 186 (84.5%) indicated limited internet access, 168 (74.6%) indicated high cost of data for surfing online; while, 158 (72%) indicated delay in downloading information from web browsers and difficulties in searching for the necessary materials as the challenges facing digital literacy tools usage for informal learning among students in Petroleum Training Institute (PTI), Effurun.

Discussion of Findings

Students in PTI engage in some informal learning activities. They mostly engage in informal learning through social networking platforms, reading of web pages like, blogs and reports, reading of books, watching television programmes and taking online courses. This finding is in agreement with Solomon, Jarkko Ade and Mike (2016) that in Enugu, students use different mobile devices for educational activities like, sending messages, taking part in educational games, social learning, reading e-books and pdfs documents, engaging in assignments and partaking in quizzes.

The second research question was on the skills that PTI students have. The result showed that most students make use of social networks like WhatsApp, LinkedIn, Facebook, make video Internet video calls, share resource with other colleagues online and network via computers. They can navigate web pages following links and effectively create and communicate digital information. They are however not skilled in finding and evaluating online information, evaluating web sites and using advanced search options to refine your search respectively. Overall, PTI students have a moderate level of digital literacy skills. This is corroborating Rahman, Ariawan and Pratiwi (2020) finding that the digital literacy abilities of students to be at an average level. The students expressed inability towards some aspects such as including valid references in their work. Regarding hardware use, students use applications that support distance learning activities.

Most students use digital tools like YouTube and WhatsApp group chat, blogs, Wiki (Wikipedia),

Twitter, Facebook groups, Google Talk (Hangouts) and Pinterest. The least used tools include Lingro, MySpace, Piktochart, Pixton, Thinglink and Tween Tribune. This finding agrees with Ono, Chiaghana and Okeke (2021), that Unizik students' perceptions towards YouTube is positive because it is a useful and important source of information. Burlington, (2016), in support of the above finding revealed that: "YouTube is most popular and most accepted tool for online video sharing, because it hosts millions of instructional, educational entertainment and recreational videos which are very useful learning in informal settings.

With an aggregate mean of 2.21, students in Petroleum Training Institute use of digital tools in informal learning is low. This implies that although students have digital skills, they are not using them for learning informally. According to Usaini, Okorie, Chinenye & Oyedepo (2019), the availability of computers and the Internet is widespread, yet how and why people use digital tools has been called the "second-level digital divide. In addition, lack of familiarity with most digital literacy tools, limited internet access, high cost of data for surfing online, downloading delays and difficulties in searching for the necessary materials were reported as the perceived challenges.

Conclusions

Like most 21st Century students, PTI students, engage in very few informal learning activities. They have moderate digital skills and mostly use digital tools like YouTube, WhatsApp group chat, Blogs, Wiki (Wikipedia), Twitter, Facebook groups, Google Talk (Hangouts), Pinterest, and YahooAnswer. The PTI students are unfamiliar with Lingro, MySpace, Piktochart, Pixton, Thinglink and Tween Tribune. Their extent of use of digital tools in informal learning is low. Challenges include, lack familiarity with some of the digital tools, limited internet access, high cost of data for surfing online, downloading delays and difficulties in searching for the necessary materials are the challenges encountered.

Recommendations

In view of the findings the study recommends the following.

(i) Through adequate and relevant library information literacy sessions, libraries can encourage students to participate in informal learning

(ii) Lecturers also, can stimulate students' interest in informal learning activities by given assignments that will require independent research.

(iii) Lecturers on their part should create blogs, twitter account or Facebook account for their various courses so that students can be more familiar with informal learning environments.

(iv) Libraries should do more to equip students to have the needed skills in finding and evaluating online information, evaluating web sites and using advanced search options to refine your search.

(v) The Institutes management should endeavor to provide access to internet at little or no cost for students on campus.

References

Adeoye, A.A., & Adeoye, B.J. (2017). Digital literacy skills of undergraduate students in Nigeria universities. Library Philosophy and Practice (e-journal). https://digitalcommons.unl.edu/libphilprac/1665.

Bira-Allen, J.V. (2016). Developing digital literacy skills through guided reading instruction, The Florida Reading Journal, 51(1), 16–20.

Biradar, K., & Naik, K.G.J. (2017). Digital literacy skills and competencies among the research scholars and PG students of Deemed University Libraries, Bangalore: A Study. Journal of Advances in Library and Information Science, 6(3), 252-257.

Buckingham, D. (2006). Defining digital library: what people need to know about digital media? Digital Kompetanse, 4(1), 263 -276.

Bull, G., Thompson, A., Searson, M. (2008). Connecting informal and formal learning: experiences in the age of participatory media. Contemporary Issues Technol Teach Educ, 8(2), 100-107.

Cain, J. & Policastri, A. (2011). Instructional design and assessment: Using Facebook as an informal learning environment. American Journal of Pharmaceutical Education. 75 (10), 1-8.

Jahnke, I. (2013). Informal learning via social media-preparing for didactical designs. In Tokar, A., Beurskens, M., Keuneke, S., Mahrt, M., Peters, I., Puschmann, C., van Treeck, T., & Weller, K. (Eds.). (2013). Science and the Internet. 59-72. Düsseldorf: Düsseldorf University Press.

