
Social media proficiency, digital information accessibility and information sharing behaviors among library and information science students

Ibrahim Wada^{}, Augustine Uzoma Madu^{}, Anthonia Peace Joel^{}

Department of Library and Information Science, University of Maiduguri, Borno State, Nigeria

Abstract

Background of the study: Students proficiency in using academic resources is a topic of interest, particularly in social media utilisation, digital information literacy, and online information sharing practices.

Purpose: The study investigated the social media proficiency, digital information accessibility and information sharing behaviours among library and information science students, university of Maiduguri, Borno State

Method: The study was guided by 3 research objectives and 2 hypotheses. The study consisted 742 undergraduate students, out of which 649 responded to the questionnaire dispersed through online survey. Mean scores and standard deviations were used for descriptive analysis and inferences were made with regression analysis.

Findings: Students demonstrated moderate digital literacy skills for academic activities, with average competencies in locating and evaluating quality online sources and leveraging digital tools, ($\bar{x}_w = 3.01$, Std. 1.489); and that social media usage among the students is moderately frequent ($\bar{x}_w = 2.97$, Std. = 1.48); while collaborative digital learning behaviours are moderately high among the LIS students ($\bar{x}_w = 3.68$, Std. = 1.435).

Conclusion: Individual student engaged in online collaboration and communication via social media for educational purposes, but still have deficiencies in certain abilities such as evaluating online authenticity, and effectively managing distractions.

Keywords: *social media, digital information accessibility, information sharing behaviors*

Paper Type:

Research Paper

Submitted: 29 August 2023
Revised: 30 September 2023
Accepted: 16 October 2023
Online: 18 December 2023

* Correspondence:
Augustine Uzoma Madu

E-mail:
maduau@unimaid.edu.ng

Introduction

Students' proficiency in using academic resources is a topic of interest, particularly in social media utilisation, digital information literacy, and online information sharing practices (Lau, 2017; Gedik et al., 2021). Today the use of social media is so massive that it is not limited to the personal sphere (Azka, Asmiyanto, & Babbar, 2023). Social media platforms provide valuable opportunities for students to engage, access information, and foster collaborative relationships (Zheng & Yu, 2022). However, students often use these platforms for social interactions rather than educational purposes. Social media is becoming a new form of informal scientific communication channel for academics, to disseminate and disseminate new knowledge easily (Hapsari, et al., 2023). There is a potential disparity between the accessibility of vast amounts of information and the ability to effectively employ digital literacy skills to enhance academic coursework and research (Neier & Zayer, 2021). Networked technologies play a crucial role in facilitating information exchange and fostering collaborative efforts. Online information sharing tends to be less formal and recreational, rather than serving an instructional purpose.

Contemporary students are deeply engaged in a digitally-oriented world characterized by extensive connectivity. The prevalence of social technologies and online platforms has greatly impacted communication, collaboration, and information accessibility (Nkomo, et al., 2021; Bergdahl, et al., 2020; Muhammad & Amalul, 2020; Kearney & Maakrun, 2020).

High-performance students tend to concentrate better with digital learning technologies, but they can also lead to distractions and disengagement (Kearney & Maakrun, 2020). The rise of digital technologies in education poses challenges, as technology can be a major distraction and cause disengagement (Freitas, 2021). Off-task use of digital devices and smartphone and social media use also contribute to academic distraction (Taylor, et al., 2018). However, digital technologies can also enhance engagement and learning by fostering students' proactivity and protagonism, transforming teachers into advisors and guides during the learning process (Aagaard, 2021).

