



The role of the library in supporting ICT learning in primary school

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ABSTRACT

In the context of primary education, libraries have great potential as learning resource centers that can support the integration of technology into the learning process. This study examines the role of libraries in supporting Information and Communication Technology (ICT) learning at the Ibnu Sina Integrated Islamic Elementary School (SDIT). The purpose of this study was to examine the extent to which libraries contribute to ICT learning and to identify challenges associated with the use of digital technology in the school environment. The method was qualitative, with data collected through interviews with school officials, including the vice principal for curriculum, as well as observations and document analysis. The results showed that, despite the availability of a Learning Management System (LMS) and an e-book collection, the library's function remains limited to providing materials. Limited digital skills and infrastructure are the main obstacles. The implemented Kurikulum Merdeka provides flexibility in ICT learning, but still requires adaptation of technology-based content. Therefore, it is recommended that digital training be expanded, digital collections enriched, and infrastructure strengthened to enable libraries to play a more effective role.

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ABSTRAK

Pada konteks pendidikan dasar, perpustakaan memiliki potensi besar sebagai pusat sumber belajar yang dapat mendukung integrasi teknologi dalam proses pembelajaran. Penelitian ini mengkaji peran perpustakaan dalam mendukung pembelajaran Teknologi Informasi dan Komunikasi (TIK) di Sekolah Dasar Islam Terpadu (SDIT) Ibnu Sina. Tujuan dari penelitian ini adalah untuk mengeksplorasi sejauh mana perpustakaan berkontribusi dalam pembelajaran TIK, serta mengidentifikasi tantangan yang muncul dalam pemanfaatan teknologi digital di lingkungan sekolah. Metode yang digunakan yaitu kualitatif dengan pengumpulan data melalui wawancara dengan pihak sekolah, termasuk wakil kepala sekolah bidang kurikulum, observasi dan analisis dokumen. Hasil penelitian menunjukkan bahwa meskipun telah tersedia Learning Management System (LMS) dan koleksi e-book, fungsi perpustakaan masih terbatas pada penyediaan materi. Keterbatasan keterampilan digital dan infrastruktur menjadi hambatan utama. Kurikulum Merdeka yang diterapkan memberikan fleksibilitas pembelajaran TIK, namun masih memerlukan penyesuaian konten berbasis teknologi. Oleh karena itu, disarankan adanya peningkatan pelatihan digital, pengayaan koleksi digital, dan penguatan infrastruktur agar perpustakaan dapat berperan lebih optimal.

Kata Kunci: Kurikulum Merdeka; literasi digital; pembelajaran TIK; perpustakaan sekolah

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INTRODUCTION

Information and Communication Technology (ICT) has become an integral part of modern education. In the context of Indonesian education, mastery of ICT is no longer merely an additional skill, but has become a requirement to face the challenges of the 21st century (Ilhami *et al.*, 2024). At the elementary school level, ICT education begins with learning basic software such as Microsoft Word, PowerPoint, and Excel. This learning is a crucial first step in developing students' digital literacy, which can equip them for various future challenges, both in further education and in the workplace. Therefore, integrating ICT into the elementary education curriculum is crucial for preparing students for an increasingly connected and technology-driven world (Addin *et al.*, 2024).

However, students' mastery of technology is not limited to just teaching hardware and software. Digital literacy also encompasses the ability to access, evaluate, and utilize information critically, ethically, and responsibly through digital media. This requires adequate support from facilities and infrastructure, such as libraries and reading centers, to assist students in developing their digital literacy skills. School libraries play a crucial role in this regard, as they serve not only as physical book repositories but also as learning resource centers that provide a variety of digital information for students and teachers to use in ICT learning (Hadi *et al.*, 2025). With a library that supports digital literacy, students will have easier access to digital learning resources, such as e-books, journal articles, video tutorials, and relevant online learning platforms, aligned with the ICT learning materials taught in class.

Several previous studies have shown that school libraries play a crucial role in supporting ICT learning. Literacy facilities that support ICT learning can increase students' interest in learning and their digital skills (Sinulingga & Nasution, 2024). This facility includes a collection of books, articles, e-books, and other digital learning materials relevant to ICT-based learning. Furthermore, a library equipped with a collection of technology-related books and digital media can strengthen the technology-based learning process (Indah *et al.*, 2025). However, although many schools have provided libraries with various digital collections, research on the role of reading gardens as a form of informal literacy in supporting ICT learning in Islamic elementary schools remains limited (Ridlwani *et al.*, 2025). This opens up opportunities for further research to delve deeper into the contribution of reading parks that lack formal facilities, such as multimedia rooms or digital libraries, yet can still support the development of students' digital literacy, especially in elementary schools with limited formal facilities.

