

PROMOTING CRITICAL THINKING AND ENGAGEMENT THROUGH DIGITAL AND MEDIA LITERACY IN HIGHER EDUCATION

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Abstract

In the digital era, the ability to engage with digital technologies and media critically is essential for student success in higher education. Digital and media literacy (DML) equips learners with the necessary skills to access, analyze, evaluate, and create content across platforms while engaging responsibly in digital environments. Although the urgency of DML integration is widely acknowledged, research shows a lack of comprehensive, interdisciplinary implementation in university curricula and limited attention to how DML supports critical thinking and student engagement. This paper aims to explore how digital and media literacy can be strategically implemented in higher education to foster students' critical thinking and meaningful academic engagement. This study adopts a qualitative, content-based approach by analyzing current frameworks and synthesizing insights from scholarly literature on digital pedagogy. Findings suggest that embedding DML across disciplines using instructional design models like TPACK and ADDIE, employing collaborative tools such as Padlet and Canva, and promoting ethical media analysis can enhance critical thinking. Key barriers include inequitable access and insufficient educator training. Effective DML integration can transform higher education by preparing students for academic, professional, and civic life in the digital age.

Keywords: *digital literacy; media literacy; critical thinking; higher education; student engagement*

INTRODUCTION

The rapid advancement of digital technologies has significantly transformed how knowledge is created, distributed, and consumed, reshaping the landscape of education at all levels. In higher education, students are no longer merely passive recipients of information; they are expected to

function as critical consumers, ethical producers, and active participants in a complex digital society (Haleem et al., 2022; Nurholis et al., 2025). This evolution calls for a reevaluation of the skills and competencies universities must cultivate in their learners. Among the most essential of these competencies are digital and media literacy (DML), which form the foundation of 21st-century learning and responsible civic engagement.

Digital literacy is broadly defined as the ability to locate, evaluate, and use digital tools and content effectively, combining technical proficiency with cognitive understanding and social responsibility (Khan et al., 2021; Pertwi, 2022; Røkenes & Krumsvik, 2016). Media literacy, in parallel, refers to the critical capacity to access, interpret, evaluate, and create media across diverse platforms (Jiang, 2025). These two literacies intersect in their goal to develop individuals who can navigate digital environments with critical awareness, ethical reasoning, and participatory competence. (Li et al., 2021a) argue that such skills are essential for resisting disinformation, recognizing bias, and maintaining autonomy in digital communication.

From a theoretical perspective, DML aligns closely with constructivist learning theory, which asserts that learners actively construct knowledge through interaction, reflection, and engagement with real-world problems. In this view, digital tools and media texts serve not just as content but as cognitive instruments that facilitate deeper learning and meaning-making. DML also draws from critical pedagogy (Dorr, 2017; Li et al., 2021b; Su & Guo, 2024), which emphasizes the importance of questioning dominant narratives, power structures, and ideologies—precisely the type of engagement that media literacy promotes in educational settings.

In the context of higher education, DML is increasingly recognized not merely as an auxiliary skill but as a core educational imperative. It underpins lifelong learning, digital citizenship, and professional adaptability in a fast-evolving labor market. (Li et al., 2021a; Sri Lengkanawati & Wirza, 2021; Syathroh et al., 2020) suggest that media literacy strengthens emotional and cognitive resilience, particularly in confronting manipulative content and ideological framing. (Belo et al., 2016) further argue that integrating DML into university curricula prepares students for emerging careers in data analytics, digital communication, UX design, and media analysis. These roles demand not only technical fluency but also the ability to think critically, solve problems, and collaborate in diverse digital environments.

Despite this growing consensus, the practical implementation of DML remains uneven and fragmented across institutions. (Jiang, 2025; Khan et al., 2021; Li et al., 2021a) found that digital literacy programs are often confined to computer science or communication departments, with limited integration into humanities or education fields. This fragmented approach reduces opportunities for students to engage critically with digital content in varied academic and real-world contexts. There is also a lack of coherent policy support and training for faculty to implement DML meaningfully across disciplines.

A review of recent empirical studies confirms these challenges and underscores the need for systemic reform. (Pramudita, 2023; Tran & Ma, 2025) revealed significant disparities in students' ability to identify credible sources and evaluate digital information, highlighting the inconsistency of DML instruction. (Hadi et al., 2021; Yundayani et al., 2019) found that collaborative platforms such as Padlet and Canva support digital production skills and enhance peer-to-peer learning, making digital literacy instruction more dynamic and participatory.

