RELATIONSHIP BETWEEN DIGITAL LITERACY SKILLS, SOCIAL MEDIA USE AND ACADEMIC ACTIVITIES OF MEDICAL COLLEGE STUDENTS IN THE UNIVERSITY OF MAIDUGURI, NIGERIA

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Abstract

This study investigated the relationship between digital literacy skills social media use and academic activities of Medical College students at the University of Maiduguri, Borno State, Nigeria. The objectives of the study were to: identify the types of academic activities that students engage in, examine the level of digital literacy skills possessed by these students, identify the various types of social media platforms and to examine the purpose of use of social media platforms for academic activities among students of the Medical College at the University of Maiduguri. Descriptive survey design was employed for the study. The population of the study was 897 from the college of medical sciences. From the population, a total of 280 students were selected as sample of the study, out of which 264 valid responses were retrieved for analysis (94.3% response rate). Data were gathered through a structured questionnaire. Descriptive and inferential statistics, including regression analysis, were applied. Findings revealed that students demonstrated high competence in basic digital literacy operations such as information retrieval (mean = 3.15), online communication (mean = 3.08), and ethical resource use (mean = 3.03), but limited expertise in advanced skills including data analysis (mean = 2.15) and Learning Management Systems navigation (mean = 2.32). WhatsApp (92.8%), YouTube (90.2%), Telegram (74.2%), and Zoom (77.3%) were the dominant platforms for academic engagement. Regression analysis showed that digital literacy significantly predicts academic activities (R = 0.300, R² = 0.090, β = es 0.297, t = 5.30, p < 0.001), while social media use also significantly predicts academic activities (R = 0.350, R² = 0.123, β = 0.398, t = 7.65, p < 0.001). The study concluded that both digital literacy and social media utilization positively influence student learning outcomes, though the explanatory power remains modest. This suggests other factors also contribute significantly to academic engagement. The findings underscore the need

for improved ICT infrastructure, structured digital skill development programs, and guided social media integration in higher education to maximize academic benefits.

Introduction

The academic environment in the twenty-first century is increasingly influenced by the rapid development of digital technologies that shape how students' access, process, and apply information for learning. The expansion of information and communication technologies (ICTs) has transformed the dynamics of higher education, requiring students to possess adequate digital literacy competencies to succeed in their academic pursuits (Eshet-Alkalai, 2019). Within universities, students' ability to locate, evaluate, and effectively use digital information sources is now regarded as a fundamental academic skill.

Digital literacy encompasses not only the technical ability to operate devices and software but also cognitive, critical, and ethical capabilities needed to manage information for learning and research. According to Eshet-Alkalai (2019), digital literacy includes photo-visual, reproduction, branching, information, and socio-emotional literacies each necessary for students to effectively engage with the modern digital learning environment. In Nigerian higher education, digital literacy is particularly vital because access to electronic learning platforms, academic databases, and online instructional materials remains central to curriculum delivery (Yakubu & Issa, 2019; Yusuf & Afolabi, 2023).

Digital literacy skills form the foundation upon which all academic engagement in the digital age is built. Students who possess these skills can navigate online databases, evaluate web resources, and participate effectively in virtual classrooms. Bamidele and Adebayo (2021) emphasize that digital literacy extends beyond basic computer literacy; it includes the critical ability to discern credible information, apply referencing tools, and communicate scholarly knowledge through digital channels. Studies by Olatunji and Bello (2021) in Nigerian universities found that many undergraduates exhibit strong operational competence in using search engines and social media for academic information retrieval. However, fewer demonstrate proficiency in synthesizing, citing, and storing information for research purposes. This implies that while digital access has expanded, skill depth remains uneven.

For medical students, digital literacy is even more crucial, as evidence-based medicine requires constant retrieval and analysis of up-to-date digital information resources. UNESCO (2021) identified digital literacy

as one of the core competencies of the 21st century, stressing that institutions must integrate digital training into curricula. For students at the University of Maiduguri, the need for adequate digital literacy skills is further magnified by limited access to modern ICT infrastructure in the region, thus influencing how effectively they can use digital tools for learning and research.