The development of students' digital literacy and the thoughtful utilisation of technologies are crucial for their preparation as academics and professionals. The systematic evaluation of proficiencies enables the identification and implementation of targeted interventions. The objective of this study is to shed light on the competency of students in utilising social media, information literacy abilities, and information sharing behaviour within academic context. No single study that has integrated social media proficiency, digital information accessibility, and information sharing behaviours among library and information science students was found during this research. However, Onojah et al. (2020) studied undergraduates' proficiency in the use of social media for learning, while digital information accessibility and information sharing behaviours were not found in any study on students' learning. On the contrary, information sharing behaviour appeared in a couple of studies, such as Bashir, et al. (2021), Anna (2017), Erdoğan et al. (2022), etc. The importance of the integration of the factors in a single study to understand their potential in an educational context cannot be overemphasised. Hence, this becomes a gap that the present study aims to fill with novelty. Identifying discrepancies between the desired and actual implementation of social media and technology might inform instructional strategies and interventions aimed at maximising their educational efficacy. Objectives of the Study:

1. Examine students' ability to utilize social media platforms for academic purposes
2. Examine students' skills in locating, accessing, and evaluating quality digital information sources for coursework and research



3. Ascertain trends in information sharing behaviours among students via social platforms, messaging, and other digital channels

Hypothesis

Digital information proficiency and digital information accessibility have no significant impact on information shearing behaviours of library and information science students in University of Maiduguri, Borno State

Review of Related Literatures

Given the increasing prevalence of social media, educators are actively striving to comprehend and exploit these platforms as valuable resources for educational purposes. Multiple studies have indicated that students exhibit a modest level of proficiency in utilising social media for academic purposes. [Almusharraf and Khahro \(2020\)](#) conducted a survey among secondary school students and discovered a moderate level of self-assurance in using platforms such as Facebook, Twitter, and WhatsApp for educational purposes and engaging in collaborative activities with their peers. The students acknowledged their academic potential but expressed a desire for support to fully optimise it. [Zheng and Yu \(2022\)](#) found that undergraduates who utilise social media for informal academic learning have a moderate level of competency on average. Nevertheless, a stronger level of digital literacy was found to be positively associated with a higher frequency of academic utilisation.

while examining the practical application of social media in an academic context, scholars observed discrepancies in students' utilisation of these platforms for social purposes as opposed to educational purposes. [Gedik et al. \(2021\)](#) conducted a study employing a mixed-methods approach, wherein they found that undergraduate students made substantial use of platforms for personal socialising, but demonstrated occasional use for academic goals such as resource sharing or collaboration. In a similar vein, the study conducted by [Gülbahar et al. \(2020\)](#) revealed that students exhibited infrequent utilisation of social networking platforms such as Facebook and Twitter during their educational pursuits, despite acknowledging the potential advantages these platforms could offer in an academic context.

However, research findings have indicated advantages associated with deliberate use of social media platforms by students for educational purposes. [Jaffar and Musa \(2020\)](#) informed that active participation in course-related Facebook groups has the potential to provide good effects on student achievement, engagement, and the development of a feeling of community. According to [Al-Kathiri \(2020\)](#), the inclusion of Twitter has been found to enhance academic reading and writing skills. In addition, [Kelly et al. \(2021\)](#) conceived that the use of social media for networking purposes facilitates the establishment of connections that contribute to the process of transitioning and achieving success.

The need to foster students' capacity to effectively utilise social media for the purpose of learning has been shown by researchers. The participants in the study conducted by [Almusharraf and Khahro \(2020\)](#) expressed a desire for assistance in order to fully harness the academic potential of social platforms. In a similar vein, [Tananuraksakul \(2020\)](#) argued for the implementation of instructional strategies that empower students to effectively utilise tools for purposes such as collaboration and knowledge production.

An and [Quagliata \(2021\)](#) conducted a comprehensive study among secondary students, whereby they observed that the average competency level in utilising prominent sites such as YouTube, Facebook, and Instagram for educational purposes was 3.6 out of 5. The students expressed a moderate level of proficiency in academic practises such as teamwork, resource sharing, and networking, but did not consider themselves to be highly proficient in these areas.

The examination of particular platforms highlights the disparities between their



utilisation in social contexts and academic contexts. conducted by [Tóth-Király et al. \(2021\)](#) observed that undergraduate students predominantly utilise Facebook as a means of engaging in personal social interactions, while its integration for academic purposes such as collaborative projects or discussions inside the university context remains limited. The students failed to utilise the collaborative capabilities of Facebook. [Tóth-Király et al. \(2021\)](#) found that there was a positive relationship between the perceived relevance to academic studies and the frequency of academic usage.

