Journal of Library and Information Science
https://doi.org/10.17509/edulib.v16i1.93330

EDULIB

The Role of Digital Libraries in Enhancing Students' Digital Literacy: A Systematic Literature Review

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Abstract

This study aims to examine the role of digital libraries in enhancing digital literacy skills among students, in response to the paradox between high internet access and persistently low digital literacy among the younger generation. A systematic literature review method was employed. Articles were retrieved from Google Scholar using the keywords "peran perpustakaan digital" AND "literasi digital" AND "siswa" in Indonesian, covering publications from 2015 to 2025. From 66 articles identified, 10 were selected based on their relevance through a three-stage process of collection, evaluation, and synthesis. The findings reveal that digital libraries contribute to improving student digital literacy through three primary mechanisms: (1) the availability of diverse digital resources such as e-books, e-journals, and interactive platforms; (2) the provision of flexible media access that supports both in-class and distance learning activities; and (3) the active involvement of competent librarians who serve as instructional partners and digital ethics mentors. Digital libraries have evolved beyond mere electronic repositories and now function as comprehensive literacy ecosystems. Their effectiveness depends on infrastructure readiness, adaptation to the visual and mobile preferences of digital native students, and sustained collaboration among librarians, teachers, and parents to transform students into critical, productive, and responsible digital users.

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Article History:
Submitted/Received 07 Dec 2025
First Revised 12 Feb 2026
Accepted 17 Apr 2026
First Available Online 28 Apr 2026
Publication Date 1 May 2026

Keywords:
Digital library, digital literacy, information access, student literacy

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INTRODUCTION

The rapid expansion of internet access in Indonesia has not been matched by a corresponding improvement in digital literacy skills, particularly among students. According to the latest APJII survey, internet penetration in Indonesia reached 80.66% in 2025, equivalent to approximately 229 million users (APJII, 2025). Generation Z, who dominate internet usage, spend an average of 4-6 hours online daily, with a significant portion dedicated to social media and entertainment rather than educational or productive activities (APJII, 2025; Kemp, 2025). Despite this high connectivity, various studies consistently indicate that students' digital literacy, encompassing the ability to find, evaluate, use, create, and share information critically and ethically, remains alarmingly low (Ananda et al., 2023; Baterna et al., 2020; Mangarin & Climaco, 2024; Silvhiany et

al., 2021).

This paradox is further evidenced by the Indonesia Digital Society Index (IMDI) 2025, which shows that while the infrastructure pillar scores relatively high, the digital literacy and empowerment pillars remain among the weakest components, with overall national scores still far from satisfactory levels (Komdigi, 2025). UNICEF's baseline study on children's online knowledge and practices in Indonesia (2023) reveals that most children use the internet primarily for chatting, socializing with friends, and consuming entertainment content such as movies or videos. Only a small proportion engage in purposeful information-seeking or critical evaluation of online sources. Furthermore, many children report experiencing uncomfortable or frightening online encounters, with limited guidance on digital safety and ethics from adults (UNICEF Indonesia, 2025). These patterns leave students highly vulnerable to misinformation, cyber threats, data privacy violations, and inefficient use of digital resources for academic purposes (Juditha, 2018; Leba et al., 2024; Massie & Nababan, 2021).

The consequences of low digital literacy are particularly concerning in the educational context. Students who frequently use gadgets for entertainment often fail to develop the higher-order skills needed to manage information overload in the digital age. Research indicates that many students treat the internet as a quick-answer tool rather than a platform for deep learning, critical analysis, or knowledge construction (Praseptiawan et al., 2019; Rais et al., 2024). This situation is exacerbated by the preference of digital-native students for fast, visual, and mobile-friendly content, which makes traditional static learning resources less appealing (Ridlwan et al., 2025; Wahidi & Prasetio, 2025).

