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Crtical Article

The Role of Social Media Literacy in Supporting Digital Transformation of University Learning Systems

Abstract

Social media literacy has become an essential competence in higher education as universities accelerate their digital transformation efforts. This study examines how social media literacy among students and lecturers supports the effectiveness of university learning systems in digital environments. Using a mixed-methods approach, quantitative survey data were collected from Marine Engineering undergraduates, while qualitative insights were obtained from interviews with university lecturers. The findings indicate that students demonstrate varying levels of literacy across four dimensions: access, analysis, evaluation, and ethical content creation. Higher literacy levels are significantly associated with stronger digital engagement, including active participation in online discussions, effective use of learning management systems, and improved responsiveness in academic communication. Lecturers with stronger social media literacy show greater readiness to integrate digital communication tools into pedagogical practice, contributing to more interactive and connected learning environments. The study highlights that social media literacy functions not only as a technical skill but also as a strategic communication capability that supports institutional digital transformation. Implications include the need for universities to strengthen literacy programs, enhance digital pedagogy training, and develop policies that promote responsible and effective digital communication.

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1. Introduction

The rapid evolution of digital technologies has transformed the landscape of higher education, reshaping how universities design learning environments, deliver instructional content, and facilitate academic communication. As institutions across the world accelerate their efforts toward digital transformation, one dimension has become increasingly central yet often underestimated: the role of social media literacy [1] [2]. Social media is no longer a peripheral element of students'

daily interactions; it has become an essential part of how they access information, collaborate with peers, and engage with academic communities. At the same time, lecturers and educational managers are expected to adapt to these evolving modes of communication to ensure that digital learning systems operate effectively and inclusively. In this context, social media literacy functions not only as a technical skill but also as a critical communication competence that shapes how university stakeholders participate in digitalized learning ecosystems [3] [4].

Digital transformation in higher education refers to the integrated and strategic adoption of digital technologies to enhance teaching, learning, administration, and institutional management. Universities implement learning management systems (LMS), digital content repositories, hybrid learning platforms, and virtual collaboration tools as part of this transformation. However, the success of such initiatives depends not solely on the availability of technology but also on the ability of users' students, lecturers, and administrators to engage meaningfully with digital platforms. Social media platforms, despite not being formal educational tools, often act as complementary channels for learning interactions [5] [6]. They enable rapid dissemination of information, foster collaborative dialogue, and provide flexible spaces where academic communities can exchange knowledge. Consequently, social media literacy becomes a bridge between institutional digital systems and the communication practices of their users [7].

As learning cultures shift from traditional face-to-face interactions toward hybrid and fully online formats, communication norms within universities also undergo significant changes. Students increasingly rely on social media to ask questions, share learning resources, organize study groups, and clarify course materials [8]. Lecturers use digital communication channels to provide announcements, feedback, and supplementary content. Nevertheless, the ability to interpret, evaluate, and produce digital messages varies widely among users. Some students may possess strong creative and collaborative skills online but struggle to assess the credibility of digital information [9]. Others may be proficient in consuming content but lack the competence to engage ethically and responsibly in digital communication spaces. These disparities illustrate that social media literacy is not evenly distributed, creating gaps in participation and engagement that directly influence the digital learning experience.

The digital divide within university environments has also become more visible as technology becomes integral to everyday academic practice. While digital transformation aims to increase accessibility and enhance learning quality, uneven levels of digital literacy especially social media literacy, unintentionally reinforce inequalities. Students with limited skills in navigating social media may miss academic opportunities shared through these platforms, misunderstand digital instructions, or feel disengaged from online academic communities [10] [11]. Similarly, lecturers who lack confidence or competence in digital communication may struggle to maintain student engagement, deliver clear instructions, or integrate digital tools effectively into pedagogy. These challenges highlight that the success of digital transformation is shaped not only by infrastructure and institutional policy but also by the communication capacities of individuals within the system.

Despite the rising importance of social media literacy, research exploring its contribution to digital transformation in higher education remains limited [12]. Existing studies tend to focus on general digital literacy, online learning readiness, or the integration of technology into pedagogy. While these perspectives provide valuable insights, they often overlook the distinct role of social media as a communication space that influences how learning interactions occur. Social media literacy encompasses the ability to analyze digital messages, evaluate credibility, create responsible content, and engage ethically in online communities' competencies that are highly relevant to learning systems yet not widely measured in relation to transformation initiatives. Furthermore, most prior research concentrates on either student behavior or lecturer practices, without examining how both groups collectively contribute to the broader digital ecosystem of a university [13].

