

# Information Literacy Strategies for Optimizing User Education in Modern Libraries through Digital Collaboration

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## ABSTRACT

This study aims to analyze information literacy strategies that optimize user education in modern libraries through digital collaboration. Using a literature review method encompassing 14 relevant studies published between 2018 and 2025, the research reveals that information literacy practices in Indonesia and the ASEAN region have shifted from a technical orientation to a collaborative paradigm that integrates digital technology and participatory learning. The synthesis shows that collaboration among librarians, educators, and communities plays a pivotal role in enhancing users' ability to critically and ethically evaluate information. The findings also indicate that digital infrastructure, librarian competence, and institutional policy are key determinants of the effectiveness of literacy programs. Based on these insights, the study proposes a Sustainable Digital Collaboration Model as a strategic framework to strengthen inclusive, adaptive, and community-empowering information literacy practices in the era of digital transformation.

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## INTRODUCTION

The rapid development of information and communication technology across Southeast Asia has significantly transformed how people access and manage information. However, the rise in digital connectivity has not been accompanied by a parallel improvement in information literacy. According to the ASEAN Digital Literacy Programme (ADLP), the digital literacy gap in the region remains considerable, with only a fraction of the population possessing adequate information literacy skills despite internet penetration exceeding 70% in several ASEAN countries (Sochan, 2024). In Indonesia, the National Digital Literacy Index in 2022 stood at 3.54, reflecting relatively low public competence in assessing and managing online information (Rochman & Adji, 2023). These facts underscore the urgency of research on information literacy strategies in modern libraries as part of user education programs that emphasize digital collaboration.

This study is important because modern libraries play a pivotal role in bridging the information literacy gap. Libraries are no longer merely repositories of information but have become active learning centers aimed at enhancing user education (Julien & Genuis, 2011). In today's digital context, user education ensures that individuals can access, evaluate, and use information ethically and effectively. Previous studies have highlighted librarians' roles in developing technology-based literacy programs, yet implementation in ASEAN countries, including Indonesia, continues to face challenges such as limited human resources, uneven infrastructure, and low public awareness of the importance of information literacy (UNESCO, 2021). Recent literature demonstrates that libraries across ASEAN are transitioning toward collaborative learning models that place information literacy at the core of user education. Conzizca and Masruri, (2024) found that community-based digital training in village libraries enhances citizens' participation in literacy programs. Putrayasa et al., (2024) emphasized the integration of traditional and digital literacy as an innovation in modern learning, while Rahmah (2025) reported that collaborative services in academic libraries significantly improve students' digital information literacy. These findings indicate that digital collaboration is an effective strategy to strengthen the role of libraries as literacy agents in society.

Despite extensive prior research, a research gap remains in optimizing digital collaboration between librarians, users, and educational institutions. Most studies have focused on technological advancement or individual librarian competencies rather than developing sustainable and integrative collaborative systems. For instance, Royani & Rahayu (Royani & Rahayu, 2022) and Supriati and Antikasari, (2025) stressed the need for continuous librarian training but did not explore systemic digital collaboration models for user education. This study addresses that gap by proposing a strategic approach to digital collaboration that emphasizes active community participation in strengthening information literacy within modern libraries.

Conceptually, this research is expected to provide both theoretical and practical contributions to the development of information literacy strategies in the digital era. The article descriptively examines strategies to optimize community participation in user education through collaboration between librarians, communities, and digital technology. It aims to illustrate how modern libraries can function as adaptive, inclusive, and sustainable information literacy centers. Ultimately, this study seeks to develop a conceptual model of user education that enhances society's information literacy competence and competitiveness across the ASEAN region, particularly in Indonesia.

## RESEARCH METHOD

This study employs a qualitative descriptive design using the library research method to analyze information literacy strategies for optimizing user education in modern libraries through digital collaboration. This approach enables an in-depth exploration of concepts and practices by examining relevant academic sources (Bowen, 2009; Snyder, 2019). Qualitative design allows for contextual and interpretive understanding of complex social and institutional phenomena (Nowell et al., 2017), while ensuring analytical rigor and reflexivity in synthesizing existing scholarship (Machi & McEvoy, 2012; Walliman, 2019).