Previous research has increasingly explored the potential of digital technologies to support education. Several studies have documented the shift from conventional libraries to digital formats as a response to the demands of distance learning and independent study, especially during and after the COVID-19 pandemic (Lubis & Marlini, 2021; Mubarok, 2021). Others have examined specific interventions, such as the integration of digital library applications in schools, gamification strategies, and librarian-led mentoring programs to boost student motivation and information-seeking behavior (Anshor et al., 2025; Rahmi et al., 2025; Wasilah et al., 2025). Positive outcomes reported in these studies include improved access to learning materials, greater learning independence, and better ability to filter credible information amid the flood of online content (Lestari, 2024; Nabila et al., 2025; Oktarina et al., 2025).

State-of-the-art literature further demonstrates that well-designed digital libraries can function as dynamic platforms for literacy development rather than mere repositories of electronic books. Evidence suggests strong correlations between the availability of diverse digital resources (e-books, e-journals, interactive multimedia, and virtual collections) and enhancements in students' information literacy, critical thinking, and ethical digital behavior (Anggara & Khoeron, 2023; Judijanto & Suroso, 2025; Radhiyah, 2025; Syukri & Wahyuni, 2024). Moreover, the active role of librarians as facilitators, mentors, and collaborators with teachers has been identified as a crucial success factor in transforming passive users into active, responsible digital learners (Husnawati et al., 2022; Ridlwan et al., 2025).

Despite these promising findings from individual case studies and small-scale implementations, a significant research gap remains. Most existing studies are context-specific, focusing on single schools or particular educational levels (elementary,

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vocational, or high school), with limited attempts to synthesize findings across broader Indonesian educational settings. There is also a scarcity of systematic literature reviews that comprehensively map the mechanisms through which digital libraries contribute to digital literacy while addressing persistent challenges such as infrastructure inequality, teacher and librarian readiness, adaptation to Generation Z's learning preferences, and the integration of digital ethics education (Anshor et al., 2025; Nabila et al., 2025; Oktarina et al., 2025). Consequently, policymakers and school administrators still lack a holistic evidence-based framework for optimizing digital libraries as core components of national digital literacy initiatives.

This study addresses the identified gap by conducting a systematic literature review that synthesizes recent empirical evidence on the role of digital libraries in enhancing students' digital literacy in Indonesia. The novelty of this review lies in its holistic perspective: it not only documents the provision of resources and flexible access but also emphasizes the transformation of digital libraries into comprehensive literacy ecosystems. These ecosystems integrate technological infrastructure, human facilitation by competent librarians, and collaborative efforts involving teachers and parents. By focusing exclusively on studies published between 2015 and 2025 and employing a rigorous three-stage selection process, this review offers timely, contextually relevant insights aligned with Indonesia's current priorities in digital society development.

The purpose of this article is to examine the role of digital libraries in enhancing digital literacy skills among students through a systematic synthesis of recent literature, to identify the primary mechanisms of their contribution, and to propose strategic recommendations for educational stakeholders aimed at effectively bridging the persistent digital literacy gap in Indonesia.

METHODS

Research Design

This study employed a systematic literature review (SLR) approach to examine the role of digital libraries in supporting digital literacy among school students. The review was designed to identify, evaluate, and synthesize existing research concerning the contributions of digital library services to students' access to information, engagement with digital resources, and development of digital literacy skills. The SLR approach was selected to provide a structured synthesis of available evidence and identify recurring findings across relevant studies (Snyder, 2019).

Information Sources and Search Strategy

The literature search was conducted using Google Scholar as the primary source for identifying relevant scholarly publications. The search employed the Indonesian keywords "peran perpustakaan digital," "literasi digital," and "siswa," combined using the search expression "peran perpustakaan digital" AND "literasi digital" AND "siswa." The publication period was restricted to 2015–2025 to capture research published within the specified timeframe. The review focused on studies examining the role or contribution of digital libraries to digital literacy or related information-literacy practices among students at the elementary, junior high, senior high, and vocational school levels. The use of Indonesian-language search terms reflected the review's emphasis on literature relevant to school-level digital library practices within the Indonesian educational context.