Scholarly investigations indicate that students can get concrete scholastic advantages by purposefully using social media platforms ([Tang & Hew, 2021](#); [Al-Kathiri, 2020](#)). [Tang and Hew \(2021\)](#) asserted that engineering students who actively engaged in academic Facebook groups demonstrated notable improvements in their design skills and overall level of involvement, as opposed to their counterparts who did not utilise such platforms. [Al-Kathiri \(2020\)](#) posited that English language learners had enhancements in their writing skills as a result of engaging in structured academic exchanges on the social media platform, Twitter. The finding demonstrated that effective utilisation of the tools in a strategic manner to achieve educational objectives leads to significant learning benefits.

Similarly, [Tang and Hew \(2021\)](#) surveyed undergraduate students and discovered that the average frequency of sharing academic materials on social media was 3.8 out of 7. This finding suggests a moderate level of information exchange among the participants. Nevertheless, it was observed that students had a lesser level of proficiency in distinguishing appropriate sharing practises, such as accurately citing sources.

There seems to be notable degree of heterogeneity in behaviours observed across different platforms. [Neier and Zayer \(2021\)](#) established that students in a European sample had a higher frequency of academic knowledge sharing on private forums and chat applications as opposed to public social media platforms. The inherent semi-public nature of messaging networks has the potential to foster increased communication of scholastic knowledge. In comparison, it is common for students to utilise public social media platforms such as Facebook primarily for social purposes rather than academic engagements ([Gedik et al., 2021](#)).

The deliberate incorporation of social media platforms enables the effective dissemination of scholarly content. [Kim et al. \(2020\)](#) expressed that graduate student experienced improvements in their digital citations, networking, and information exchange skills as a result of their participation in a scholarly Twitter network under the guidance of mentors. [Neier and Zayer \(2021\)](#) stated that, professionals advocate for the implementation of scaffolding activities such as the evaluation of sources, proper citation practises, and the provision of substantial comments in relation to shared information. Under the leadership of an instructor, students have the potential to develop proficiency in engaging in educationally beneficial knowledge exchange via digital networks. Teaching students how to detect appropriate sharing practises can enhance the knowledge-building potential of social media platforms.

The absence of digital fluency among students presents a significant concern over their abilities to successfully employ social media in a strategic manner, which may result in their falling behind in the course of educational pursuits. Just as print literacy held great importance in previous centuries, digital literacy has now become a crucial prerequisite for accessing and effectively utilising knowledge within the modern educational setting of the Information Age ([Beydokhti et al., 2021](#)). The evaluation of students' social media usage, information literacy skills, and online sharing capabilities has become a pressing necessity in order to devise targeted interventions ([Klein et al., 2022](#); [Levinsen et al., 2022](#))



Method

Design

This study employed a descriptive survey method of research design with questionnaire as data collecting instrument. Descriptive studies provide a comprehensive depiction of individuals, events, or conditions by examining them in their natural state without manipulating variables (Houser, 2016). They focus on describing the sample and variables and can examine multiple variables, though it is potent in the investigation of a solitary variable (Walinga, 2010). They examine population traits, identify issues within units, and analyse changes in practices across different organisations or nations (Gray & Grove, 2020).

Population and sample

The study population is 742 respondents which comprised of 300 and 400 level undergraduate Students of Library and Information Science degree programme in University of Maiduguri, Borno State. The study used a purposive technique to determine the population, purposive sampling is used to deliberately select individuals who are expected to provide valuable information with minimal use of research resources (Kelly, 2010; Palinkas et al., 2013). An enumeration sampling techniques was adopted to select all the students of 300 and 400 level in the LIS study programme through the class registration list. A complete enumeration involve the use of every element in a population to obtain the population parameter (Arnab, 2017).

Data Collection

The study data was collected with structured closed-ended questionnaire according to the objectives of the study. It was distrusted through an online system which was hosted through Google Form. A copy of the form was sent to the class group whatsapp platform with an option to participate, and the students responded to the questions over one semester of three months. At the end of the semester, 649 valid responses were received, and was used for the analysis.