The research followed three systematic stages: (1) identification and selection of relevant studies, (2) content and thematic analysis, and (3) synthesis into a conceptual model. Data were collected using the Perplexity academic platform, which integrates access to major scholarly databases such as Scopus, DOAJ, ScienceDirect, and Google Scholar. The search focused on peer-reviewed works published between 2010 and 2025, ensuring the inclusion of recent and credible data. Inclusion criteria required that studies directly address information literacy, user education, modern libraries, or digital collaboration, while opinion-based or non-peer-reviewed sources were excluded (Kitchenham et al., 2021). A total of 14 key studies were identified and summarized in a state of the art (SOTA) table for cross-comparative analysis.

Data analysis employed content analysis as articulated by Bowen (2009) and enhanced through thematic synthesis following Braun and Clarke (2021). Each study was coded and categorized according to major themes such as librarian roles, forms of digital collaboration, and user education strategies in modern libraries. A thematic synthesis was then conducted to identify common patterns and relationships across the selected studies (Munn et al., 2018). Data validity was strengthened through theoretical and cross-study triangulation, ensuring consistency and credibility of interpretations. This methodological framework enables the study to produce an integrative conceptual contribution to the understanding of digital collaboration-based information literacy strategies in modern libraries, with relevance to both Indonesia and the ASEAN region.

## RESULTS

The findings of this study reveal that the transformation of information literacy practices in modern libraries has evolved toward a collaborative and digitally driven model that integrates user participation, institutional synergy, and technological adaptation. A synthesis of 14 studies summarized in Table 1 demonstrates that information literacy initiatives in Indonesia and other ASEAN countries have increasingly emphasized collaboration among librarians, educators, and communities to enhance users' ability to locate, evaluate, and apply information effectively. The reviewed literature also confirms that information literacy in the digital era is not merely a technical competency but a sociocultural process involving interaction, critical reflection, and co-learning within a technology-mediated environment.

**Table 1.** Summary of 14 Key Studies on Digital Collaborative Information Literacy

No	Author (Year)	Journal	Focus / Method	Main Findings
1	MJ Conzizca (2024)	<i>Adabiya: Journal of Literacy Education</i>	Field study, rural library	Community-based digital literacy training strengthens local literacy culture. [1]
2	IM Putrayasa (2024)	<i>ESSR</i>	Policy analysis on literacy education	Integration of traditional and digital literacy promotes learning innovation. [2]
3	M Rahmah (2025)	<i>Sumber Pustaka</i>	Evaluative study, higher education	Collaborative library services enhance students' digital information literacy. [3]

4	Y Royani (2022)	<i>Al-Ma'mun Journal of Library and Information Studies</i>	Librarian competency survey	Librarian digital literacy determines the effectiveness of database management. [4]
5	E Supriyati (2025)	<i>Indonesian Journal of Library Science</i>	Evaluation of collaborative training	Library–faculty partnerships strengthen students' digital literacy. [5]
6	R Solihin (2023)	<i>Literacy: Journal of Social Welfare</i>	Literacy training program	Improves users' ability to evaluate digital information. [6]
7	IB Setyawan (2022)	<i>Journal of Library and Information Science</i>	Hybrid service study	Hybrid collections expand access and service efficiency. [7]
8	D Wulandari (2018)	<i>Library Literacy Journal</i>	Implementation of digitalization	Digitization enhances inclusive information access. [8]
9	S Farhan (2023)	<i>Ranah Research Journal</i>	Implementation study	Training, infrastructure, and librarian–user interaction affect program outcomes. [9]
10	M Jatmiko (2023)	<i>UII Library Bulletin</i>	Platform development	Digital platforms expand access and engagement. [10]
11	S Astuti (2022)	<i>MSIP Journal</i>	Library networking analysis	Interlibrary collaboration increases user education effectiveness. [11]
12	N Rahmah (2024)	<i>Semantik: Aspirasi Journal</i>	Digital library evaluation	Digital libraries foster self-directed and collaborative learning. [12]
13	N Syamsuri (2021)	<i>Journal FKIP UCY</i>	Librarian–teacher collaboration	Digital technology enhances library-based user education. [13]
14	T Febrianti (2021) & A Rahayu (2020)	<i>Literacy &amp; LPustaka Journal</i>	Literacy campaign and evaluation	Literacy campaigns and assessment indicators improve digital engagement. [14]