Jones-Kavalier, B., & Flannigan, S. L. (2008). Connecting the digital dots: Literacy of the 21st century. Teacher Librarian, 35(3), 13-16.

Kaeophanuek, S., Na-Songkhla, J., & Nilsook, P. (2018). How to enhance digital literacy skills among information sciences students. International Journal of Information and Education

Technology, 8(4), 292-297.

Kyndt, E., & Baert, H. (2013). Antecedents of employees' involvement in work-related learning: A systematic review. Review of Educational Research, 83(2), 273-313. Retrieved from https://doi.org/10.3102/0034654313478021

Maria-Jose Masanet, M.G., & Establés, M. (2019). From digital native to digital apprentice. A case study of the transmedia skills and informal learning strategies of adolescents in Spain. Learning, Media and Technology, 44(4), 400-413. DOI: 10.1080/17439884.2019.1641513

McGivney, V. (1999). Informal learning in the community: trigger for change, Leicester: National Institute for Adult Continuing Education.

Nicholson, K. (2017). Learning from international library practice. In Innovation in Public Libraries. London: Elsevier. https://www.sciencedirect.com/book/9780081012765/innovation-in-public-libraries#book-description

Nguyen, L.A.T., & Habók, A. (2022). Digital literacy of EFL students: An empirical study in Vietnamese Universities. Libri, 72(1), 53-66. https://doi.org/10.1515/libri-2020-0165

Ogunbodede, K.F., Idubor, I., Odewusi, O.O., & Aboma, G. (2020). Effects of social media usage on academic activities of undergraduate students of University of Africa, Toru-Orua, Bayelsa State, Nigeria. Journal of Computer Science and Technology Studies, 2(1), 1–08. https://al-kindipublisher.com/index.php/jcsts/article/view/40

Ono, G.N., Chiaghana, C.A., & Okeke, A.O. (2021). Investigating information usefulness of YouTube among select UNIZIK students. Nnamdi Azikiwe University Journal of Communication and Media Studies, 2(1), 1.13. DOI: doi.org/10.47851/naujocommed.v2i1.113.

Oyeyemi, O.O. (2021). Digital literacy skills and use of electronic databases by postgraduate students: A case study. Journal of Library and Information Science, 15(3), 162-172. DOI: 10.5958/0975-6922.2021.00018.8.

Rahman, V.A., Ariawan, N., Pratiwi, I.M. (2020). Digital literacy abilities of students in Distance Learning. Advances in social science, education and humanities research, 509. 4th International Conference on Language, Literature, Culture, and Education (ICOLLITE). Retrieved from https://www.atlantis-press.com.

Sefton-Green, J., Nixon, H., & Erstad, O. (2019). Reviewing approaches and perspectives on "Digital literacy". Pedagogies, 4(2), 107-125.

Seo, K. (ed.) (2012). Using Social Media Effectively in the Classroom: blogs, wikis, twitter, and more. New York: Routledge.

Shopova T. (2014). Digital literacy of students and its improvement at the university. Journal on Efficiency and Responsibility in Education and Science, 7(2), 26-32. doi 10.7160/eriesj.2014.070201.

Snelson, C. (2011). YouTube across the Disciplines: A Review of the Literature. MERLOT Journal of Online Learning and Teaching, 7, 159-169.

Solomon, S.O., Jarkko, S., Ade, S., Mike, J. (2016). Discovering students mobile learning experiences in higher education in Nigeria. Conference: 2016 IEEE Frontiers in Education Conference (FIE). DOI:10.1109/FIE.2016.7757541.

Soltovets, E., Chigisheva, O., & Dubover, D. (2019). Foreign language e-course as informal learning tool for digital literacy development. Dilemas Contemporáneos: Educación, Política y Valores, 6(3), 1-15. https://web.s.ebscohost.com.

Strangelove, M. (2010). Watching YouTube: Extraordinary Videos by Ordinary People, Toronto, University of Toronto Press.

Tohara, A.J.T., Shuhidan, S.M., Bahry, F.M., Norazmi bin Nordin, M. (2021). Exploring digital literacy strategies for students with special educational needs in the digital age. Turkish Journal of Computer and Mathematics Education (TURCOMAT), 12(9), 3345-3358. DOI: https://doi.org/10.17762/turcomat.v12i9.5741.

Ukwoma, S.C., Iwundu, N.E. & Iwundu, I.E. (2016). Digital literacy skills possessed by students of UNN, implications for effective learning and performance: A study of the MTN Universities Connect Library. New Library World, 117(11/12), 702-720. https://doi.org/10.1108/NLW-08-2016-0061.

Usaini, S., Okorie, N., Chinenye, E., & Oyedepo, T. (2019). Internet, Youtube and Informal Learning among Undergraduate Students. International Journal of Education and Information Technologies. 13, 1–5.

Wickramanayake, L., & Muhammad, J.S. (2018). Social media use by undergraduate students of education in Nigeria: A survey. The Electronic Library, 36(1), 21-37. https://doi.org/10.1108/EL-01-2017-0023

Corresponding Author
Onome Norah Ekoko
onekoko@delsu.edu.ng
onomealakpodia@gmail.com