Social media has evolved from a platform for entertainment to an indispensable academic tool. Platforms such as WhatsApp, Telegram, YouTube, Facebook, and Zoom have become virtual classrooms where students share materials, hold group discussions, and attend online lectures. Alismaiel et al. (2022) observed that when used constructively, social media fosters collaboration, enhances peer-to-peer learning, and improves student participation. Similarly, Bouhnik and Deshen (2022) reported that WhatsApp groups facilitate real-time academic communication and feedback between students and lecturers.

Social media has become one of the most accessible means for students to interact academically, given infrastructural constraints that limit access to full-fledged learning management systems (LMS). However, uncontrolled social media usage has also introduced distractions, time wastage, and misinformation that threaten students' academic focus (Bou-Hamad, 2020; Olebara et al., 2021). For medical students, social media platforms provide quick access to health-related forums, video tutorials, and peer discussions that complement classroom learning. Yet, excessive use of social media for non-academic purposes can lead to academic decline (Musa & Ibrahim, 2020).

Academic activities in higher education represent the range of learning-related engagements in which students participate to achieve academic success. These activities include attending lectures, conducting research, preparing for examinations, participating in laboratory work or clinical sessions, and collaborating in study groups. The degree of student participation in academic activities often determines their overall academic performance and intellectual growth. According to Johnson and Matthews (2020), academic activities have increasingly become digitally mediated, as students now rely on online materials, discussion forums, and digital submissions to meet academic requirements.

For medical students, academic activities extend beyond classroom theory to include clinical practice, patient simulation, and collaborative research all of which demand a high level of information literacy and technological competence. The transition from traditional face-to-face learning to hybrid or fully digital modes of learning, accelerated by the COVID-19 pandemic, has made digital proficiency indispensable. This study therefore examines how digital literacy skills and social media use collectively influence the academic activities of Medical College students at the University of Maiduguri.

Statement of the Problem

In the 21st century, the learning process in higher education has been profoundly transformed by the rapid advancement of information and communication technologies (ICTs). University students, particularly those in the medical sciences, are now expected to possess adequate digital literacy skills and effectively utilize social media platforms for research, collaboration, and academic engagement. Ideally, these technologies should enhance students' participation in lectures, research projects, and online learning environments. However, despite widespread access to digital tools, there remains uncertainty about how effectively Medical College students at the University of Maiduguri are integrating digital literacy and social media use into their academic activities. Preliminary observations suggest that many students appear to possess basic digital skills, with limited competence in critical areas such as evaluating online information, referencing digital sources, and applying analytical tools. In addition, while social media platforms like WhatsApp, YouTube, and Telegram are widely used by students, their application for academic purposes appears to be overshadowed by social and entertainment use, which may lead to distractions and reduced academic focus. Furthermore, there is limited empirical evidence on the extent to which digital literacy and social media use contribute to or detract from academic engagement among medical students in resource-constrained settings like Maiduguri. As a result, there is a pressing need to examine how digital literacy skills and social media use collectively influence the academic activities of Medical College students. This study seeks to address this gap by investigating the relationship between digital literacy skills social media use and academic activities of Medical College students at the University of Maiduguri, Nigeria.

Objectives of the Study

The objectives of the study were to:

1. Identify the types of academic activities engaged in among Medical College students at the University of Maiduguri.
2. Examine the level of digital literacy skills among Medical College students at the University of Maiduguri.
3. Identify types of social media do Medical College students at the University of Maiduguri use for academic purposes.
4. Examine the extent to which Medical College students use social media for academic activities.

Research Questions

The following research questions were answered in this study:

1. What are the types of academic activities engaged in among Medical College students at the University of Maiduguri?
2. What is the level of digital literacy skills among Medical College students at the University of Maiduguri?
3. What types of social media do Medical College students at the University of Maiduguri use for academic purposes?
4. To what extent do Medical College students use social media for academic activities?

Research Hypotheses

The following hypotheses were tested at .05 level of significance:

H_{01}: There is no significant relationship between digital literacy skills on academic activities of Medical College Students at the University of Maiduguri.

H_{02}: There is no significant relationship between social media use and academic activities of Medical College Students at the University of Maiduguri.

Scope

The study is limited by content and geographical scope. The content scope covers the impact of digital literacy skills and social media use on the academic activities of Medical College students. The study aims to address four core objectives. Firstly, the study seeks to identify the types of academic activities that students of the Medical College at the University of Maiduguri are engaged in, examine the level of digital literacy skills possessed by these students, identify the various types of social media platforms and to examine the purpose of use of social media platforms for academic activities among Medical students. The geographical scope of this study covers the Faculty of Medical College, University of Maiduguri, Borno State, Nigeria. The research is confined to this institution and targets undergraduate students enrolled in various departments within the Medical College.