Data analysis

The responses were downloaded in CSV form from the Google Form site and was further collated with Microsoft Excel. The organized data were computed into Statistical Package for Social Science (SPSS) version 27. With descriptive statistical tools in SPSS, the data were analysed and presented in tabular format with mean scores and standard deviations. In addition, regression analysis was carried out to test the null hypothesis at 0,05 level of significance.

Result and Discussion

Table 1. Social Media Proficiency of Students

SNO	Social Media Proficiency	Mean	Std.
	I use social media to connect with other students about coursework and studying	3.05	1.630
	I follow accounts or join groups related to my academics on social platforms.	3.23	1.586
	I use social media platforms effectively for academic purposes like study groups.	2.96	1.668
	I am unsure how to use social media appropriately for academic needs.	2.79	1.221
	Social media is a distraction, not a tool, for my academics.	2.90	1.440
	I actively leverage social media for communicating and networking academically.	3.14	1.394



Weighted mean score

3.01 1.489

Table 1.1 shows that students have a moderate level of proficiency and involvement in using social media technology for academic purposes. The study's mean values range from 2.79 to 3.23, with a range of ambivalence and agreement. Students engage in various academic activities on social platforms, such as connecting with classmates, following profiles, and participating in study groups. They have moderate frequency of these activities. A mean score of 2.79 suggests uncertainty about the appropriate academic use of social media, while a mean score of 2.90 suggests they slightly disagree with the notion that social technologies are distractions. The use of social media for academic communication and networking is moderately prevalent. Pedagogical interventions can enhance the development of skills necessary for effectively using social platforms for academic purposes. Longitudinal tracking can help monitor proficiency indicators and identify instructional programs designed to improve academic technology skills.

Table 2. Digital Information Accessibility by Students

SNO	Digital information accessibility	Mean	Std.
	I am confident in finding quality sources online for assignments and research.	2.97	1.296
	I use strategies to evaluate if an online source is credible and unbiased.	2.76	1.351
	I struggle to access required academic readings, materials or articles online.	3.43	1.584
	I compare information between sources to determine accuracy and trustworthiness.	2.79	1.425
	When researching, I use digital tools and databases effectively.	3.04	1.566
	I have difficulty determining if digital sources are relevant for my studies.	2.84	1.630
	Weighted mean score	2.97	1.48

The study shows that students have a modest level of proficiency in accessing and evaluating digital information resources for academic use. The mean scores range from 2.76 to 3.43, with students generally falling between disagreement and agreement. They have confidence in identifying reputable internet sources but struggle with assessing authenticity. They also struggle with comparing information from different sources and evaluating its accuracy. They have moderate proficiency in using digital tools and databases, but struggle with judging the relevancy of digital materials. Pedagogical interventions focusing on credibility assessment, lateral reading, database proficiency development, and relevance recognition can enhance students' academic digital literacy. Longitudinal tracking of competency benchmarks can help understand the effects of educational programs on these skills. The increasing reliance on digital resources requires a concentrated development of competencies in this area, which may yield greater benefits.

Table 3. Information Sharing Behaviours of Students

SNO	Information Sharing behaviours	Mean	Std.
	I share academic materials with other students through social media or messaging.	3.91	1.713
	I use digital channels to exchange resources like notes, study guides or links.	3.47	1.516
	I discuss academic concepts, ideas and course content online with peers.	3.30	1.281



I comment on other students' posts about coursework and studying online.	4.03	1.516
I only use digital channels for socializing, not academics.	3.82	1.246
I use online platforms to collaborate and exchange work with peers.	3.55	1.339
Weighted mean score	3.68	1.435

According to the data presented in Table 1.1, it can be observed that students exhibit an average level of skill and engagement when utilising social media technologies for academic reasons. The study's mean values exhibit a range of 2.79 to 3.23, demonstrating a spectrum of ambivalence and agreement. Students actively participate in a multitude of academic endeavours on social platforms, including but not limited to establishing connections with fellow classmates, tracking and monitoring profiles of interest, and actively engaging in study groups. These activities are characterised by a moderate frequency. The average score of 2.79 indicates a lack of assurance regarding the suitable academic utilisation of social media, however the average score of 2.90 indicates a small disagreement with the idea that social technologies serve as distractions.