The main problem identified in the literature review was the limited availability of digital learning resources accessible to students, such as e-books, video tutorials, and online learning platforms relevant to ICT learning materials. This limitation often makes it difficult for students to find references relevant to the material being studied in class (Tini *et al.*, 2024). Furthermore, although many school libraries have implemented Learning Management Systems (LMS), their use in elementary schools remains suboptimal. While many students have access to LMSs, not all can use them to their full potential due to limited digital skills and limited school facilities (Sugiarto & Musyafa, 2024). In fact, in some schools, the LMS is used only to a limited extent and has not been fully integrated into the classroom ICT learning process.

In addition to the issues mentioned above, there are challenges regarding libraries' active involvement in supporting ICT learning. Despite the implementation of various digital literacy programs, libraries often serve only as reference providers rather than directly engage in classroom learning activities (Inayah *et al.*, 2024). This poses a significant challenge for school libraries, as they seek to transform into more active supporters of ICT learning. Therefore, it is crucial to identify ways in which libraries can be more integrated into ICT learning and make a more significant contribution to digital learning in elementary schools.

Based on the identified problems, school libraries have great potential to support ICT learning through the provision of relevant digital learning resources and the use of LMS; however, limited facilities, training, and integration with ICT learning in the classroom are the main challenges that must be overcome to optimize their role in supporting ICT learning (Hidayah *et al.*, 2024). The primary objective of this article is to explore the role of school libraries in supporting ICT learning and identify the challenges faced in managing and providing relevant digital learning resources. It also aims to discuss how libraries can collaborate with teachers in integrating digital literacy into ICT learning and how digital literacy programs can improve elementary school students' information technology skills.

LITERATURE REVIEW

The Role of Libraries in ICT Learning

School libraries play a crucial role in supporting the learning process, including ICT learning. Libraries serve not only as places to store physical books but also as learning resource centers that support the integration of technology into learning (Darmawan *et al.*, 2025). A study found that integrating elementary school libraries into the curriculum is crucial to supporting learning aligned with the National Library Standards. The role of libraries extends beyond providing collections and actively engaging in literacy activities, reference services, and technology-based learning support. However, implementing these standards still faces challenges related to service quality and infrastructure in many elementary schools (Damayanti & Suharso, 2022). In this regard, modern libraries provide access to a variety of digital collections and interactive learning media that support students' development of digital literacy. ICT will make learning more accessible and flexible and can positively support students' character development (Fauzi & Arifin, 2023). The library, in this case, serves as an information center, providing students with access to digital learning resources relevant to ICT learning, including e-books, video tutorials, articles, and online learning platforms. By utilizing a comprehensive digital library, students can improve their digital literacy, a crucial skill in supporting independent and effective ICT learning, while also helping students understand basic ICT concepts and preparing them to face the challenges of an increasingly technology-based world (Muryat & Sulistyawan, 2021).

Library Transformation in Supporting ICT Learning

One of the significant transformations of the current century is the adoption of LMS, which allows libraries to provide students with greater access to online learning materials anytime, anywhere. LMSs provide students with easy access to learning materials that support more flexible and independent ICT learning, especially for students who need additional resources to understand concepts taught in class (Mardianto & Hasanah, 2024; Mayasari *et al.*, 2023). This transformation aligns with the Independent Curriculum's direction, which demands innovation in the learning process and is designed to be relevant to the needs of 21st-century learning and the development of Society 5.0. This curriculum requires students to possess critical thinking, communication, collaboration, and creativity (the 4Cs) skills to face global challenges. Thus, learning becomes more innovative, adaptive, and centered on the needs of today's students (Indarta *et al.*, 2022).

The role of libraries in the context of ICT learning is not limited to providing learning materials but also to facilitating the development of students' digital skills (Lubis & Marlina, 2021). As curricula increasingly emphasize mastery of digital technology, school libraries must provide a variety of digital learning media, such as video tutorials, e-books, and interactive modules. By providing these various media formats, libraries support students in developing broader digital skills and enable them to learn more effectively.