Literature Review

This study is grounded in the Digital Literacy Framework proposed by Eshet-Alkalai (2019) and the Technology Acceptance Model (TAM) by Davis (1989). The Digital Literacy Framework posits that effective digital engagement requires multiple competencies including photo-visual literacy, reproduction literacy, branching literacy, information literacy, and socio-emotional literacy. The TAM suggests that perceived usefulness and ease of use determine technology adoption and usage patterns. Together, these frameworks provide a theoretical lens for understanding how students' digital competencies and perceptions of social media utility influence their academic engagement.

Digital literacy has been widely recognized as an essential skill for success in higher education. According to Ng (2019), digital literacy refers to the awareness, attitude, and ability of individuals to use digital tools and resources appropriately for learning, communication, and problem-solving. It encompasses a range of competencies, from information retrieval and analysis to content creation and online collaboration. In the context of higher education, these skills determine how effectively students can engage with electronic resources and online learning systems. A study by Yakubu and Issa (2019) examined digital literacy among students in higher education institutions in Nigeria using a descriptive survey design involving 312 undergraduates from the University of Ilorin. Findings revealed that students possessed moderate competence in basic digital operations such as word processing and email communication but lacked proficiency in database navigation, data analysis tools, and referencing software. The authors concluded that the integration of structured digital literacy modules within university curricula was necessary to enhance students' academic outcomes.

Similarly, Olatunji and Bello (2021) conducted research on digital library user experiences in Nigerian universities among 420 students across three federal institutions. Using a mixed-method approach, they found that while students frequently accessed digital library platforms, their ability to evaluate online information sources and synthesize data for research was limited. The authors emphasized that inadequate training in advanced digital literacy skills constrained students' potential for scholarly productivity. An international comparative study by Yusuf and Afolabi (2023) in Osun State, Nigeria, involving 400 secondary and tertiary students, found that students' digital literacy competence directly predicted their academic performance. The study employed a correlation research design and revealed a strong positive relationship ($r = 0.62$, $p < 0.01$) between digital literacy and learning outcomes. The authors recommended nationwide training workshops and policy reforms to embed digital literacy education into the Nigerian school system.

Ntshwarang, Musingafi, and Ramakgopa (2025) conducted a qualitative multi-case study across

Botswana and South Africa examining digital infrastructure and pedagogical integration in SubSaharan African universities. Their findings underscored that digital infrastructure, faculty engagement, and institutional policies are significant predictors of students' digital literacy outcomes. They argued that without stable infrastructure and access, even well-trained students struggle to fully apply their skills. Collectively, these studies highlight that while Nigerian and African students possess foundational digital knowledge, there remains a gap in higher-order skills necessary for advanced academic engagement such as referencing, data interpretation, and virtual collaboration. The present study extends these insights by examining digital literacy specifically among medical students, whose professional training heavily relies on digital and evidence-based resources.

Social media platforms have transitioned from being tools of social interaction to vehicles for academic communication and learning. Bouhnik and Deshen (2022) found that WhatsApp has become a common educational platform for teacher-student interaction, promoting real-time communication and peer collaboration. Their study, conducted among high school and university students in Israel, revealed that WhatsApp groups helped in resource sharing, clarification of assignments, and timely dissemination of academic information. Musa and Ibrahim (2020) examined digital engagement in Nigerian higher education using a survey of 350 undergraduates across northern universities. They found that 87% of students used WhatsApp and Facebook for exchanging lecture notes, while 72% relied on YouTube for visual learning. However, excessive social media use was associated with distractions, procrastination, and diminished concentration during study hours. The authors suggested a balanced academic use of social media through institutional guidance and digital discipline.

Alismaiel et al. (2022) studied factors influencing students' use of social media for academic purposes among 512 university students across the Gulf region. Using structural equation modeling, they discovered that perceived usefulness, ease of access, and peer influence significantly predicted students' academic engagement via social media. The findings indicated that social media, when pedagogically integrated, enhances collaborative learning, self-efficacy, and engagement with course materials. Supporting this, Umar and Shaba (2022) explored social media as a tool for academic engagement from a Nigerian perspective and reported that students widely used Telegram and YouTube for accessing instructional videos, discussion forums, and live tutorials. Their descriptive analysis revealed that students in medical and engineering programs particularly benefited from interactive visuals and peer discussions that facilitated comprehension of complex concepts.