Another gap in literature concerns the practical role of social media literacy in facilitating the strategic objectives of digital transformation. Universities aim not only to digitize learning materials but also to cultivate interactive, communicative, and collaborative learning cultures. Social media platforms inherently support these goals by enabling multidirectional communication and rapid

knowledge exchange. However, without adequate literacy skills, users may misuse platforms, spread misinformation, or fail to engage in productive academic dialogue. Little empirical work has been conducted to understand how social media literacy strengthens institutional readiness for digital change, enhances academic communication, or supports the implementation of technology-enhanced learning strategies [14].

In response to these gaps, this study examines the role of social media literacy in supporting the digital transformation of university learning systems. The research investigates how social media literacy among students and lecturers influences engagement in digital learning environments, affects communication effectiveness, and contributes to the broader goals of educational transformation. By focusing on the intersection between communication competence and digital system adoption, the study aims to provide a deeper understanding of how universities can strengthen their digital ecosystems through the development of social media literacy. The findings are expected to inform institutional policy, curriculum design, professional development programs, and strategies for building inclusive and responsive digital learning cultures.

2. Literature review

Social media literacy has emerged as a crucial extension of digital literacy in contemporary communication environments, particularly within higher education ecosystems undergoing rapid technological transformation. At its core, social media literacy refers to the set of competencies that allow individuals to access, analyze, evaluate, create, and ethically participate in social media platforms. These competencies require not only technical ability but also critical thinking, media awareness, and an understanding of digital ethics. Access refers to the ability to navigate different social media platforms and utilize their features for communication and information sharing. Analysis involves interpreting the meaning, context, and intention of digital messages. Evaluation requires assessing the credibility, reliability, and accuracy of information circulated online. Ethical engagement emphasizes respectful, responsible, and culturally sensitive communication practices. Content production, meanwhile, highlights users' ability to create clear, meaningful, and contextually relevant messages that contribute positively to digital communities. Together, these components position social media literacy as a multidimensional competence that shapes how students and lecturers interact within digital learning environments [15].

Within the broader framework of higher education, social media literacy is increasingly viewed as essential because social media has become a parallel ecosystem to institutional learning systems. Students today engage in academic discussions through messaging groups, online communities, forums, and social media channels. These spaces supplement formal learning management systems (LMS) by providing flexible, peer-driven environments for collaborative learning. However, effectiveness in these environments' hinges on students' literacy skills. Research shows that learners with higher levels of media literacy tend to engage more actively in online discussions, demonstrate better critical thinking in digital spaces, and show stronger digital citizenship behaviors. These competencies help prevent the spread of misinformation, reduce miscommunication, and support more meaningful academic collaboration. Instructors who possess strong social media literacy are likewise better equipped to use digital platforms to communicate instructions, provide feedback, build rapport, and create engaging learning experiences.

Digital transformation in higher education refers to the strategic and holistic integration of digital technologies into teaching, learning, administration, and institutional decision-making. This transformation shifts universities from traditional, paper-based and face-to-face systems to dynamic digital ecosystems that include LMS platforms, video conferencing applications, digital repositories, and automated administrative systems. Key elements of digital transformation include the digitalization of learning materials, hybrid learning models, digital pedagogy, and the cultivation of digital communication cultures. LMS platforms such as Moodle, Google Classroom, and Canvas act as the central hubs of university learning systems, enabling the distribution of content, assessment, and communication. Hybrid or blended learning models integrate online and offline methods, requiring students and lecturers to operate confidently within digital spaces. Digital

pedagogy emphasizes the pedagogical strategies required to facilitate learning through digital tools, including multimedia content, asynchronous discussion forums, and interactive platforms. The success of these digitalization efforts depends significantly on users' digital readiness, which includes competencies related to social media literacy [16].

Figure 1. Lecturers and students interact through digital devices in a hybrid classroom setting.

Communication theory provides an essential lens for understanding how messages are transmitted, interpreted, and responded to within digital learning environments. In traditional communication models, effective communication requires clarity, shared understanding, and appropriate channels. In digital learning systems, these principles remain but are complicated by the nature of computer-mediated communication. According to the Social Presence Theory, learners need to perceive others as "real" within digital environments to engage meaningfully. Social media literacy enhances this presence by enabling users to communicate clearly, respectfully, and thoughtfully through digital messages. The Media Richness Theory further explains that different communication channels vary in their capacity to convey information effectively. Social media offers high immediacy and interactivity, allowing for rapid feedback, collaborative exchanges, and nuanced communication. When users are literate in navigating and interpreting these interactions, communication flows more smoothly and learning outcomes improve. Finally, Cognitive Load Theory highlights that poorly structured digital communication can overwhelm learners, reducing engagement and comprehension; social media literacy mitigates this risk by enabling users to filter, organize, and engage with information more effectively [17].