Table 4. Model summary/ANOVA/Coefficient

Model	R	R Square	Adjusted R Square	Unstandardized Coefficients				Sign
				B	Std. Erros	t	F	
1	.337a	.113	.110					.000b
1 (Constant)				2.835	.096	29.533	41.245	.000
Social Media Proficiency,				.139	.032	4.419		.000
Digital Information Accessibility				.143	.033	4.329		.000

a. Predictors: (Constant), Social Media Proficiency, Digital Information Accessibility,
b. Dependent Variable: Information Searching Behaviour

The research used multiple linear regression analysis to examine the relationship between social media proficiency, digital information accessibility, and information searching behaviour. The R value of 0.337 indicates a high relationship between the observed and predicted values, while the R-squared statistic measures the extent to which the independent factors explain the variability. The adjusted R Square score of 0.110 contributes to the explained variance. The results suggest that the variables explain a moderate fraction (11.3%) of the variance in students' information-searching activities. The F-value of 41.245 shows the model is significance, indicating that the predictors significantly outperform the mean. A p-value of 0.000 suggests a probability of less than 0.05% of observing the outcome due to random chance, allowing the null hypothesis to be rejected. The study shows that every one-unit increase in Social Media Proficiency gives 13.9% increase in Information Searching Behaviour, and one unit increase in digital information accessibility amounts to 14.3% increase in information searching behaviour while controlling for other variables. This result further affirms a positive and significant impact of social media proficiency on information sharing behaviour at $\beta = .139$, $t = 4.419$, $p = .0000$. Digital Information Accessibility also had a positive and significant impact on information sharing behaviour at $\beta = .143$, $t = 4.329$, $p = .000$ with both explaining 11.3% variance of information sharing behaviour at $f = 41.245$ to reject the null hypothesis and accept the alternative hypothesis.

Discussion

The integration of social media and digital technology has been extensively ingrained within the realm of higher education, providing students with versatile platforms that facilitate collaboration, communication, resource sharing, and informal learning. Nevertheless, scholarly



investigations indicate that students need additional development of skills in order to effectively use these technologies in ways that are academically advantageous.

Multiple scholarly investigations have revealed that students engage with social media platforms to a modest extent for academic pursuits. These activities encompass interacting with fellow students to discuss coursework, joining study groups, following academic profiles, and disseminating knowledge ([Al-Kathiri, 2020](#); [Kim et al., 2020](#); [Zheng & Yu, 2022](#)). This indicates a willingness to engage with scholastic pursuits while also acknowledging the potential for further development. Moreover, it is worth noting that students generally demonstrate moderate levels of confidence when it comes to the process of searching for and assessing the reliability of online sources. This suggests a requirement for enhanced digital literacy education that specifically focuses on developing skills in lateral reading, synthesis, and comparative source analysis ([An & Quagliata, 2021](#); [Carpenter et al., 2021](#)).

The satisfactions that serve as motivation for students' utilisation of academic social media platforms also offer valuable insights. In studies conducted by [Gedik et al. \(2021\)](#) and [Tóth-Király et al. \(2021\)](#), students commonly express utilitarian motives such as resource exchange and collaboration, as well as social reasons such as forming relationships and sharing common interests. The implementation of activities that leverage social technology for the dual objectives of collaboration and community-building has the potential to significantly enhance participation. Furthermore, the implementation of specific instructional strategies that focus on the development of specialist skills required for effective utilisation of academic social media platforms, such as online identity management, has the potential to solve identified deficiencies as highlighted in recent studies ([Kelly et al., 2021](#)).

Studies have shown that students effectively utilise digital platforms to engage in collaborative academic activities such as sharing resources, providing feedback to peers, discussing course subjects, and working together on group projects ([Almusharraf & Khahro, 2020](#); [Kim et al., 2020](#); [Neier & Zayer, 2021](#)). Social media and Web 2.0 tools seem to be highly suitable for supporting collaborative tasks. Nevertheless, scholarly investigations have also revealed that the phenomenon of digital distraction continues to pose a significant challenge, potentially impeding the process of student learning ([Dontre, 2020](#); [Lau, 2017](#)). The development of students' self-regulation and metacognitive monitoring skills can potentially assist them in effectively controlling distractions. [Aagaard \(2021\)](#) and [Taylor et al. \(2018\)](#) portrayed that students have reported that taking proactive measures such as deleting applications or deactivating notifications can be beneficial in reducing technological disruptions.