Academic activities constitute the core of students' engagement in the learning process. They include attending lectures, completing assignments, conducting research, group discussions, clinical practicals, and examinations. The level of student engagement in these activities often reflects their

academic performance and institutional support. Johnson and Matthews (2020) studied measuring student experience with digital academic resources across six U.S. universities and found that the quality of digital infrastructure strongly determined students' level of engagement. When digital platforms functioned effectively, students reported higher motivation and satisfaction with learning outcomes.

Olebara et al. (2021) examined impacts of social media on students' mood, time management, and academic activities using a quantitative survey of 380 undergraduates. The findings showed that students who effectively managed social media time reported better academic activity participation. Conversely, those with uncontrolled usage patterns experienced decreased concentration and missed academic tasks. The study recommended institutional digital awareness campaigns and counseling interventions to mitigate misuse. Musa and Ibrahim (2020) also found that digital engagement increased students' attendance in virtual lectures and improved access to reading materials. However, infrastructural issues such as inconsistent power supply, poor bandwidth, and the high cost of data often hinder continuous participation in online academic activities.

Furthermore, Klein et al. (2020) explored physics students' perceptions of online academic activities during COVID-19 and discovered that students' participation rates were highly dependent on their familiarity with digital tools. The study concluded that training and orientation in digital tools are prerequisites for effective online learning engagement. Cumulatively, these studies emphasize that academic activities in modern education systems are mediated by students' digital competence and access to online learning resources. Thus, the current study situates academic activities within the broader interplay between digital literacy skills and social media utilization, focusing on how these variables collectively affect medical students' academic engagement at the University of Maiduguri.

Methodology

This study adopted a descriptive survey design with a quantitative approach to investigate the impact of digital literacy skills and social media use on the academic activities of Medical College students at the University of Maiduguri. The study targeted a population of 897 students from the College of Medical Sciences, from which a sample of 280 respondents was selected through convenience sampling due to difficulties in accessing students across various clinical rotations and lecture schedules. Although this method offered flexibility and accessibility, the possibility of selection bias

was acknowledged as a limitation. Data were collected using a structured questionnaire designed in line with the study objectives and divided into five sections: demographic information, academic activities, digital literacy skills, types of social media used, and use of social media for academic purposes. A pilot test was conducted with 30 students of the Faculty of Education. To ensure clarity and reliability, yielding Cronbach's Alpha coefficients of 0.89 for digital literacy, 0.85 for social media usage, 0.82 for social media in academics, and 0.78 for academic engagement, indicating high internal consistency. Content validity was established through expert review by specialists in Library and Information Science and Educational Technology. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 27. Descriptive statistics frequencies, percentages, means, and standard deviations were used to analyse demographic information and evaluate students' levels of digital literacy, social media use, and academic engagement. Mean scores of 2.50 and above indicated a high level of agreement on a 4-point scale. Inferential statistics, specifically simple linear regression analysis, were used to test hypotheses and assess the relationship of digital literacy and social media use and academic activities. All statistical tests were performed at a 0.05 significance level, providing empirical support for the study's objectives.

Data Analysis and Results

Demographic Profile of Respondents

Out of the 280 questionnaire administered to Medical College students at the University of Maiduguri, 264 were correctly completed and returned, representing a response rate of 94.3%. This high return rate was achieved through follow-up visits and immediate retrieval of completed questionnaire. The demographic profile of respondents is summarized in Table 1.

Table 1: Demographic Profile of Respondents (n = 264)

Characteristic	Category	Frequency (%)
Gender	Male	142 (53.8%)
	Female	122 (46.2%)
Age Range	18-23 years	106 (40.2%)
	24-29 years	98 (37.1%)
	30 years and above	60 (22.7%)

Academic Level	Level 1	48 (18.2%)
	Level 2	58 (22.0%)
	Level 3	60 (22.7%)
	Level 4	54 (20.5%)
	Level 5	44 (16.6%)

Table 1 shows that male students (53.8%) slightly outnumbered female students (46.2%), suggesting a balanced gender representation in the study. The age distribution indicates that most respondents were between 18 and 23 years old (40.2%), which aligns with the typical age range for undergraduate medical students. The participation of students across all academic levels (Levels 15) ensured a fair representation of perspectives from all students. This diversity enhances the reliability and generalizability of findings to the broader population of Medical College students.