Existing studies offer important insights into the relationship between digital literacy and academic outcomes. Numerous researchers have found that higher levels of digital literacy correlate with increased engagement in online learning environments. Students who are competent in evaluating online information demonstrate stronger academic performance, critical thinking, and digital confidence. For example, studies have shown that learners who possess strong media evaluation skills are less likely to be misled by misinformation and more likely to participate in productive knowledge exchanges. Research also highlights the importance of instructors' digital competencies, noting that lecturers with strong digital communication abilities foster more inclusive and interactive online classrooms. Similarly, digital literacy has been linked to stronger institutional readiness for digital transformation, as individuals with such competencies are more adaptable, efficient, and open to technological innovation.

Despite the valuable contributions of these studies, a significant gap remains in the literature regarding the specific role of social media literacy in supporting digital transformation in higher education. While many studies focus broadly on digital literacy, fewer examine how social media-specific competencies shape communication processes within digital learning systems. Social media is a distinctive communication space with unique norms, affordances, and ethical challenges. It supports the rapid spread of information, fosters peer-to-peer dialogue, and facilitates multidirectional communication, all of which influences how digital learning cultures take shape

[18]. Yet, research investigating how these competencies contribute to institutional transformation particularly in relation to LMS adoption, digital engagement, and communication effectiveness is still limited. Most prior research treats social media as an external or supplementary tool rather than an embedded component of students' daily learning interactions.

Furthermore, current literature tends to separate the digital experiences of students and lecturers, rarely exploring how the interaction between these two groups shapes digital transformation outcomes. Understanding this interaction is crucial because the effectiveness of digital learning systems depends not only on individual skills but also on the collective communication culture within the institution. There is also limited empirical work focusing on universities in developing countries, where disparities in social media literacy may be more pronounced due to unequal access to technology, differences in digital exposure, and varying levels of institutional support.

This study addresses these gaps by examining how social media literacy among both students and lecturers contributes to the success of digital transformation initiatives in university learning systems. By focusing on competencies such as analysis, evaluation, ethical engagement, and content production, the study seeks to explain how social media literacy strengthens communication effectiveness, enhances engagement with digital platforms, and supports institutional readiness for digital innovation. The findings aim to advance theoretical understanding, guide policy development, and inform practical strategies for building digitally competent learning communities in higher education.

3. Methods

This study adopts a mixed-methods research design to provide a comprehensive understanding of how social media literacy contributes to the digital transformation of university learning systems. The mixed-methods approach is chosen to capture both the measurable dimensions of social media literacy among students and the deeper experiential insights from lecturers regarding digital communication practices. Quantitative data offers statistical evidence of literacy levels and their relationship to digital engagement, while qualitative data provides contextual explanations for how these competencies shape teaching and learning processes.

The quantitative phase focuses on undergraduate students enrolled in the Marine Engineering Department at a public university. This population is selected because students in engineering fields often rely heavily on digital platforms for accessing course materials, collaborating on projects, and engaging in online discussions, making them a relevant group for examining social media literacy within digital learning environments. A sample size of approximately 120–150 students is targeted using convenience sampling. Data is collected through an online survey distributed via learning management systems and departmental communication channels.

The survey instrument consists of a structured questionnaire developed based on established social media literacy frameworks. It includes four key dimensions: access competency, analytical competency, evaluation competency, and ethical-content creation competency. Each dimension is measured using a series of Likert-scale items ranging from strongly disagreement to strongly agree. Access items assess students' familiarity with platform features and ability to navigate digital tools. Analytical items measure the ability to interpret messages and understand context. Evaluation items focus on assessing credibility and identifying misinformation. The ethical-content creation dimension captures responsible communication, online behavior, and content production skills. Additional items measure digital engagement, perceived usefulness of digital learning systems, and frequency of using social media for academic purposes.