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Eligibility Criteria and Study Selection

Studies were selected according to predefined inclusion and exclusion criteria. Articles were eligible for inclusion if they (1) explicitly examined the role or contribution of digital libraries to students' digital literacy, (2) addressed school-level educational settings or student populations, and (3) were published between 2015 and 2025.

Articles were excluded if they (1) mentioned digital libraries without substantive examination of their educational roles, (2) discussed digital literacy without establishing a connection to digital library resources or services, or (3) represented duplicate records or non-academic publications.

The initial search identified 66 records. These records were assessed against the eligibility criteria to determine their relevance to the review objectives. Following the screening and eligibility assessment, 10 articles met the inclusion criteria and were retained for the final synthesis. The selected articles formed the evidence base for examining the contributions of digital libraries to students' digital literacy.

Data Extraction and Thematic Synthesis

The 10 included articles were examined in full to identify findings relevant to the review objectives. Information concerning the roles, benefits, implementation challenges, and educational contributions of digital libraries was extracted from each study. Particular attention was given to findings describing students' access to digital information resources, opportunities for learning support, and the involvement of librarians in facilitating effective resource utilization.

The extracted findings were analyzed through thematic synthesis, which enables the organization and interpretation of recurring concepts across multiple studies (Thomas & Harden, 2008). Relevant findings were coded and grouped according to similarities in their reported contributions to digital literacy development. The analysis identified three principal themes: the availability of diverse digital information resources, flexible access to digital library services supporting learning activities, and the facilitative role of librarians in developing students' digital literacy.

Findings across the included studies were compared to identify recurring patterns, differences in reported experiences, and contextual factors influencing digital library utilization. The resulting synthesis was used to develop an integrated understanding of how digital libraries may support students' digital literacy and to identify considerations for their implementation in school-level educational settings.

RESULTS AND DISCUSSION

Result

Characteristics of the Included Studies

The review included 10 articles selected from 66 records identified through Google Scholar. As summarized in Table 1, the selected publications were published between 2021 and 2025, with six articles published in 2025, two in 2024, one in 2022, and one in 2021. Although the search covered publications from 2015 to 2025, no studies published before 2021 were included in the final synthesis.

The reviewed articles addressed digital library services and literacy-related practices across different educational contexts, including elementary, secondary, vocational, and early childhood education. Their focus varied from access to digital collections and

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technology-supported learning to library management, information literacy, and educational assistance. Thematic synthesis identified three recurring themes: (1) the availability and diversity of digital information resources, (2) flexible access to resources supporting learning activities, and (3) the facilitative role of librarians and educators in developing students' literacy-related skills.

Table 1

Summary of the 10 Studies Included in the Review

No	Title	Author	Role of Digital Libraries in Enhancing Digital Literacy Among Students
1	Perpustakaan Digital Sebagai Penunjang Pembelajaran Jarak Jauh	(Mubarok, 2021)	In the context of distance learning, digital libraries have a role to be a primary learning resource that is available without space and time limitations, therefore supporting the shift in the role of students from passive receivers to active learners who are expected to be more independent in searching, selecting, and developing learning materials on their own.
2	Manajemen Digital Perpustakaan Sekolah untuk Mendorong Literasi Siswa	(Wasilah et al., 2025)	Digital library management recommended a comprehensive approach that not only boosted student motivation through the implementation of gamification strategies and AI-based recommendations, but also played an impactful role in supporting project-based learning, which students were required to independently search for and process digital information to solve real-life cases that directly enhanced critical thinking skills.
3	Adaptive Information Service Development Strategy to Improve Information Literacy and Student Learning Independence	(Rahmi et al., 2025)	The key to success of school libraries in the digital age is not only the availability of computers, but also the adaptability of services, which is the librarian's ability to "repackage" information and provide individual mentoring to follow the learning styles of the modern student.
4	Peran Perpustakaan Digital dalam Kebutuhan Literasi Informasi di Sekolah	(Lestari, 2024)	A great digital library is a library that can change students' behavior from being just "fast information seekers" to students who have a long-term digital literacy skill (knowing how to search for, evaluate, and use information with ethics).
5	Implementasi Manajemen dan Digitalisasi Perpustakaan di	(Oktarina et al., 2025)	The digitization of libraries schools has been proven to bring the concept of digital literacy through the "Pojok Baca" program, which is distributed in school gazebos, where students