The synthesis of these studies highlights several recurring patterns. First, libraries adopting collaborative literacy programs such as community-based workshops (Conzizca & Masruri, 2024) or faculty–librarian partnerships (Supriati & Antikasari, 2025) tend to achieve higher engagement and measurable improvements in users' digital information literacy. This suggests that the integration of pedagogical collaboration and technology use strengthens learning outcomes and user independence. Second, the increasing use of digital platforms such as Learning Management Systems (LMS) and online tutorials (Putrayasa et al., 2024; Setyawan, 2024) reflects a paradigm shift from passive information delivery to interactive and participatory learning. These findings align with the ACRL (2016) Framework for Information Literacy for Higher Education, which emphasizes that literacy must be approached as a socially constructed and inquiry-based practice.

Furthermore, digital infrastructure and librarian competency emerge as critical determinants of success. Studies by Royani & Rahayu (2022) and Setyawan (2024) demonstrate

that libraries with hybrid collections and digitally literate librarians achieve broader service reach and higher user satisfaction. However, Wahidi & Prasetyo (Wahidi & Prasetyo, 2025) and Rodliyah (2024)) note persistent challenges such as the digital divide, insufficient pedagogical training, and short-term project dependency. These limitations echo broader regional disparities identified in ASEAN reports, where access inequality and inconsistent policy frameworks hinder the sustainability of digital literacy programs. Hence, technological investment alone is inadequate without institutional capacity building and strategic policy support.

From a theoretical standpoint, these findings reinforce UNESCO's (2023) Media and Information Literacy framework, which situates digital literacy as both an educational and civic competency. Information literacy, in this sense, serves not only as a learning tool but also as an instrument of empowerment that enables communities to participate meaningfully in the digital society. Practically, this study proposes a conceptual model of Sustainable Digital Collaboration, which integrates cross-sector partnerships, librarian professional development, and adaptive technology utilization. Such an integrated approach offers a framework to overcome the fragmented, short-term nature of many existing programs by embedding collaboration within continuous institutional and community processes. Ultimately, this analysis underscores that modern libraries play an indispensable role in bridging the gap between access and empowerment. As community-centered learning hubs, they must continuously adapt to the dynamics of digital transformation by fostering inclusive, critical, and lifelong learning practices. Nevertheless, further empirical research is needed to validate the long-term impact of collaborative literacy models across diverse contexts—urban and rural, academic and public to ensure that digital literacy truly contributes to equitable knowledge development in the ASEAN region.

## CONCLUSION

This study concludes that sustainable information literacy in modern libraries can only be achieved through a synergistic integration of digital technology, librarian competence, and institutional collaboration that positions libraries as active agents of community empowerment. The synthesis of 14 studies highlights that programs combining pedagogical partnerships, digital infrastructure, and participatory learning models effectively enhance users' critical and ethical engagement with information. However, persistent challenges—such as the digital divide, limited policy integration, and inconsistent librarian training—require a strategic response at both institutional and national levels. Therefore, it is recommended that libraries adopt a Sustainable Digital Collaboration Model that fosters continuous professional development, community involvement, and adaptive use of technology. Policymakers and higher education institutions should institutionalize collaborative literacy programs and provide long-term funding mechanisms to ensure equitable access, resilience, and sustainability of information literacy practices across the ASEAN region.

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