Quantitative data are analyzed using descriptive statistics to identify literacy profiles among students, followed by correlation and simple regression analyses to examine relationships between social media literacy and digital engagement variables. These analyses are conducted using standard statistical software packages. The qualitative phase involves semi-structured interviews with five to eight lecturers who actively use digital platforms in their teaching. The interview questions explore lecturers' perspectives on communication challenges, social media behavior of students, and the

role of literacy in enhancing digital pedagogy. Interview data are transcribed and analyzed using thematic analysis, allowing recurring patterns and insights to emerge.

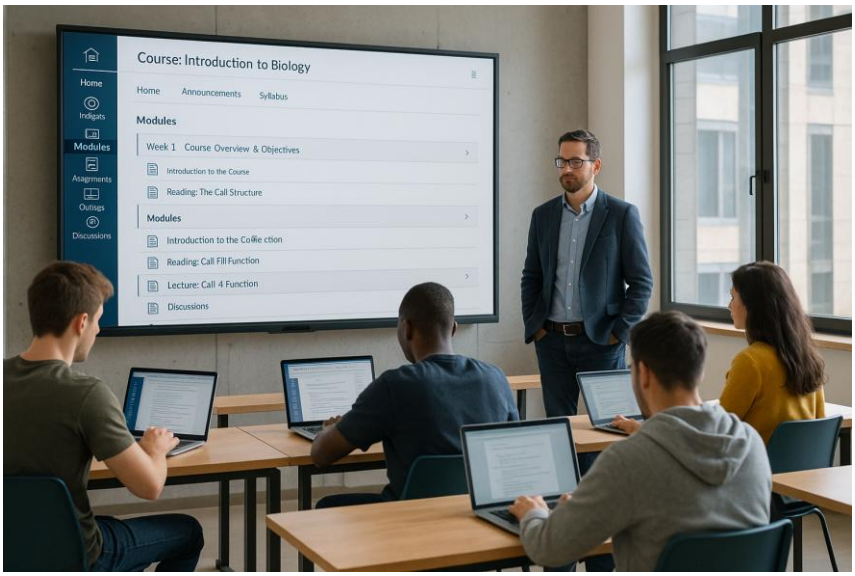

Figure 2. Modern classrooms with large screens displaying LMS, students studying with laptops

Ethical procedures are carefully observed throughout the study. Participation is voluntary, informed consent is obtained prior to data collection, and respondents are assured of confidentiality and anonymity. Data is used solely for research purposes and stored securely. Approval from the university's research ethics committee is obtained before the study begins. The combination of quantitative and qualitative approaches ensures a robust methodological foundation for explaining how social media literacy supports the broader goals of digital transformation in higher education.

4. Results

The quantitative and qualitative findings of this study provide a comprehensive picture of how social media literacy shapes engagement with university digital learning systems. Descriptive statistics from the student survey indicate that overall levels of social media literacy among Marine Engineering undergraduates are moderately high, with the highest scores recorded in the access competency dimension. Students generally demonstrate strong familiarity with common platform features, such as group messaging, file sharing, and collaborative tools integrated into applications commonly used in academic settings. Analytical competencies are also relatively well-developed, with many respondents' confidence in interpreting digital messages and distinguishing between academic and non-academic communication cues. However, the evaluation dimension shows a more varied distribution, suggesting that not all students are consistently able to verify the credibility of information circulating on social media. Ethical-content creation scores are moderate, indicating that while students understand basic norms of responsible online behavior, only a portion of them actively apply these principles in academic communication.

Figure 3. Transformasi Digital in University

Correlation and regression analyses reveal a positive and statistically significant relationship between social media literacy and digital engagement. Students with higher literacy scores report greater participation in online discussions, more frequent use of learning management systems, and stronger willingness to engage with digital learning materials shared through informal channels. Regression results indicate that evaluation and ethical-content creation competencies are the strongest predictors of meaningful digital engagement, suggesting that students who can critically assess information and produce responsible content are more likely to contribute constructively to digital learning environments. Access competency, while foundational, appears to be less influential in predicting engagement, likely because familiarity with social media platforms is already widespread among the student population.

The qualitative findings from lecturer interviews strengthen and contextualize the quantitative results. Lecturers report that students with higher social media literacy tend to communicate more clearly, respond more promptly to academic instructions, and participate actively in class-related digital interactions. They also note that these students exhibit stronger digital etiquette, such as asking questions respectfully, sharing resources appropriately, and maintaining academic professionalism in online discussions. Lecturers with high social media literacy themselves show greater readiness to integrate digital communication tools into their teaching. They are comfortable using social media as supplementary learning channels, sharing instructional videos, posting reminders, and facilitating informal academic dialogue. Conversely, lecturers with lower literacy levels express concerns about managing digital communication overload, misinterpretation of messages, and maintaining boundaries between personal and academic interactions.