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No	Title	Author	Role of Digital Libraries in Enhancing Digital Literacy Among Students
	SMA Negeri 13 Surabaya		can open e-book instantly using the barcode scanning feature on their gadgets. This is supported by the implementation of an automation system based on OPAC and SLiMS, which successfully pushes students to search the catalog independently, so they can learn to find and use learning resources from many digital media more effectively. The integration of digital systems and physical accessibility has fully impacted students' learning independence and strengthened their digital literacy skills.
6	Upaya Mengembangkan Literasi Anak Usia Dini dengan Perpustakaan Digital	(Husnawati et al., 2022)	Digital libraries as facilities that can improve literacy through regular additions to their collections, instilling awareness of the existence of libraries as sources of information from an early age, providing selected educational stories with attractive illustrations, and utilising children's interest in using gadgets, and certainly by adult supervision.
7	Perpustakaan Sebagai Jantung Pendidikan	(Syukri & Wahyuni, 2024)	Libraries, as the heart of education, clarify the strategic aspects of their implementation in supporting teaching and learning activities by paying attentions to the completeness of library collections, both print and digital, such as e-journals, proceedings, e-books, magazines, and links that can connect to the other libraries, as well as the provision of educational facilities and resources. The presence of library managers whose skills are continuously enhanced through workshops and various other activities teaches students how to search for information, evaluate its credibility, and use it ethically.
8	Pendampingan Literasi Digital Berkelanjutan untuk Guru dan Siswa melalui Perpustakaan Digital di SDIT ANNIDA	(Anshor et al., 2025)	The use of digital libraries is provided through integrated guidance and socialisation to ensure that students are able to effectively access and manage digital resources, thereby creating a habit of learning and improving their understanding of the use of information technology to independently search for and read learning materials. Digital libraries with a flexible and open learning ecosystem can increase awareness of the importance of digital transformation in elementary school.
9	Aksesibilitas dan Efisiensi Melalui Implementasi	(Nabila et al., 2025)	The practical use of the application-based digital library concept introduced through socialization activities was successful in

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No	Title	Author	Role of Digital Libraries in Enhancing Digital Literacy Among Students
	Perpustakaan Digital di SMK Negeri 2 Padang Panjang, Sumatera Barat		improving understanding and finding more inclusive and responsive learning strategies by increasing the visibility of library collections. Open access to digital resources encouraged higher reading interest and digital literacy among students.
10	Peran Perpustakaan Digital dalam Pembelajaran Literasi Digital Siswa Sekolah Dasar	(Ridlwan et al., 2025)	The integration of digital libraries in the elementary school environment offers significant potential and plays a crucial role in students' learning and digital literacy skills. The presence of a digital library provides easy and fast access to various types of information sources, helps develop critical and evaluative thinking abilities, and serves as collaborative space that influences the interactive learning process.

Availability and Diversity of Digital Resources

The first theme concerned the availability of digital information resources that students could access for learning. Several studies described digital libraries as platforms providing electronic books, journals, multimedia materials, and other learning resources. These collections offered alternatives to conventional printed materials and expanded the range of information sources available to students (Mubarok, 2021; Ridlwan et al., 2025; Syukri & Wahyuni, 2024).

The reviewed studies also emphasized the importance of organizing and presenting digital collections in ways that support information discovery. Digital library platforms were described as facilitating access to learning materials through searchable collections and technology-supported information services (Nabila et al., 2025; Oktarina et al., 2025). These findings indicate that resource availability and discoverability were recurring considerations in the educational use of digital libraries.