[Bergdahl et al. \(2020\)](#) reiterated that the implementation of educational technology in a purposeful manner has a beneficial impact on engagement. However, it is important to note that research highlights the significance of the quality of engagement rather than the quantity. The cultivation of active and real learning experiences should be the primary objective of multimedia and social technologies, rather than promoting passive modes ([Freitas & Santos, 2021](#); [Muhammad & Amalul, 2020](#)). Furthermore, scholarly investigations have unveiled intricate ramifications of utilising academic technology on the welfare of students, encompassing plausible associations with heightened levels of stress and digital saturation ([Kearney & Maakrun, 2020](#); [Nkomo et al., 2021](#)).

Conclusion

The findings of the study indicate that students possess a modest level of skill when utilising digital tools, such as social media, for academic endeavours. Although individuals engage in online collaboration and communication for educational purposes at quite advanced levels, there are still deficiencies in certain abilities such as critical digital literacy, evaluating



online authenticity, and effectively managing distractions.

Limitations of the study, First, this study used a purposive sample which limits the findings generalisation beyond the study environment. Secondly, the study used only 300 and 400 level students from one out of the four departments in the faculty. It is limited in scope as it relied on two out of the four levels in the LIS programme.

Recommendations, it is recommended that higher education institutions incorporate digital literacy training programmes into their curriculum in order to enhance students' academic technology skills, namely in the domains of online credibility evaluation, identification of disinformation, and comparative source analysis. Educators ought to integrate instructional modules that specifically target the enhancement of students' metacognitive monitoring and self-regulation abilities in order to mitigate the disruptive consequences of digital distractions. It is recommended that academic libraries provide social media literacy workshops specifically designed for scholarly environments. These sessions should encompass many subjects such as managing online identities, promoting ethical knowledge sharing, and utilising social platforms for collaborative learning. Further study could be carried out with demographic variables on Social Media Proficiency, Digital Information Accessibility and Information Sharing Behaviours among Information professionals among. The roles of social media affordance, digital literacy and Information sharing behaviour among the postgraduate Students. Information sharing behaviour of Library personnel through the lens of social exchange theory (SET).

Acknowledgments

We would like to acknowledge and thank all those who have given valuable contributions to this study

Authors' Contributions

All authors have contributed to the final manuscript. The contribution of all authors: conceptualization, methodology, formal analysis, writing original draft preparation, writing review and editing. All authors have read and agreed to the published version of the manuscript.

Conflict of Interest

All authors have no conflict of interest related to this study.

Funding

This study did not receive any funding.

References

- Aagaard, J. (2021). 'From a small click to an entire action': exploring students' anti-distraction strategies. *In Learning, Media and Technology*, 46(3), 355–365). Informa UK Limited. <https://doi.org/10.1080/17439884.2021.1896540>
- Al-Kathiri, F. (2020). Beyond entertainment: Social media use by university students for academic purposes. *Education and Information Technologies*, 25(6), 5657–5675. <https://doi.org/10.1007/s10639-020-10214-0>
- Almusharraf, N. M., & Khahro, S. H. (2020). Students' satisfaction with using social media sites for collaborative learning. *International Journal of Emerging Technologies in Learning*, 15(5), 121–136. <https://doi.org/10.3991/ijet.v15i05.11791>
- An, S., & Quagliata, S. (2021). How skilled are students, really? assessing students' digital literacy skills and performance. *Journal of Research in Innovative Teaching & Learning*. <https://doi.org/10.1108/JRIT-07-2021-0058>