Types of Academic Activities

Research Question 1: What are the types of academic activities engaged in by Medical College students at the University of Maiduguri?

Table 2: Types of Academic Activities Engaged in by Medical College Students

S/N	Types of Academic Activities	Yes	No	Mean	Std. Dev.

1	Preparation for assignments, C.A tests and examinations	244 (92.4%)	20 (7.6%)	1.92	0.27
2	Carrying out projects and clinical practicals	228 (86.4%)	36 (13.6%)	1.86	0.35
3	Research activities	211 (79.9%)	53 (20.1%)	1.80	0.40
4	Attending seminars and webinars	75 (28.4%)	189 (71.6%)	1.28	0.45

5	Academic presentations	179 (67.8%)	85 (32.2%)	1.68	0.47
6	Group discussions, quizzes, and study groups	238 (90.2%)	26 (9.8%)	1.90	0.30

Weighted Mean   1.74

Note: Mean scores based on Yes = 2, No = 1

The results in Table 2 show that medical students at the University of Maiduguri are actively engaged in diverse academic activities, though participation varies across categories. Most students frequently engage in preparing for assignments, tests, and examinations (92.4%, mean = 1.92), group discussions and study sessions (90.2%, mean = 1.90), and project or clinical practical work (86.4%, mean = 1.86), reflecting strong involvement in collaborative and assessment-driven tasks. Moderate participation was recorded in research activities (79.9%, mean = 1.80) and academic presentations (67.8%, mean = 1.68), while attendance at seminars and webinars was notably low

(28.4%, mean = 1.28). With a weighted mean of 1.74, the results indicate high engagement in core learning tasks but limited participation in research-oriented and professional enrichment activities.

Research Question 2: What is the level of digital literacy skills among Medical College students at the University of Maiduguri? **Table 3: Level of Digital Literacy Skills**

S/N	Level of Digital Literacy Skills	VHL	HL	LL	VLL	Mean	SD
1	Search for medical information using online databases	108 (40.9%)	102 (38.6%)	39 (14.8%)	15 (5.7%)	3.15	0.85
2	Use online platforms for academic communication	96 (36.4%)	110 (41.7%)	41 (15.5%)	17 (6.4%)	3.08	0.83
3	Navigate Learning Management Systems	43 (16.3%)	64 (24.2%)	92 (34.8%)	65 (24.6%)	2.32	1.01

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4	Analyze data using Excel or SPSS	32 (12.1%)	55 (20.8%)	99 (37.5%)	78 (29.6%)	2.15	0.97
5	Create academic presentations	85 (32.2%)	106 (40.2%)	49 (18.6%)	24 (9.0%)	2.96	0.91
6	Organize digital notes	42 (15.9%)	58 (22.0%)	96 (36.4%)	68 (25.7%)	2.28	1.00
7	Ethical use of digital resources	94 (35.6%)	103 (39.0%)	47 (17.8%)	20 (7.6%)	3.03	0.87
	Weighted Mean					2.71	

Note: VHL = Very High Level, HL = High Level, LL = Low Level, VLL = Very Low Level. Decision Rule: Mean ≥ 2.50 = High Level; Mean < 2.50 = Low Level

The findings in Table 3 indicate that medical students at the University of Maiduguri possess a moderate level of digital literacy skills, with a weighted mean score of 2.71. Students showed strong competence in searching for medical information using databases such as PubMed and Google Scholar (mean = 3.15) and in using online communication platforms like Zoom and WhatsApp for academic purposes (mean = 3.08). They also demonstrated awareness of ethical digital practices (mean = 3.03) and moderate skill in creating presentations (mean = 2.96). However, proficiency was lower in advanced areas such as Learning Management System use (mean = 2.32), data analysis (mean = 2.15), and digital note organization (mean = 2.28). These gaps highlight the need for structured digital literacy training to strengthen analytical and research-oriented competencies.

Research Question 3: What types of social media do Medical College students at the University of Maiduguri use for academic purposes?

