Digital Literacy Skills and Academic Engagement of Library and Information Science Students in Universities in South-West, Nigeria

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Abstract

The study examined the influence of digital literacy skills on students' academic engagement. The study population was 395 final year Library and Information Science (LIS) students in three (3) selected universities accredited to offer Library and Information Science and allied courses in South-West, Nigeria. A sample size of 199 was determined using Taro Yamane's (1973) formula. Stratified random sampling was used to select the respondents who participated in the study. A structured and validated questionnaire was used for data collection. The study found that digital literacy skills had positive and significant influence on academic engagement of undergraduates. Therefore, the study recommended that the university management, during student orientation programme, should emphasise the conscious effort students themselves must make to take charge of their academic life. The universities should use digital platforms as much as possible for the delivery of teaching-learning processes.

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Introduction

The concept of academic engagement has to do with students' active participation, involvement in and commitment to their school work. This is central to the acquisition of knowledge and skills for good performance, prevention of failure and dropping out of school. Academic engagement is the cognitive, behavioural, emotional involvement and commitment of students to their school work. The cognitive dimension of academic engagement refers to students expending mental efforts to learning activities so as to understand the concepts, writing of paper-based or computer-based tests and examinations. It shows in the students' use of skills and resources in their participation in school work and the process of attending to assignments and learning experiences (Ekici & Ekici, 2021). Behavioural dimension involves students' effort, persistence, attention, participation and involvement in academic activities such as going to school, joining the class on time, participating in class during lecture, relating with school mates and doing homework on time (Akyol & Erdem, 2021). Emotional dimension has to do with attentiveness, happiness, eagerness, weariness and other emotive states which have influence on students' participation with learning (Pillai, Bolong, Osman & Hashim, 2021).

In recent times, it has been observed that lack of maximum commitment on the part of students who appear unable to study without supervision has led to poor learning, low standard of academic work, inability to manage time, lack of self-direction and lack of needed skills for academic activities. The twenty-first century education and the Covid-19 pandemic have necessitated that most academic institutions migrate teaching and learning delivery processes from analogue to digital platforms. This has also made imperative the acquisition of adequate digital literacy skills by students in order to participate actively in their academic work. Extant studies have revealed that digital literacy skills have positive impact on academic engagement (Adeoye & Adeoye, 2017; Mahdiuon, Salimi & Raeisy,2020).

However, some students do not have the digital skills needed to be able to function in digital educational contexts (Leahy & Dolan 2010; Heerwegh, DeWit & Verhoeven, 2016; Bergdahl, Nouri & Fors, 2020). Previous studies were largely done in the Western countries. For example, Bergdahl, Nouri and Fors (2020), Mahdiuon, Salli and Laleh, (2020), Limniou,Varga-Atkins, Hands and Elshamaa (2021), and to the researcher's knowledge, there is paucity of similar empirical studies focusing on Nigerian students and specifically Library and Information Science students in universities in South-West, Nigeria. The study is anchored on Astin's model of student involvement, which later became a theory. The theory, according to Binti, Fadhilah, and Anuah (2018) explained that the theory of involvement emphasizes active participation of the students in the learning process. Therefore, institutions are encouraged to focus less on what they do and focus more on what the students do, how motivated the students are and how much time as well as energy they devote to the learning process (Astin, 1984).

Objective
The objective of this research is to ascertain the influence of digital literacy skills on academic engagement of Library and Information Science students in universities in South-West, Nigeria.

Research Hypotheses
The following null hypotheses which guided the study were tested at 0.05 level of significance:
H01: Digital literacy skills have no significant influence on academic engagement of Library and Information Science students in universities in South-West, Nigeria.

H02: The components of digital literacy skills (information literacy skills, communication literacy skills, content creation skills, online safety skills and problem solving skills) do not have significant individual effect on academic engagement of Library and Information Science students in universities in South-West, Nigeria.

Literature Review

Extant literature is inconsistent in its report of findings on the influence of digital literacy skills' on academic engagement. For example, Hinds (2019) reported that, through the use of digital tools in and outside the classroom, students showed a high level of engagement .This implies that digital literacy skills supported students in their academic engagement. In the light of these findings, Kim, Hong and Song (2019) emphasized the importance of digital skills to perform academic work in the university e-learning environment. According to European Commission (2014), such skills include information literacy skills, communication skills, content creation skills, problem solving skills and safety skills.

Oriogu (2021) investigated information literacy skills on academic performance of first year students and it was revealed that there was a significant relationship between information literacy skills and academic performance of students which is as a result of academic engagement of the students (Rajabelee, Santally & Rennie, 2019). In another study, Fosnacht (2020), Yebowaah and Sanche (2021) found that information literacy skills have influence on academic engagement. Asrar, Tariq and Rashid (2018) discovered that communication literacy skill had a positive relationship with the students' academic engagement. Furthermore, Manu, Ying, Oduro and Boateng (2021) found that social media usage which involves content creation and interaction has a significant influence on academic engagement. Amerstorfer and Münster-Kistner (2021) revealed that during the problem-solving processes, students develop knowledge and skills beyond the subject matter, which demands a high degree of engagement of individuals. It then implies that problem solving skill has influence on academic engagement of students.