Managing Digital Learning Resources in Libraries

Managing digital learning resources in libraries is a crucial aspect of supporting ICT learning. This management must be complemented by library managers' technical skills to manage digital collections for effective learning (Koesnandar *et al.*, 2022). Developing digital collections, such as e-books, video tutorials, articles, and interactive modules that are tailored to student needs and the ICT learning materials being taught, also requires attention. Libraries need to collaborate with publishers and digital learning platforms to acquire appropriate and curriculum-relevant resource collections. Maintaining and updating digital collections is crucial to ensure that the materials provided remain current and support student learning and development.

In addition to the explanation above, an engaging library atmosphere and literacy programs also play a significant role in shaping students' reading habits. An effectively managed school library that offers engaging literacy activities can increase students' interest in reading and enrich their knowledge (Ikhsan, 2023). Libraries that actively organize literacy programs, such as book clubs and reading habituation, and manage both digital and physical learning resources can build a foundation and improve early literacy in students (Rizaldi & Hamdani, 2023; Mahendra *et al.*, 2024; Fismanelly *et al.*, 2024; Lestari, 2024). Through access to digital collections and literacy activities, students are assisted in finding and managing relevant and ethical information for accountability (Fajriyah & Prastowo, 2022; Febriani *et al.*, 2025). This shows the importance of innovation in library services to ensure the optimal benefits of digital learning resources.

METHODS

This research was conducted at SDIT Ibnu Sina, using qualitative methods to gain a deeper understanding of libraries' role in supporting ICT learning in elementary schools. The research process began with identifying the research problem, namely, how libraries can support ICT learning in elementary schools. Next, the researcher formulated specific research questions and conducted a literature review to understand the problem context and identify gaps in previous research on the roles of libraries and digital literacy in schools. Based on the literature review, the researcher formulated research objectives to guide data collection and analysis. Meanwhile, observations of technology use in the classroom and in the digital library were conducted to determine how students accessed the available digital learning resources and LMS.

Data were collected through in-depth interviews with the Vice Principal for Curriculum (Mrs. RR), who is responsible for teaching ICT and managing digital resources, including e-books and other digital learning platforms. Observations focused on student interactions with the school's digital facilities, including access to the LMS and use of available digital materials. After collecting data from interviews, observations, and document analysis, the data were analyzed by matching the responses to the previously formulated research questions. Finally, the researcher conducted a thematic analysis to identify key themes that emerged, particularly those related to the library's role in ICT learning and the challenges of managing digital learning resources.

RESULTS AND DISCUSSION

By using digital libraries, students can improve their digital literacy, a crucial skill for independent and effective ICT learning. To learn more about how this is implemented in schools, see the interview with SDIT Ibnu Sina below.

Learning Resources and Student Access to ICT Learning Materials at SDIT Ibnu Sina

ICT learning resources at this school rely more on modules developed by teachers themselves, rather than on printed textbooks as the primary source. Teachers at SDIT Ibnu Sina develop learning materials tailored to students' needs, including worksheets and teaching materials that are more flexible and aligned with the current curriculum. Teachers at SDIT Ibnu Sina demonstrate a more dynamic and adaptive approach to technological developments that can be tailored to classroom needs.

Students are increasingly accessing ICT learning materials from teachers via Google Classroom and LMS, where they receive materials to study at home before continuing with practice and assignments at school. Google Classroom is a learning platform that allows students to access online materials and complete ICT-related assignments independently outside school hours. This platform also facilitates two-way communication between teachers and students, enabling discussions and consultations about difficulties students face in understanding the provided ICT material. Meanwhile, the LMS allows students to access digital learning materials, such as e-books, learning videos, and interactive modules provided by the school. This LMS also supports students in accessing learning more flexibly, both at school and at home, so they are not limited by time or place when learning ICT materials. This system increases students' access to teaching materials relevant to ICT learning.

From these findings, it can be concluded that SDIT Ibnu Sina prioritizes the use of digital technology in ICT learning, using the Google Classroom platform and an LMS as the primary sources of learning materials, and reducing reliance on physical textbooks. This supports research suggesting that the use of digital media in ICT learning is increasing, as it offers students greater flexibility and accessibility (Azzahra & Presetyo, 2024). The use of digital media must also be supported by further training for both teachers and students to ensure that ICT learning objectives are achieved optimally and equitably for all students (Kurniawan & Zabeta, 2025).