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Table 4: Types of Social Media Used Among Students

S/N	Types of Social Media Used	Yes	No	Mean	SD
1	WhatsApp for sharing materials and discussions	245 (92.8%)	19 (7.2%)	1.93	0.26
2	Facebook for academic groups	183 (69.3%)	81 (30.7%)	1.69	0.46
3	Telegram for lecture notes and updates	196 (74.2%)	68 (25.8%)	1.74	0.44
4	YouTube for tutorial videos	238 (90.2%)	26 (9.8%)	1.90	0.30
5	Instagram for academic pages	144 (54.5%)	120 (45.5%)	1.55	0.50
6	Twitter (X) for professional engagement	118 (44.7%)	146 (55.3%)	1.45	0.50
7	Zoom for online lectures	204 (77.3%)	60 (22.7%)	1.77	0.42
	Weighted Mean			**1.72**	

The results in Table 4 show that medical students at the University of Maiduguri widely use social media for academic purposes, with differing levels of engagement across platforms. WhatsApp (92.8%, mean = 1.93) and YouTube (90.2%, mean = 1.90) were the most frequently used, reflecting their importance for sharing study materials, discussions, and accessing tutorials. Telegram (74.2%, mean = 1.74) and Zoom (77.3%, mean = 1.77) also ranked high, supporting collaborative and virtual learning. Facebook (69.3%, mean = 1.69) and Instagram (54.5%, mean = 1.55) were used moderately, while Twitter (44.7%, mean = 1.45) was the least utilized. With a weighted mean of 1.72, the results indicate high social media use for academic activities, emphasizing students' preference for visual, interactive, and communication-based learning platforms.

Research Question 4: To what extent do Medical College students use social media for academic activities?

Table 5: Use of Social Media for Academic Activities

S/N	Use of Social Media for Academic Activities	SA	A	D	SD	Mean	SD

		SA	A	D	SD		
1	Discuss class assignments and course topics	112 (42.4%)	94 (35.6%)	37 (14.0%)	21 (8.0%)	3.12	0.94
2	Receive academic updates via WhatsApp	128 (48.5%)	92 (34.8%)	30 (11.4%)	14 (5.3%)	3.27	0.86
3	Join academic groups for collaboration	103 (39.0%)	101 (38.3%)	42 (15.9%)	18 (6.8%)	3.10	0.91
4	Watch educational videos on YouTube	121 (45.8%)	100 (37.9%)	27 (10.2%)	16 (6.1%)	3.24	0.89
5	Connect with lecturers for clarification	89 (33.7%)	97 (36.7%)	51 (19.3%)	27 (10.3%)	2.94	0.99
6	Share educational materials with peers	108 (40.9%)	98 (37.1%)	36 (13.6%)	22 (8.3%)	3.11	0.94
7	Stay updated on medical academic trends	117 (44.3%)	104 (39.4%)	29 (11.0%)	14 (5.3%)	3.23	0.87
	Weighted Mean					**3.14**	

Note: SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree. Decision Rule: Mean ≥ 2.50 = High Extent; Mean < 2.50 = Low Extent

The findings in Table 5 show that medical students at the University of Maiduguri make extensive use of social media for academic purposes, with a weighted mean of 3.14, indicating a high level of engagement. The most common uses were receiving academic updates via WhatsApp (mean = 3.27), watching tutorials on YouTube (mean = 3.24), and staying informed on medical trends (mean = 3.23), showing strong reliance on social media for learning and information sharing. Students also used it for peer discussions (mean = 3.12), sharing materials (mean = 3.11), and group collaboration (mean = 3.10). However, communication with lecturers was lower (mean = 2.94), suggesting limited faculty involvement. Overall, the results highlight social media's value in supporting peer learning and resource exchange while emphasizing the need for greater instructor participation.

Hypothesis Testing

H₀₁: There is no significant relationship between digital literacy skills and academic activities of Medical College Students at the University of Maiduguri

Table 6: Test of Hypothesis 1

Model	R	R²	β	t	α-level	p-value
Digital Literacy → Academic Activities	0.300	0.090	0.297	5.30	0.05	<0.001

The regression results in Table 6 show that digital literacy skills have a significant but modest positive relationship on the academic activities of Medical College students at the University of Maiduguri. The R value of 0.300 indicates a weak positive relationship, while the R² value of 0.090 reveals that digital literacy accounts for about 9% of the variation in academic activities, with 91% explained by other factors. The beta coefficient ($\beta = 0.297$) suggests that an increase in digital literacy leads to a corresponding rise in academic engagement, and the t-value of 5.30 with a p-value below 0.001 confirms statistical significance. Therefore, the null hypothesis is rejected, implying that digital literacy significantly enhances students' academic involvement, though additional factors like motivation and institutional support also contribute.