Tatiana, Kobicheva, Tokareva and Mokhorov (2022) carried out a study and found that the influence of safety skill on students' engagement and academic performance is particularly visible in the online educational environment. It then implies that safety skill is more relevant for online behaviour than academic engagement.

On the other hand, Bergdahl, Nouri and Fors (2020) contended that students who had high level of digital literacy skills were most often disengaged from academic activities. Based on a comparison of low and high performance of students, studies revealed that students with low performance spent more time using digital technologies than students with high performance (Hietajärvi, Salmela-Aro, Tuominen, Hakkarainen & Lonka, 2019). The average and low-performing students used digital technologies to escape a class when they found it to be boring, hence their disengagement from academic activities (Bergdahl, Nouri & Fors, 2020). Omiunu (2017) noted that students used information and communication technologies for activities outside school better than school related and academic activities and that the more students utilize ICT such as mobile technologies for non-academic purposes, the less they become engaged in academic activities. In essence, the literature shows that the effects of digital literacy skills on academic engagement can be positive and negative. In essence, from extant literature, it can be deduced that the effects of digital literacy skills on academic engagement can be positive and negative.

Methodology

The study adopted the survey research design. The study population comprised 395 final year Library and Information Science (LIS) students in the three universities in South-West, Nigeria., A sample size of 199 was determined using Taro Yamane's (1973) formula. Stratified random sampling technique was used to select the participants. A structured questionnaire was used for data collection. The instrument was validated for face validity, content and construct validity. Kaiser-Meyer-Olkin (KMO) indices for all variables were found to be greater than 0.5 and less than 1 and Bartlett's Test of Sphericity was less than 0.05. To ensure the reliability of the instrument, a pilot study was conducted at Ambrose Ali University, Ekpoma located in the South-South Zone of the country using 30 copies of the instrument. Cronbach's alpha reliability coefficient for digital literacy skills, and academic engagement were 0.954, and 0.920 respectively. The return rate was 93%. The data was analysed using descriptive statistics, simple and multiple linear regression.

Results

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

Test of Hypotheses

Hypothesis 1: Digital literacy skills have no significant influence on academic engagement of Library and Information Science students in universities in South-West, Nigeria.

Table 3: Influence of digital literacy skills on academic engagement

Variables	*B*	*Std. Error*	*Beta (β)*	*T*	*P*	*R^2*	*Adj. R^2*	*ANOVA (Sig)*
Constant	48.297	6.166		7.832	0.000	0.236	0.232	.000
Digital Literacy Skills	0.457	0.061	0.486	7.500	0.000			
Dependent Variable: academic engagement								
R=.486								
F=56.244								
Df= 1, 182								

The result presented in table 3 shows the influence of digital literacy skills on academic engagement of Library and Information Science students in universities in South-West, Nigeria. The result revealed P=0.000, R^2 = .236, β = .486, t = 7.500, DF= 1, 182, ANOVA (F) =56.244. With P <0.05, the p-value of 0.000 signifies that there is a positive and significant influence of digital literacy skill on academic engagement of library and information science students in universities in South-West, Nigeria. Also, the R square of 0.236 signifies that 23% of the variation in the dependent variable (academic engagement) is explained (predicted) by the independent variable (digital literacy skills). The standardized coefficient of Beta (β) = 0.486

signifies that the relationship between the predictor (digital literacy skills) and the dependent (academic engagement) variables is strong and significant.

This result showed that digital literacy skills have positive and significant influence on academic engagement of Library and Information Science students in universities in South-West, Nigeria. Therefore, the null hypothesis that Digital literacy skills will not significantly influence academic engagement of library and information science students in universities in South-West, Nigeria is hereby rejected and the alternate hypothesis that digital literacy skills influences academic engagement of Library and Information Science students in universities in South-West, Nigeria is accepted. The implication of this result is that digital literacy skills, such as Information literacy skills, communication literacy skills, and problem solving skills, were found to have a significant influence on academic engagement of the student; while content creation skills, and safety skills did not have any significant influence on the academic engagement of library and information science students in universities in South-West, Nigeria. With this result, digital literacy skills should be used more for better academic engagement by the students.

Hypothesis 2: The components of digital literacy skills (information literacy skills, communication literacy skills, content creation skills, and online safety skills and problem solving skills) do not have significant individual effect on academic engagement of Library and Information Science students in universities in South-West, Nigeria.