Perpustakaan dan Sumber Belajar Digital di SDIT Ibnu Sina

The school library provides a variety of digital learning resources to support ICT learning. The Vice Principal for Curriculum explained,

"Meskipun perpustakaan tidak mengandalkan buku fisik sebagai sumber utama, mereka telah mengadopsi LMS sebagai platform untuk menyediakan sumber belajar digital yang dapat diakses oleh murid dan guru. LMS ini menyediakan berbagai materi pembelajaran digital, termasuk e-book, video pembelajaran, dan modul interaktif, yang dapat diakses oleh murid kapan saja dan dari mana saja, baik dari sekolah maupun rumah," (Wawancara Ibu RR)

This system facilitates the distribution of more dynamic and interactive ICT learning materials. The library at SDIT Ibnu Sina not only provides a physical collection of books but also offers digital collections, such as e-books, and provides access to the LMS platform used by students and teachers for online learning materials. The presence of e-books and other digital materials in the library supports the learning process by giving students direct access to learning media better suited to today's technology-based curriculum.

The SDIT Ibnu Sina Library also collaborates with Sekolah Gagah Ceria on librarianship training, enabling the library team to stay up to date with the latest developments in digital literacy. This training is crucial for updating the library staff's skills and knowledge regarding the use of digital technology, which

can then be passed on to students. The library at SDIT Ibnu Sina not only serves as a repository for physical book collections but also acts as a gateway to relevant digital learning resources, supporting ICT-based teaching at the school.

SDIT Ibnu Sina has utilized its library to provide access to digital collections through an LMS. The next priority is to ensure the quality and relevance of these digital collections, as well as optimize the use of the LMS to facilitate students' better access to the various materials they need. This aligns with research that also emphasizes the importance of maintaining and regularly updating digital collections to ensure they remain relevant and effectively support student learning (Lubis & Marlini, 2021).

Fasilitas Pendukung Pembelajaran TIK di SDIT Ibnu Sina

The school's Information and Communication Technology (ICT) learning support facilities have been designed to facilitate technology-based learning. The Vice Principal for Curriculum explained,

"Perpustakaan sekolah bekerja sama dengan berbagai pihak untuk menyediakan akses ke LMS, memungkinkan murid dan guru mengakses materi pembelajaran digital dengan mudah dan fleksibel. Di luar LMS, SDIT Ibnu Sina juga menyediakan ruang komputer yang digunakan untuk kegiatan pembelajaran berbasis teknologi, memberi ruang bagi murid untuk berlatih menggunakan komputer dan perangkat lunak yang diperlukan serta mengakses berbagai sumber daya digital yang disediakan melalui LMS," (Wawancara Ibu RR)

Adequate internet access at SDIT Ibnu Sina allows students to access online learning platforms, search for additional information, and complete assignments through the LMS. Additionally, a self-paced digital training program is provided to support students' digital skills development. Students have the freedom to access materials anytime, anywhere.

Overall, the facilities at SDIT Ibnu Sina support technology-based ICT learning. This aligns with research showing that adequate facilities are not only helpful in accessing information for learning but also for developing essential technological skills in the digital age (Nazira & Zahra, 2024). Schools should be able to provide various facilities such as computers, internet access, and digital teaching materials that support students' ICT skills from an early age (Afrianti & Musril, 2021). To maintain sustainability, facility maintenance must be carried out in a way that remains relevant to the evolving needs of ICT learning (Ramadhani et al., 2025).

The Influence of the Independent Curriculum on ICT Learning at SDIT Ibnu Sina

The Independent Curriculum has had a significant impact on ICT learning at this school, particularly in terms of learning approaches and library resource management. The Vice Principal for Curriculum explained,

"Salah satu pengaruh utama dari Kurikulum Merdeka adalah perubahan minat murid terhadap jenis media pembelajaran yang mereka sukai. Dengan pendekatan yang lebih berbasis pada proyek (P5) dan fokus pada keterampilan abad ke-21, murid kini lebih tertarik pada media berbasis audio-visual seperti video, gim, dan platform digital lainnya, dibandingkan dengan buku fisik atau pembelajaran berbasis teks," (Wawancara Ibu RR)

In response to these changes, schools have adapted their learning approaches. SDIT Ibnu Sina runs a literacy program to increase students' interest in reading, despite their tendency to gravitate toward digital and audiovisual media. Programs such as after-school reading corners, readathons, and guided reading sessions, including the Sirah Nabawiyah led by homeroom teachers, aim to maintain a culture of literacy among students. This literacy program also seeks to balance students' need for digital media with their ability to read texts and understand information from written sources.