Flexible Access and Technology-Supported Learning

The second theme involved flexible access to digital resources and their integration into learning activities. Digital libraries were described as providing opportunities to access educational materials beyond the physical library and conventional school hours. Such flexibility was particularly relevant to distance learning and independent information seeking (Mubarok, 2021).

Several studies described specific technological approaches supporting digital library use. These included mobile-accessible collections, barcode-based access, online public access catalogues, and digital library management systems. The implementation of such tools was associated with more convenient information retrieval and greater opportunities for students to access learning resources independently (Nabila et al., 2025; Oktarina et al., 2025).

Other studies discussed gamification, AI-supported recommendations, and adaptive information services as approaches to making digital learning environments more

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responsive to students' needs (Rahmi et al., 2025; Wasilah et al., 2025). Collectively, these studies presented digital libraries as environments capable of supporting flexible learning and information access through different technological arrangements.

Facilitative Roles of Librarians and Educators

The third theme concerned the role of librarians and educators in helping students locate, evaluate, and use digital information. The reviewed literature emphasized that access to digital resources should be accompanied by guidance in information retrieval and the assessment of information credibility (Lestari, 2024; Rahmi et al., 2025). Educational assistance and literacy-related activities were identified as approaches to familiarizing students with digital library services. One study described sustained digital literacy assistance involving teachers and students, including guidance in accessing and managing digital information resources (Anshor et al., 2025).

Other studies highlighted the importance of library personnel and educational institutions in supporting learning activities through appropriate collections, guidance, and information services (Syukri & Wahyuni, 2024). These findings indicate that human support was a recurring component of digital library implementation. The reviewed studies associated librarians' and educators' involvement with opportunities for developing information-searching practices, evaluating digital resources, and encouraging more independent learning.

Challenges in Digital Library Implementation

The reviewed studies also identified challenges associated with implementing digital library services in educational settings. These included differences in technological infrastructure, students' familiarity with digital platforms, and the availability of appropriate assistance and training (Anshor et al., 2025; Oktarina et al., 2025; Ridlwan et al., 2025). Some studies emphasized the need to improve students' understanding of digital information services, while others highlighted technological and organizational considerations related to providing accessible collections. These findings indicate that the availability of digital library platforms does not necessarily ensure their effective educational utilization. Institutional resources, accessibility, and user support emerged as relevant implementation considerations across the reviewed literature.

Discussion

Digital Resource Availability and Students' Literacy Development

The findings identify the availability and diversity of digital information resources as important conditions for supporting students' literacy-related learning activities. The reviewed studies describe digital libraries as providing access to electronic books, journals, multimedia materials, and other educational resources that extend learning opportunities beyond conventional library collections (Mubarok, 2021; Ridlwan et al., 2025; Syukri & Wahyuni, 2024). These findings are consistent with previous research indicating that digital library development can improve the accessibility of educational materials and expand opportunities for technology-supported learning (Devi et al., 2024; Sari et al., 2025).

However, the availability of digital resources should not be equated with the acquisition of digital literacy competencies. Digital literacy involves more than accessing

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information or operating technological devices; it also encompasses the ability to evaluate information, communicate appropriately, and participate critically in digital environments (Ilomäki et al., 2023; van Laar et al., 2017). Therefore, the educational contribution of digital libraries depends partly on whether students develop the competencies required to interpret, evaluate, and apply the information they retrieve.

This distinction is particularly relevant to the relationship between digital literacy and information literacy. Although the two concepts share competencies related to information discovery, evaluation, and responsible use, digital literacy encompasses additional technological, communicative, and contextual dimensions. Consequently, digital libraries should be understood as enabling environments for literacy development rather than independent mechanisms that automatically improve students' digital competence.

Flexible Access and the Integration of Digital Technologies

Flexible access emerged as another recurring contribution of digital libraries. The reviewed studies indicate that digital platforms can reduce constraints associated with physical library locations and conventional operating hours, creating opportunities for independent and distance learning (Mubarok, 2021; Nabila et al., 2025). Similar findings have been reported in research on digital libraries in Indonesian primary schools, where accessible collections and technology-supported services were associated with expanded learning opportunities (Sari et al., 2025).