However, the success of DML also depends on the readiness of educators. (Sarosa, 2017) explored the psychological and pedagogical preparedness of lecturers and found that many lacked confidence in applying digital tools, despite acknowledging their importance. Without adequate institutional training and infrastructure, even well-designed DML programs may fail to reach their full potential. (Haleem et al., 2022) highlighted another structural barrier: digital inequality. Their study revealed that students from underprivileged or rural backgrounds often face difficulty accessing reliable internet, modern devices, or digital content—conditions that directly hinder equitable participation in DML-enhanced learning environments.

From the perspective of a lecturer and doctoral student in English language education, I have personally observed the consequences of these challenges. Many first-year university students struggle with critical thinking, source evaluation, and digital expression, particularly when transitioning from secondary school environments that emphasize rote memorization over reflective engagement. This underscores the need to position DML not as optional enrichment but as an essential pillar of general education. DML should empower students not only to consume information passively but to critique, contextualize, and create it meaningfully.

Given these challenges and opportunities, there is a strong justification for continued scholarly inquiry into the practical integration of digital and media literacy in higher education. The objective of this study is to explore how DML can be effectively embedded into university curricula to enhance critical thinking and student engagement. This paper synthesizes insights from recent empirical studies, pedagogical models, and reflective classroom practice to propose concrete strategies for integrating DML in ways that are pedagogically sound, inclusive, and responsive to the realities of higher education today.

METHOD

This study adopts a qualitative descriptive approach, which is particularly suitable for exploring educational issues grounded in real-world contexts and synthesizing conceptual insights from a variety of scholarly sources. According to (Creswell, 2018), qualitative descriptive research aims to understand and interpret phenomena through systematic textual analysis rather than numerical

data. It is especially useful when the goal is to provide a rich, comprehensive narrative of a particular educational concern—in this case, the integration of digital and media literacy (DML) in higher education to promote critical thinking and student engagement.

(Silverman, 2013) emphasizes that qualitative research does not seek generalization through large-scale sampling, but rather depth, clarity, and contextual relevance. Similarly, (Fraenkel et al., 2023) argue that qualitative descriptive studies are appropriate when researchers aim to describe current practices, challenges, or innovations in a clear and structured manner, often relying on document analysis or expert literature review.

The research procedure involved several key stages. First, a literature mapping process was carried out to identify relevant academic publications on digital and media literacy in higher education. Databases such as Google Scholar, Scopus, ERIC, and ResearchGate were used to collect sources. The search included keywords such as *digital literacy*, *media literacy in university education*, *critical thinking*, *instructional design*, and *student engagement*. To maintain the credibility and relevance of the sources, only peer-reviewed journal articles, academic conference papers, and institutional frameworks published between 2019 and 2025 were selected.

Second, the inclusion criteria for selecting literature were established. Sources were chosen based on three main factors: (1) the study's focus on higher education contexts, (2) the explicit discussion of digital or media literacy, and (3) relevance to critical thinking or student-centered pedagogy. Studies from various countries were included, but there was particular attention given to those set in Asian or Indonesian higher education environments to provide contextual alignment.

Third, the selected documents were analyzed using thematic content analysis. This involved reviewing each source in detail and coding key ideas into themes such as curriculum integration strategies, instructional models (e.g., TPACK, ADDIE), collaborative tools (e.g., Padlet, Canva), institutional support, and implementation challenges. This process aligns with Silverman's (2013) suggestion that document-based qualitative research should focus on patterns, emerging themes, and interpretive insights rather than mere frequency of terms.

Finally, to enrich the conceptual discussion, the findings from the literature were compared and synthesized alongside the author's own teaching experience as a lecturer at a private university in Bandung, Indonesia. This reflective positioning allowed for practical contextualization of global research findings, as the challenges of student digital engagement, critical thinking, and pedagogical adaptation were observed firsthand in local classrooms.

Through this methodology, the study aims to generate a well-rounded, practice-oriented understanding of how DML can be integrated into higher education to foster student agency, critical literacy, and equitable learning outcomes.

RESULTS AND DISCUSSION

This study sought to explore how digital and media literacy (DML) can be effectively implemented in higher education to enhance critical thinking and student engagement. Thematic analysis of current scholarly literature and classroom reflection revealed several key findings, discussed below under three main areas. These findings are generally aligned with previous research, especially in the context of integrating DML to support student-centered, critical, and inclusive education.