In addition to the explanation above, the influence of the Independent Curriculum is also evident in how libraries manage their digital collections. Libraries do not rely excessively on physical books; they continue to provide digital learning resources accessible through the school's Learning Management System (LMS), such as e-books and learning videos. This is crucial because the Independent Curriculum has heightened the need for more flexible, accessible online learning resources. The use of an LMS in ICT learning, which allows students to access digital materials freely, aligns perfectly with the Independent Curriculum's emphasis on more flexible, needs-based learning. Libraries must adapt by offering a variety of digital collections and by supporting students' access to online learning platforms (Hadiapurwa *et al.*, 2021). In this case, schools must be more active in building a culture of digital literacy so that students can use technology wisely, rather than focusing solely on digital entertainment.

Challenges in Connecting Libraries with ICT Learning at SDIT Ibnu Sina

Based on an interview with the Vice Principal of Curriculum at SDIT Ibnu Sina, several challenges were encountered in connecting the library with ICT learning at this school. Although the library already provides various digital learning resources through its LMS and e-book collection, several obstacles still need to be overcome to enhance the library's role in technology-based learning. The following are some of the main obstacles hindering the library's optimal function:

1. Limited Digital Skills of Students and Library Staff

One of the main challenges faced is the limited digital skills of some students and library staff. Although students at SDIT Ibnu Sina have access to an LMS and digital collections, not all students can fully utilize these resources. Library staff also lack sufficient skills in managing and utilizing information technology to support ICT learning in schools. This supports research showing that many school librarians lack adequate competency in operating digital library systems, such as SLiMS, and in utilizing online learning platforms (Wasilah *et al.*, 2025). Without adequate training, digital collection management in libraries may not be optimal, thereby reducing the effectiveness of available resources—Digital Performance of Library Students and Staff.

2. Limited Technology Facilities

Although SDIT Ibnu Sina has a computer room and internet access, it must be acknowledged that there are still limitations in terms of the number and quality of technological facilities available to students. This limitation is primarily due to unstable internet access, which becomes an obstacle when students need to access ICT learning materials from the LMS or other online platforms. This aligns with research showing that many schools lack adequate facilities to support technology-based learning. Limited facilities, such as insufficient computer rooms, unstable internet access, and outdated digital collections, are significant obstacles to optimizing the library's role in supporting ICT learning. These limited facilities prevent students from accessing digital learning materials that could support their understanding of ICT (Hadi *et al.*, 2025).

3. Relevant and Up-to-Date Digital Collection Management

Another challenge is maintaining the relevance and up-to-dateness of the library's digital collections. Although the SDIT Ibnu Sina library already provides a variety of e-books and digital materials, these collections need to be regularly updated to keep pace with the rapid development of ICT learning. For example, many learning materials need to be adapted to the ever-evolving curriculum, particularly with the implementation of the Merdeka Curriculum (Kurikulum Merdeka), which prioritizes project-based learning (P5). This is consistent with research suggesting that libraries must collaborate with various parties, such as publishers and digital learning platforms, to ensure collections remain up-to-date and relevant (Ilhami *et al.*, 2024).

4. Changes in student interest in learning media

The Vice Principal for Curriculum stated that, with the implementation of the Independent Curriculum, students' interest in reading tends to decline, and they are more attracted to audio-visual and game-based learning media, which are more engaging. This aligns with research showing that the digital generation is more attracted to visual and interactive media, which can make them more engaged in the learning process. This preference change requires libraries to adapt by providing content that suits students' learning media preferences (Darmawan *et al.*, 2025). ICT-based learning in the Independent Curriculum in elementary schools should also yield benefits, such as increased motivation to learn and easier access to information, provided that teachers are ready to integrate technology (Asfiana *et al.*, 2024).

CONCLUSION

The library at SDIT Ibnu Sina has played a significant role in supporting ICT learning by providing digital resources through its LMS and e-book collection. However, several challenges remain in managing and utilizing this technology, such as limited digital skills among both students and library staff, as well as limited technological facilities, which are significant obstacles to optimizing the use of the provided digital learning resources. Therefore, while the library's potential to support ICT-based learning is significant, significant challenges remain that need to be addressed to maximize its benefits. Recommendations include improving digital skills training for students and library staff to enable them to utilize technology and digital resources more effectively. Furthermore, improvements to the school's technological infrastructure, such as adding computer rooms and improving internet access, are needed to ensure all students can access digital learning materials without barriers. The library also needs to regularly update its digital collection to remain relevant to curriculum developments and dynamic learning needs.

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