H$_{02}$: There is no significant relationship between social media use and academic activities of Medical College Students at the University of Maiduguri

Table 7: Test of Hypothesis 2

Model	R	R²	β	t	α-level	p-value
Social Media Use → Academic Activities	0.350	0.123	0.398	7.65	0.05	<0.001

The regression analysis in Table 7 shows that social media use significantly predicts academic activities among Medical College students at the University of Maiduguri. The R value of 0.350 indicates a moderate positive relationship, while the R² value of 0.123 reveals that social media use explains about 12.3% of the variation in academic activities, with 87.7% influenced by other factors. The beta coefficient ($\beta = 0.398$) suggests that increased academic use of social media leads to higher levels of academic engagement. The t-value of 7.65 and a p-value below 0.001 confirm a statistically significant relationship, stronger than that observed with digital literacy. Thus, the null hypothesis is rejected, implying that social media use positively and significantly enhances students' academic participation, though other determinants also contribute.

Findings

The following were the findings of this study based on data gathered and analysed:

Discussion

The study revealed that medical students are highly engaged in core academic activities such as examination preparation, clinical practicals, and group discussions, but show low participation in seminars and webinars. This finding supports Klein et al. (2020), who noted that students prioritize structured academic engagements like laboratory sessions and problem-solving tasks, particularly when linked to formal assessments. Likewise, Belete (2024) found that students involved in organized peer tutoring and academic programs achieved stronger outcomes, emphasizing their preference for activities that directly influence academic success. Conversely, the low engagement in seminars and webinars aligns with Ogundipe (2020), who attributed such neglect to limited digital exposure and time management issues. Similarly, Turkson, Britwum, and Yeboah (2017) observed that students favor structured learning while overlooking informal enrichment activities. These patterns highlight the need for universities to integrate webinars and online seminars into curricula, offer credit-based incentives, and improve digital awareness to encourage broader participation in academic enrichment opportunities.

The study found that medical students possess strong basic digital literacy skills such as information retrieval, communication, presentation design, and ethical content use but struggle with advanced competencies like data analysis, Learning Management System (LMS) navigation, and digital notetaking. This aligns with López-Meneses et al. (2022), who observed that students excel in basic digital tasks but lack higher-order skills like content creation and evaluation. Similarly, Adeoye and Adeoye (2018) reported that Nigerian students perform well in basic searches but face difficulties with complex digital applications. Agina-Obu and Okwu (2023) also emphasized that digital competence enhances academic performance, while Ntshwarang et al. (2025) attributed limited LMS engagement to infrastructural constraints. At the University of Maiduguri, inconsistent internet access and limited exposure to advanced tools may explain these gaps. Therefore, universities should integrate structured digital literacy training into medical curricula, offer workshops on research and statistical tools, and ensure practical LMS experience to enhance students' readiness for digital academic and professional environments.

The study showed that medical students primarily use WhatsApp, YouTube, Telegram, and Zoom for academic purposes, while platforms like Twitter and Instagram are minimally used. This pattern supports Mansour et al. (2020), who found WhatsApp and YouTube to be the most preferred tools for collaboration and learning. Similarly, Bouhnik and Deshen (2022) noted WhatsApp's popularity in higher education due to its immediacy and group chat features, which promote sharing lecture materials and peer discussions. Al-Rahmi et al. (2022) also highlighted YouTube's educational value, while Barton et al. (2021) found that entertainment-oriented platforms such as Instagram and Snapchat distract from academic focus. The limited use of Twitter may relate to its text-heavy and professional nature rather than collaborative learning. Overall, students' platform choices reflect functionality and academic relevance. Institutions should leverage widely used platforms like WhatsApp and YouTube for structured academic engagement and create official channels to encourage focused and productive use.