1. Strategic Integration of Digital and Media Literacy into Curriculum

The study found that digital and media literacy is most effective when integrated across various disciplines, not confined to ICT-based courses. When DML is embedded into fields such as education, humanities, and social sciences, students gain critical literacy and digital competencies relevant to their specific academic and professional contexts. Moreover, applying instructional design models like TPACK and ADDIE allows for alignment between content, pedagogy, and digital tools, encouraging authentic and higher-order learning.

These findings support earlier work by (Sri Lengkanawati & Wirza, 2021), who emphasized that cross-disciplinary embedding of DML increases student engagement and academic participation. Similarly, (Rodliyah, 2016)(Syathroh et al., 2019)noted that university programs that incorporate digital literacy holistically are more likely to prepare students for modern, tech-driven careers. Furthermore, (Bilyalova, 2017; Hamer & Lely, 2019; Hossain, 2024; Lee & Mao, 2024)showed that students exposed to diverse assessment types—such as digital portfolios and media critiques—develop stronger metacognitive and evaluative skills.

These results confirm the original objective of the study—to understand how DML can support critical thinking in higher education. Unlike traditional curricula that isolate digital skills into specific modules, this research highlights the value of curriculum-wide integration. The significance lies in rethinking academic design itself, not just adding technology to existing structures. Compared to prior models, this approach encourages deeper intellectual engagement and fosters critical digital citizenship across academic domains.

2. Student-Centered and Critical Pedagogies

The findings also suggest that interactive and collaborative pedagogies are vital to DML success. Tools like Padlet, Canva, and Google Workspace support active learning, peer interaction, and the development of digital creation skills. Approaches such as flipped classrooms and blended learning help students develop autonomy and analytical thinking, which are key components of both digital and media literacy.

These findings align with (Rahmanu & Molnár, 2024; Syathroh et al., 2020), who demonstrated that student-centered use of collaborative platforms increases communication skills and critical engagement. (Alwasilah, 2019; Dorr, 2017; Inayah & Rahayu, 2022) also proposed project-based and interactive formats as key to developing DML competencies, showing that students benefit from real-world, problem-based learning contexts. In addition, (Chen et al., 2025; Emilia, 2010; Grabe & Zhang, 2013) stressed the importance of critical thinking through DML tasks like identifying misinformation and analyzing media bias—tasks that this study affirms through reflective pedagogical application.

This reinforces the argument that how DML is taught matters as much as what is taught. Compared to prior studies that focus on technical access or digital proficiency alone, this study reveals that critical engagement depends heavily on instructional design. By creating space for student agency, reflection, and discussion, educators transform DML from a technical skillset into a tool for critical inquiry. This not only affirms the current research goals but also suggests an instructional shift toward active participation and intellectual autonomy.

3. Institutional Challenges and Future Directions

While the integration of DML presents many opportunities, this study also identified persistent challenges. These include unequal access to devices and internet infrastructure, particularly for students from rural or underfunded institutions. Another challenge is the lack of systematic professional development for lecturers, many of whom are underprepared for digital pedagogy despite recognizing its value.

The findings of this study clearly resonate with broader concerns in the field of digital and media literacy (DML), particularly in terms of institutional readiness and equitable access. Notably, this study supports the findings of (Bilyalova, 2017; Dini et al., 2024; Røkenes & Krumsvik, 2016), who conducted an empirical investigation into how digital inequality hinders the implementation of DML, especially among first-year university students. Their study revealed that students from rural, underprivileged, or resource-limited backgrounds often lack access to adequate infrastructure, such as high-speed internet, updated digital devices, and reliable online platforms. This digital divide creates a structural barrier that prevents many students from engaging meaningfully in digital learning environments.

In parallel, (Pratiwi et al., 2023; Rahayu & Khairi, 2025; Rodliyah, 2018) examined the extent to which faculty members are prepared to integrate digital and media literacy into their teaching practices. Her findings revealed a gap between institutional policy frameworks, which often promote digital transformation rhetorically, and the practical pedagogical readiness of lecturers on

the ground. Many instructors, she found, lack not only the technical skills required to use emerging educational technologies, but also the pedagogical knowledge to design critical, reflective, and collaborative digital learning activities. Their unfamiliarity with instructional tools, digital curation strategies, and interactive media design results in surface-level DML instruction, which does not align with the transformative aims of 21st-century education.