The study also identifies emerging trends in academic communication through social media platforms. WhatsApp groups, Telegram channels, and Instagram learning communities appear to function as extended learning spaces where students coordinate assignments, seek clarification, and collaborate informally. While these platforms are not institutional tools, their widespread adoption reflects students' preference for fast, flexible communication channels that complement the structured environment of LMS platforms. However, reliance on informal platforms also creates new challenges, including inconsistent message quality, information overload, and unequal participation. These findings illustrate the central role of social media literacy in navigating the benefits and limitations of academic communication within digital learning ecosystems.

5. Discussion and Implications

The findings of this study demonstrate that social media literacy significantly influences how students and lecturers participate in university digital learning systems. High levels of literacy

enhance academic communication by enabling users to interpret messages accurately, assess information credibility, and engage ethically in digital spaces. This strengthens the coherence and effectiveness of communication flows within the digital ecosystem, reducing misunderstandings and promoting meaningful interaction. In line with communication theory, social media literacy enhances social presence and media richness, allowing students and lecturers to form more authentic and responsive communication exchanges. These competencies support smoother transitions between synchronous and asynchronous interactions, improving engagement across hybrid learning environments [19].

In digital learning contexts, communication quality is a key determinant of learning effectiveness. Students who are literate in interpreting digital cues and evaluating online information are better able to follow instructions, engage with complex materials, and collaborate with peers. Their ability to create responsible and clear content contributes to healthier digital learning communities. The findings also highlight the importance of ethical engagement, particularly in preventing the spread of misinformation and minimizing unproductive conflict in online spaces. When social media literacy is weak, communication patterns become fragmented, leading to confusion, frustration, and disengagement. This emphasizes that digital transformation is not solely an infrastructural challenge but also a communicative one [20].

From the perspective of educational management, these results carry critical implications. First, universities need to integrate social media literacy into institutional strategies for digital transformation. This may include revising curricula to incorporate digital literacy modules, particularly those emphasizing evaluation and ethical communication. Second, professional development programs for lecturers should focus on strengthening digital communication competencies, enabling them to manage digital platforms confidently and use social media strategically to enhance pedagogical effectiveness. Third, institution-wide policies should be developed to promote responsible use of social media in academic contexts, addressing issues such as digital etiquette, academic integrity, and communication boundaries.

A strong culture of digital literacy also supports broader organizational change. Universities undergoing digital transformation require staff and students who are adaptable, communicative, and capable of navigating emerging technologies. Social media literacy can contribute to the development of such a culture by promoting collaborative norms, encouraging open knowledge-sharing, and strengthening stakeholder relationships. Finally, digital facilities and infrastructure must be enhanced to support these communication practices. Investments in reliable internet access, device support, and integrated communication tools will amplify the benefits of literacy initiatives.

Overall, the study reinforces the idea that social media literacy is both a practical skill set and a strategic asset for universities seeking to modernize their learning systems. It provides a foundation for building interactive, inclusive, and responsive digital learning environments that align with contemporary educational demands.

6. Conclusion

This study examined the role of social media literacy in supporting the digital transformation of university learning systems, focusing on students and lecturers within a Marine Engineering program. The findings reveal that social media literacy is multifaceted, encompassing competencies in access, analysis, evaluation, ethical engagement, and content creation. Students' literacy levels significantly influence their digital engagement, particularly their willingness to participate in online academic interactions and their ability to navigate communication challenges within digital environments. Lecturers' perspectives further highlight the importance of literacy in fostering effective digital pedagogy and maintaining constructive communication cultures.

The study contributes theoretically by clarifying the relationship between social media literacy and digital transformation, emphasizing the communicative dimension of institutional digitalization. Practically, the findings underscore the need for universities to adopt policies and programs that strengthen both student and lecturer literacy to enhance the effectiveness of digital learning

systems. Limitations of the study include the focus on a single department and reliance on self-reported measures, which may not fully capture actual literacy behaviors. Future research could expand the sample to multiple faculties, incorporate experimental designs, or examine the impact of targeted literacy interventions over time.

Ultimately, this research demonstrates that social media literacy is not simply an individual competence but a foundational element of digital educational ecosystems. Strengthening this literacy will be essential for universities aiming to build resilient, adaptive, and communicative learning environments in the era of digital transformation.

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