- Arnab, R. (2017). *Survey sampling theory and applications*. Academic Press.
- Azka, S. M., Asmiyanto, T., Babbar, P. (2023). Analysis of Instagram use by Libraries in responding to the COVID-19 Pandemic: A case study of University Libraries in Indonesia. *Record and Library Journal*, 9(1), 105-117. DOI 10.20473/rlj.V9-I1.2023.105-117
- Bashir, I., Malik, A., & Mahmood, K. (2021). Social media use and information-sharing behaviour of university students. *IFLA Journal*, 47(4), 481-492. <https://doi.org/10.1177/0340035221991564>
- Bergdahl, N., Nouri, J., Fors, U., & Knutsson, O. (2020). Engagement, disengagement and performance when learning with technologies in upper secondary school. *In Computers & Education* 149(103783). Elsevier BV. <https://doi.org/10.1016/j.compedu.2019.103783>
- Beydokhti, A., Jokar, M., & Kamali, Z. (2021). Relationship between digital literacy and sustainable employability: A systematic review. *Technology in Society*, 67, 101900. <https://doi.org/10.1016/j.techsoc.2021.101900>
- Carpenter, J. P., Greenhall, M., & Jerome, J. (2021). Twitter in the classroom: Modeling online academic engagement for future educators. *Education Sciences*, 11(4), 151. <https://doi.org/10.3390/educsci11040151>
- Dontre, A. J. (2020). The influence of technology on academic distraction: A review. *In Human Behavior and Emerging Technologies*, 3(3), 379–390). Hindawi Limited. <https://doi.org/10.1002/hbe2.229>
- Freitas, P. V. da S., & Santos, K. G. dos. (2021). Análise bibliométrica sobre o uso de aplicativos e tecnologias móveis no ensino dos processos de separação na Engenharia Química. *In Research, Society and Development*, 10,(11). e39101119155). Research, Society and Development. <https://doi.org/10.33448/rsd-v10i11.19155>
- Erdoğan, C., Çakir, R., & Korkmaz, Ö. (2022). Students' knowledge sharing behaviours and sense of online learning community in online learning environments. *Participatory Educational Research*, 9(3), 46-61. <https://doi.org/10.17275/per.22.53.9.3>
- Gedik, H., Kosa, T., & Kagitcibasi, C. (2021). Uses and gratifications of social media among Turkish emerging adults and youth. *Journal of Adolescent Research*, 36(4), 415–440. <https://doi.org/10.1177/0743558420949248>
- Gray, J. R., & Grove, S. K. (2020). *Burns and grove's the practice of nursing research - E-book: Appraisal, synthesis, and generation of evidence*. Elsevier Health Sciences
- Gülbahar, Y., Rapp, C., Kilis, S., & Sitnikova, A. (2020). Enriching higher education with social media: Development and evaluation of a social media toolkit. *International Review of Research in Open and Distributed Learning*, 21(1), 71–89. <https://doi.org/10.19173/irrodl.v21i1.4532>
- Hapsari, N. F. A., Ardyawin, I., Rohana., Nuzula, D. F., and Hashim, H. (2023). Use of Social Media for Scholarly Communication. *Record and Library Journal*, 9(1), 141-150. DOI 10.20473/rlj.V9-I1.2023.141-150.
- Houser, J. (2016). *Nursing research: Reading, using and creating evidence* (5th ed.). Jones & Bartlett Learning.
- Jaffar, A. A., & Musa, M. F. (2020). Using a Facebook group as a learning management system: Effects on students' achievement and perception. *Smart Learning Environments*, 7(1), 1-22. <https://doi.org/10.1186/s40561-020-00126-7>
- Kearney, S., & Maakrun, J. (2020). Let's Get Engaged: The Nexus between Digital Technologies, Engagement and Learning. *In Education Science*; 10(12). 357. MDPI AG. <https://doi.org/10.3390/educsci10120357>
- Kelly, D. M., Cherkowski, S., & Chen, J. (2021). Virtual induction: The role of social media in