This study extends these previous findings by offering a more integrated interpretation of digital inequality—not merely as a technical or infrastructural deficit, but as a pedagogical and institutional dilemma. While Shnaikat et al. highlighted physical access, and Mardiana emphasized faculty competency, the present study connects these two layers by demonstrating how gaps in digital infrastructure and teacher readiness intersect to directly impact students' ability to develop critical thinking, media discernment, and digital citizenship. When lecturers are unprepared to facilitate DML instruction and students lack the tools to participate, the promise of digital learning remains unfulfilled.

This analysis contributes to the current discourse by reframing the digital divide as an issue of educational equity and institutional accountability. The focus here is not only on access to devices or platforms but also on the depth and quality of digital engagement afforded to students. This is especially relevant in contexts where DML is positioned as a vehicle for developing higher-order thinking skills, civic awareness, and academic autonomy. Without addressing institutional barriers, DML risks becoming an elitist construct—available only to students who already have the means and background to succeed in digital environments.

The findings also point toward a broader systemic misalignment between institutional aspirations and pedagogical realities. While many universities have adopted digitalization as part of their strategic goals—especially accelerated by the COVID-19 pandemic—there is often a lag in developing coherent faculty development programs, inclusive technology policies, and curricular frameworks that support sustainable DML integration. Faculty members are often expected to innovate without being given the necessary time, training, or incentives to do so. Consequently, the responsibility for effective DML instruction falls unevenly on individual educators, rather than being embedded within institutional support structures.

In this study, the author's own experience as a university lecturer reinforces these structural observations. In her teaching context, digital and media literacy is often underdeveloped, particularly among first-year students who demonstrate difficulty distinguishing between credible and biased digital content, or reflecting critically on media narratives. While digital tools may be present, their use often remains at a functional level (e.g., typing, browsing, submitting assignments) without advancing toward reflective, analytical, or creative media engagement. This gap illustrates that having access to digital technology is not equivalent to achieving digital literacy, especially when critical thinking is the intended outcome.

The discussion here emphasizes that the integration of DML in higher education cannot be addressed through isolated interventions or short-term digital access projects. Instead, it requires a multi-level strategy that includes:

To ensure the effective and equitable integration of digital and media literacy in higher education, a multifaceted and strategic approach is required. First, policy reform must be undertaken at the institutional level to position critical digital education as a central academic competency, rather than as a peripheral or elective skill. This includes embedding DML objectives into university visions, curriculum standards, and accreditation frameworks. Second, substantial investment is needed in faculty training and mentoring programs to enhance both pedagogical and technological competencies. Lecturers must be equipped not only to use digital tools effectively but also to facilitate critical engagement, media analysis, and reflective learning. Third, universities must prioritize infrastructure development to address issues of digital inequity. This includes ensuring universal access to internet connectivity, digital devices, and user-friendly platforms, particularly for students from under-resourced backgrounds. Finally, curriculum redesign is essential. Rather than treating DML as a standalone topic, it should be integrated across disciplines and connected to authentic, critical assessment tasks that require students to analyze, create, and evaluate digital content in context. Collectively, these strategic measures will foster a more inclusive, reflective, and future-oriented model of higher education.

In sum, this study contributes to advancing the field by reconceptualizing DML access and integration as issues of pedagogical justice, not just technological provision. Aligning policy, infrastructure, and pedagogy is essential if higher education is to fulfill its role in developing not just digitally competent students, but critical, ethical, and engaged digital citizens.

CONCLUSION

This study explored how digital and media literacy (DML) can be effectively implemented in higher education to promote critical thinking and student engagement. The findings highlight that successful DML integration requires not only access to technology, but also intentional curriculum design, reflective pedagogy, and institutional support that addresses equity and educator readiness.

By shifting the focus from technical proficiency to cognitive and ethical engagement, this study reinforces the role of DML as a foundation for developing informed, critical, and responsible digital citizens. Frameworks such as TPACK, ADDIE, and the Vowel Approach offer practical pathways for embedding DML into diverse academic contexts.

Future research should assess the long-term impact of DML-based instruction on students' critical thinking and digital competencies. This paper contributes to advancing digital pedagogy by

positioning DML as a transformative educational strategy, central to preparing students for academic, civic, and professional success in the digital age.

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