Table 4: Relative influence of digital literacy skills on academic engagement

Variables	B	T	Sig.	R^2	F(df)	ANOVA (Sig.)
(Constant)	53.122	8.691	0.000	0.236	56.244 (1,182)	0.000
Information Literacy Skills	0.292	2.622	0.009			
Communication Literacy skills	0.269	2.370	0.019			
Content creation skills	0.040	0.387	0.699			
Safety Skills	0.124	1.123	0.263			
Problem Solving skills	0.408	3.586	0.000			

Dependent variable: Academic engagement

The result presented in Table 4shows the relative influence of digital literacy skills on academic engagement of Library and Information Science students in universities in South-West, Nigeria. The result revealed that all indicators of digital literacy skills ($R^2 = 0.306$, $F(5,178) = 15.723$, $P = < 0.05)$ had significant influence on academic engagement of students. This implied that the model could account for 30.6% of the changes in the academic engagement of the students. On the contributions of the indicators of digital literacy skills, the result further revealed that Information literacy skills ($\beta = -0.292$, $t = -2.622$, $p < 0.05$), communication literacy skills ($\beta = 0.269$, $t = 2.370$, $p < 0.05$), and problem solving skills ($\beta = 0.408$, $t = 3.586$, $p < 0.05$), were

found to have a significant influence on academic engagement of the student; while content creation skills (β = .458, t = 2.756, p > 0.05), and safety skills (β=0.124, t= 1.123, p > 0.05) did not contribute to the academic engagement of the students.

Discussion of Findings

The first hypothesis formulated in this study investigated the influence of digital literacy skills on academic engagement of Library and Information Science students in universities in South-West, Nigeria. The result showed that digital literacy skills had positive influence impact on academic engagement. This position supports the findings of Ukwoma, Iwundu and Iwundu (2016) and Kim, Hong and Song (2018) that students' possession and use of digital skills influenced their academic engagement. However, Bergdahl, Nouri and Fors (2020) found that digital literacy skills do not have a significant effect but a negative correlation on academic engagement which leads to low level of academic performance.

The second hypothesis was formulated to test the relative influence of digital literacy skills on academic engagement of Library and Information Science students in universities in South-West, Nigeria. The result revealed that information literacy skills, communication skills, and problem solving skills have significant influence on academic engagement of students, but content creation skills and safety skills did not contribute to academic engagement.

The above finding on information literacy skills and academic engagement aligns with that of scholars such as Rajabelee, Santally and Rennie (2019), Fosnacht (2020), Yebowaah and Sanche (2021) and Oriogu (2021). Also, there is an agreement between the finding of Asrar, Tariq and Rashid (2018) and the current study that communication literacy skills have a positive relationship with the students' academic engagement. Concerning the relationship between communication skills and academic engagement, Sabbah, Hallabieh and Hussein (2020) found that the university students had attained high level of communication literacy skills (listening, speaking, and understanding) which influenced the emotional component of their academic engagement. Regarding the relationship between problem-solving skill and academic engagement, there is a point of convergence between the finding of this current study and that of scholars such as Amerstorfer and Münster-Kistner (2021) which revealed that during the problem-solving processes, students develop knowledge and skills beyond the subject matter which demands a high degree of academic engagement of individuals. It then implies that problem- solving skills have influence on academic engagement of students.

The finding of this study that digital content creation and safety skills did not contribute to academic engagement does not agree with extant literature. For instance, Moonaghi and Shariati (2018) revealed that the performance of students which is as a result of academic engagement depends on content and knowledge creation. Similarly, Manu,Ying, Oduro and Boateng (2021) found that content creation and interaction on social media has a significant influence on academic engagement. On the relationship between safety skills and academic engagement, the finding of this study that safety skills did not contribute to academic engagement contradicts the finding of Tatiana, Kobicheva, Tokareva and Mokhorov (2022) who concluded that the influence of safety skill on students' engagement and academic performance is particularly visible in the online educational environment. It then implies that safety skill is more relevant for online

behaviour than for academic engagement. Another study by Khlaif, Salha and Kouraichi (2021) found that students' digital privacy was threatened and this negatively influenced their academic engagement. Students' safety skill was found to be low such that they could not protect their devices from threat, and could not prevent intrusion to their privacy. This finding implies that digital privacy, a component of safety skill, had influence on students' academic engagement. The implication is that students need more exposure to digital literacy skills development.

Conclusion

The study investigated the influence of digital literacy skills on academic engagement of Library and Information Science students in universities in South-West, Nigeria. It can be concluded from the findings that digital literacy skills contribute to the academic engagement of Library and Information Science students. The recent COVID-19 lockdown revealed the need for students to acquire digital literacy skills because technology became handy in the teaching and learning process while students were at home. On the other hand, it may become challenging for students who lack digital skills to participate in their academic pursuits.

Recommendations

1. During the orientation programme for new students, the students' affair unit of the universities should emphasise the need for students to take charge and control of their academic activities by being actively involved in the academic processes.
2. Adequate acquisition of digital skills to enable effective use of digital resources in students' academic engagements for improved academic performance is recommended.
3. National Universities Commission (NUC) should include the provision of adequate digital infrastructure by universities as key criteria for accreditation of courses in universities.
4. Universities and university teachers should update their curricula content and delivery strategies and tools to integrate use of digital tools and resources for various academic activities and programmes.
5. For professional certification and membership of Librarians' Registration Council of Nigeria (LRCN), very high level proficiency in digital literacy skills should be a major criterion. This is because librarians are supposed to drive library support systems for the 21st century education in universities.

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