The implementation of digital library management systems and emerging technologies further illustrates how access can be organized to support students' information-seeking activities. Online catalogues, barcode-based access, mobile applications, and adaptive information services have been discussed as approaches to improving resource accessibility and supporting independent learning (Oktarina et al., 2025; Rahmi et al., 2025; Wasilah et al., 2025). Nevertheless, the educational value of these technologies depends on their usability, relevance to students' information needs, and integration into meaningful learning activities.

Evidence concerning the development of child-friendly online public access catalogues also highlights the importance of designing digital information services according to users' abilities and developmental needs. Nadila and Rullyana (2021) identified gaps between the anticipated value of child-oriented digital services and institutional readiness to provide appropriate systems, collections, and user education. Their findings reinforce the importance of user-centered design when developing library technologies for school-age learners.

Accordingly, technological innovation should be accompanied by considerations of accessibility, age appropriateness, and instructional relevance. Digital services that simplify information retrieval may improve convenience, but their contribution to digital literacy requires evaluation beyond access frequency or system availability.

Librarians and Educators as Facilitators of Digital Literacy

The reviewed literature emphasizes the role of librarians and educators in supporting students' engagement with digital information. Guidance in searching, selecting, evaluating, and using information emerged as a recurring component of digital library implementation (Anshor et al., 2025; Lestari, 2024; Rahmi et al., 2025). These findings

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are consistent with research on school libraries indicating that information literacy development requires organized educational activities and support from the broader learning environment (Firmansyah & Alaauddin, 2024).

The importance of instructional guidance is further supported by research questioning the assumption that familiarity with digital technologies necessarily indicates digital literacy. The relevance of educational opportunities for developing digital literacy suggests that technology use should be accompanied by purposeful learning experiences (Ng, 2012). Although that study involved university students, its conceptual implications are relevant to distinguishing technological familiarity from literacy competence.

Within school environments, librarians and teachers can contribute complementary expertise. Librarians can support information discovery, source evaluation, and responsible information use, while teachers can connect these practices with curriculum-based learning activities. The IFLA school library guidelines similarly emphasize the educational responsibilities of school library personnel and the importance of collaboration within the school community (International Federation of Library Associations and Institutions (IFLA, 2015).

A broader pedagogical perspective also suggests that digital literacy development involves interactions among technological skills, ethical awareness, digital safety, and educational practices. Digital literacy is conceptualized as an interconnected pedagogical ecosystem in secondary education (Ismail et al., 2026). This perspective reinforces the need to integrate digital library activities with learning experiences that develop critical judgment and responsible digital participation, rather than focusing exclusively on technological access.

Institutional Readiness and Implementation Challenges

Despite their potential educational contributions, digital libraries face implementation challenges associated with infrastructure, financial resources, personnel competencies, and institutional support. Such challenges were reflected in the reviewed studies, particularly those examining digital library management and educational assistance (Anshor et al., 2025; Oktarina et al., 2025; Wasilah et al., 2025). A systematic review of school digital library implementation in Indonesia similarly identified limitations involving budgets, technological infrastructure, human resources, and institutional networks (Devi et al., 2024).

These findings suggest that digital library implementation should be examined as an institutional and educational process rather than solely as the installation of digital systems. Sustainable services require appropriate collections, functional technologies, trained personnel, and clear arrangements for management and educational support. The experience of developing child-oriented digital information services also demonstrates that institutional priorities and available resources can influence whether identified user needs are translated into operational services (Nadila & Rullyana, 2021).

International school library guidance further emphasizes that effective services depend on qualified personnel, educational planning, and cooperation among school stakeholders (IFLA, 2015). Therefore, schools seeking to expand digital library provision should consider technological readiness alongside the professional capacity of librarians and teachers. The reviewed evidence supports a coordinated implementation approach in which access, instructional support, and institutional management are addressed together.