The study revealed that medical students actively use WhatsApp and YouTube for collaboration, peer discussions, and sharing academic content but engage less with lecturers through these platforms. This supports Ojukwu et al. (2020) and Bouhnik and Deshen (2022), who found limited lecturer participation in academic interactions on social media. The absence of instructor engagement reduces opportunities for guided learning and feedback, despite Alismaiel et al. (2022) emphasizing that faculty involvement enhances social media's educational value through mentorship and academic discourse. Ejoh et al. (2022) similarly observed that minimal faculty presence weakens collaborative learning. Additionally, challenges such as poor internet connectivity, high data costs, distractions, and unreliable information highlighted by Musa and Adebayo (2023) further constrain effective social media use. As noted by Lukose and Agbeyangi (2025) and Chukwudi and Okeke (2023), social media can both support and disrupt learning, as students often face information overload and difficulty identifying credible academic sources.

The regression analysis revealed a statistically significant but weak positive relationship between digital literacy skills and academic activities among medical students at the University of Maiduguri, consistent with Getenet et al. (2024), who found that digital competence enhances cognitive, behavioral, and collaborative academic engagement. Similarly, Agina-Obu and Okwu (2023) reported that students with stronger digital literacy more effectively utilize academic databases and digital libraries, improving research productivity and performance. Although the relationship was modest ($R^2 = 0.090$), the significance suggests that even slight improvements in digital literacy can positively affect academic engagement. This implies that digital literacy is one of several contributing factors to academic success, alongside motivation, institutional support, and study habits. Consequently, universities should strengthen advanced digital training, improve ICT infrastructure, and integrate digital learning tools into curricula to maximize the academic benefits of digital literacy among students.

The regression analysis showing a moderate positive relationship between social media use and academic activities supports Malik et al. (2020), who found that academic use of social media enhances students' performance and creativity when guided by motivation. Similarly, Alismaiel et al. (2022) and Alalwan (2022) reported that using social media for engagement and collaboration improves learning outcomes. Platforms such as WhatsApp, YouTube, and Zoom extend learning opportunities beyond traditional classrooms through content sharing and virtual interactions. However, Lukose and Agbeyangi (2025) cautioned that excessive or unfocused social media use can reduce academic benefits by causing distraction. The impact of social media depends on its quality of use rather than frequency. Therefore, structured and supervised academic engagement, faculty-moderated groups, and institutional guidelines promoting disciplined use can help students maximize social media's educational potential while minimizing distractions and time wastage.

Conclusion

The study assessed the relationship between digital literacy skills social media use and academic activities academic activities of Medical College students at the University of Maiduguri. From results of this study, it was evident that students showed strong basic digital skills in information

retrieval and communication but weaker abilities in advanced areas such as data analysis, Learning Management System use, and digital note organization. WhatsApp, YouTube, Telegram, and Zoom were the most commonly used platforms for collaboration and information sharing due to their accessibility and ease of use. Regression results indicated that digital literacy and social media use explained 9% and 12.3% of academic engagement, respectively, implying that both factors enhance academic performance though other influences remain. The study concludes that integrating digital literacy education with responsible social media use, supported by improved infrastructure and institutional policies, can enhance learning outcomes and prepare students for a digital-driven professional environment.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. The University of Maiduguri should embed comprehensive digital literacy courses into undergraduate medical programs, particularly focusing on advanced competencies such as referencing tools (e.g., EndNote, Mendeley), data analysis software (e.g., SPSS, Excel),
and learning management systems (e.g., Moodle, Canvas). These courses should be mandatory and credit-bearing to ensure widespread participation.

2. Lecturers and faculty members should create and moderate official academic groups on platforms like WhatsApp, Telegram, and Zoom to guide students toward productive online interactions. Structured digital communities can reduce distractions, facilitate timely communication, and channel social media use toward academic engagement. Faculty training on effective online pedagogy should be provided.

3. Regular training workshops should be organized to update students and staff on emerging digital tools and responsible social media practices. These programs should emphasize information credibility assessment, time management strategies, digital discipline, and cybersecurity awareness. Certification programs could be offered to incentivize participation.

4. The university should develop a comprehensive policy framework that promotes responsible digital citizenship, combats misinformation, and encourages the use of verified academic resources. This policy should include guidelines for acceptable online behavior, ethical use of digital tools, and mechanisms for reporting and addressing digital misconduct.

5. The University of Maiduguri should integrate these activities into the curriculum by offering academic credit, making attendance part of course requirements, or linking participation to professional development portfolios. Creating awareness about the value of such activities for career advancement is also essential.

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