- teacher candidates' transition to the profession. *Education Sciences*, 11(11), 729. <https://doi.org/10.3390/educsci11110729>
- Kelly S (2010) *Qualitative interviewing techniques and styles*. In: Bourgeault I, Dingwall R and de Vries R (eds) *The Sage Handbook of Qualitative Methods in Health Research*. Thousand Oaks: Sage Publications
- Kim, S., Wang, L., & Oh, J. (2020). Digital academic information sharing: undergraduate students' Twitter use for academic purposes. *Information Research*, 25(3), paper 862. <http://informationr.net/ir/25-3/paper862.html>
- Klein, E. E., Taylor, M., Onwuegbuzie, A. J., & Sortino, S. (2022). Assessing Graduate Students' Awareness of Fake News, Misinformation, and Disinformation. *International Journal on Social and Education Sciences*, 4(1), 148-168. <https://doi.org/10.46328/ijonses.249>
- Lau, W. W. F. (2017). Effects of social media usage and social media multitasking on the academic performance of university students. *Computers in Human Behavior*, 68, 286-291. <https://doi.org/10.1016/j.chb.2016.11.043>
- Levinsen, K. T., Tømte, C. E., Smette, I., & Dilla, T. (2022). Digital literacy and computational thinking in schools—A systematic literature review. *Computers & Education*, 177, 104399. <https://doi.org/10.1016/j.compedu.2022.104399>
- Muhammad, S., & Amalul, U.(2020). Understanding students learning experiences in the digital age. 8(2), 112-122. DOI: <https://doi.org/10.22460/eltin.v8i2.p112-122>
- Neier, S., & Zayer, L. T. (2021). Students' digital knowledge sharing: comparing peer and non-peer sharing. *Education and Information Technologies*, 26(6), 6939–6957. <https://doi.org/10.1007/s10639-021-10555-3>
- Nkomo, L.M., Daniel, B.K. & Butson, R.J.(2021). Synthesis of student engagement with digital technologies: a systematic review of the literature. *Int J Educ Technol High Educ* 18, 34. <https://doi.org/10.1186/s41239-021-00270-1>
- Onojah, A. O., Obielodan, O. O., Onojah, A. A., Ajala, A. S., Sotuminu, R. E., & Sulaimon, K. S. (2020). The proficiency of undergraduates in utilizing social media for learning in Nigeria. *Indonesian Journal of Curriculum and Educational Technology Studies*, 8(1), 32-41. <https://doi.org/10.15294/ijcets.v8i1.38157>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2013). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533-544. <https://doi.org/10.1007/s10488-013-0528-y>
- Tananuraksakul, N. (2020). An investigation into undergraduate students' readiness for social media-based collaborative learning: The case of COVID-19 pandemic. *International Journal of Information and Education Technology*, 10(8), 574-581. <https://doi.org/10.18178/ijiet.2020.10.8.1450>
- Tang, Y. M., & Hew, K. F. (2021). Using Facebook for team project discussion in a tertiary engineering design classroom: Effects on learning and engagement. *Journal of Computing in Higher Education*, 33(1), 214–234. <https://doi.org/10.1007/s12528-020-09241-x>
- Taylor, J., Salvagno, M., Morris, R., Hutchings, M., & Bobeva, M. (2018). Evaluating and measuring how new technologies and ubiquitous connectivity affect university students' psychosocial wellbeing. *In Psychology Teaching Review*, 24(1). 21–34). British Psychological Society. <https://doi.org/10.53841/bspstr.2018.24.1.21>
- Tóth-Király, I., Bóthe, B., Rigó, A., & Orosz, G. (2021). An illustration of the online social learning experience: Connecting academic motivation to social media usage.



Computers in Human Behavior, 124, N.PAG.
<https://doi.org/10.1016/j.chb.2021.106918>

- Variant Anna, N. E. (2017). Information sharing through social network sites by University students in Indonesia. *Proceedings of the International Post-Graduate Conference on Media and Communication*. <https://doi.org/10.5220/0007328002750278>
- Walinga, J. (2010). *Introduction to psychology: 1st Canadian edition*. BCcampus Open Education. <https://open.umn.edu/opentextbooks/textbooks/427>
- Zheng, C., & Yu, W. (2022). Students' social media literacy and informal academic learning in China. *Education and Information Technologies*, 27(1), 317–335. <https://doi.org/10.1007/s10639-021-10582-0>