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Implications for Digital Literacy Development and Future Research

Taken together, the findings suggest that digital libraries may support students' digital literacy through three interconnected elements: access to diverse information resources, flexible technology-supported learning opportunities, and guidance from librarians and educators. This interpretation is consistent with broader literature emphasizing the relationship between digital competencies, critical information practices, and educational environments (Ilomäki et al., 2023; van Laar et al., 2017).

The findings also indicate the importance of distinguishing between access-related outcomes and measurable literacy development. Increased availability of digital collections or greater convenience in retrieving information does not necessarily demonstrate improvements in critical evaluation, ethical information use, or other digital literacy competencies. Future evaluations should therefore examine both patterns of digital library utilization and students' demonstrated ability to locate, evaluate, create, and use digital information.

The interpretation of these findings is constrained by several methodological limitations. The literature search relied on Google Scholar and Indonesian-language keywords, potentially excluding relevant research available through other databases or terminology. The final synthesis also included only 10 articles covering different educational settings and methodological approaches. The included studies were not reported as having undergone a structured methodological quality appraisal, limiting conclusions about the strength and consistency of the available evidence.

Furthermore, contextual differences among the included studies require attention when interpreting their collective findings. Research involving early childhood education, elementary schools, and secondary or vocational education may address substantially different learning needs and developmental conditions. Therefore, the applicability of findings across educational levels should not be assumed without further examination.

Future research should investigate the relationship between digital library use and measurable digital literacy outcomes through comparative, longitudinal, or intervention-based designs. Such studies could assess the effects of structured information literacy instruction, librarian–teacher collaboration, user-centered digital library design, and institutional support on students' information practices. More comprehensive reviews should also employ broader search strategies, explicit eligibility documentation, and methodological quality appraisal to strengthen the reliability and generalizability of their conclusions.

CONCLUSION

This systematic literature review synthesized findings from ten selected studies to examine the role of digital libraries in supporting students' digital literacy in Indonesian educational settings. The findings identified three interconnected contributions: the provision of diverse digital information resources, flexible access to learning materials, and the facilitative roles of librarians and educators in supporting information-seeking and evaluation practices. These findings suggest that digital libraries can provide opportunities for independent learning and engagement with digital information when appropriate technological and instructional support is available. However, their educational contributions depend on institutional readiness, accessible digital collections, adequate infrastructure, and sustained collaboration between librarians and teachers. The synthesis

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further indicates that access to digital resources alone does not necessarily translate into improved digital literacy competencies, emphasizing the importance of integrating digital library services with structured literacy instruction and meaningful learning activities.

The findings have practical implications for educational institutions and policymakers seeking to strengthen digital literacy through school library services. Priorities should include improving digital infrastructure, developing accessible and relevant collections, enhancing librarians' professional competencies, and integrating information literacy activities into teaching and learning. Nevertheless, the conclusions should be interpreted cautiously because the review was limited to ten studies identified through Google Scholar using Indonesian-language search terms, with variations in educational contexts and research approaches. The available evidence primarily describes potential contributions and implementation experiences rather than establishing causal relationships or measurable improvements in digital literacy. Future research should employ broader literature searches, systematic quality appraisal, and comparative or intervention-based designs to evaluate how digital library utilization influences students' information evaluation skills, independent learning, and responsible digital participation across different educational levels.

Acknowledgment

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Declaration of AI

During the preparation of this manuscript, the authors used Grammarly for language editing and proofreading. The authors reviewed and verified the manuscript's content and take full responsibility for its accuracy, integrity, and final version.

Funding

This research received no external funding.

Author contributions statement

DRK: Conceptualization, methodology, investigation, formal analysis, writing – original draft, writing – review & editing. FIA: Methodology, investigation, data curation, formal analysis, writing – original draft, writing – review & editing. ZS: Investigation, data curation, validation, writing – original draft, writing – review & editing.

Conflict of interest statement

Authors state no conflict of interest.

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