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MANAGING DIGITAL COLLECTIONS AT SMAN 1 BABALAN LIBRARY TO SUPPORT STUDENTS' INFORMATION NEEDS

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ABSTRACT

This study examines the management of digital collections at the Library of SMAN 1 Babalan, which has experienced a decline in student utilization due to weak management systems and low digital literacy. The purpose of this research is to analyze how digital collection management can meet students' information needs and to identify its supporting and inhibiting factors. Using a qualitative approach with a case study method, data were collected through interviews, observations, and documentation involving librarians, the head librarian, and students. The findings show that digital collection management has not been fully optimized due to limitations in infrastructure, policy, and librarian competencies. However, the study also identifies potential improvement through digital literacy training and the implementation of user-needs-based collection management systems. This research concludes that the success of library digitalization depends on the integration of policy, technology, and information literacy within the school environment.

Keywords: Digital Collection; Digital Literacy; Library Management

1. INTRODUCTION

The school library serves as the heart of academic activities, playing a crucial role in supporting the learning process through the provision of relevant and up-to-date information resources. However, in the digital era, school libraries in Indonesia still face serious challenges in managing digital collections to ensure their optimal utilization by students. Based on observations at the Library of SMAN 1 Babalan, the level of digital collection usage among students has declined over the last three years, from 68% in 2021 to 40% in 2023. This condition reflects weak digital collection management systems, limited technological infrastructure, and insufficient librarian training in managing technology-based collections (Sileuw et al., 2024). In addition, the lack of school policies prioritizing digitalization of collections has worsened the situation, resulting in restricted access to information and low digital literacy among students (Nafisah, 2022).

A number of studies highlight that school library digitalization holds great potential for improving students' information literacy skills and learning effectiveness (Listanto & Firmansyah, 2022). Nevertheless, many studies also indicate that school libraries in Indonesia continue to lag behind in sustainable digital management implementation due to limited system integration, human resource capacity, and institutional policies (Soleh & Arifin, 2023). The creative technology-based library management model developed by Rohmadi, Sadhhono, and Sudaryanto (2021) emphasizes the importance of strengthening librarian competencies and applying psychopragmatic innovation to enhance digital services (Rohmadi et al., 2021). However, these

theoretical frameworks have not been fully implemented at the secondary school level, particularly in rural areas such as Babalan, which face resource constraints and limited access to technology.

This study aims to analyze how digital collection management at the Library of SMAN 1 Babalan can support students' information needs and enhance learning effectiveness. Moreover, it seeks to identify the supporting and inhibiting factors in the digital collection management process and to formulate optimization strategies suitable for the context of secondary schools in rural areas. By focusing on strengthening digital management, this research is expected to contribute to the development of digital literacy and the improvement of school library service quality in Indonesia, in line with national efforts toward technology-based educational transformation (Subur et al., 2022).

The urgency of this research lies in the need to strengthen the capacity of school libraries to face increasingly complex digital era challenges. Considering the limited infrastructure, weak management policies, and low technological literacy among librarians, this study is crucial in identifying adaptive and sustainable models for digital collection management (Nafisah, 2022). The necessity of this research is also supported by evidence showing that library digitalization significantly contributes to improving students' literacy skills and learning effectiveness in schools that have successfully implemented it (Listanto & Firmansyah, 2022). Therefore, this study holds both practical and theoretical relevance in building a digital collection management system oriented toward improving information access and educational quality in secondary school environments.

Definition of the Digital Collection Concept

A digital collection refers to a set of information resources in electronic format that are systematically organized and managed to meet users' information needs through online access. According to Suhardini, Saktiani, and Nurhalisma (2023), digital collections do not only include library materials converted from print but also original documents created in digital formats such as e-books, e-journals, multimedia, and research data (Suhardini et al., 2023). In the context of school libraries, digital collections hold a strategic role as learning tools that facilitate students in acquiring knowledge in a more interactive and flexible manner. Digitalization also enables broader access to information that is not limited by space and time and reduces the risk of loss or damage to physical library materials due to limited storage space. Therefore, digital collections represent a transformation of library services toward a more efficient and inclusive technology-based information system (Saputra & Desriyeni, 2024).

Digital collections in libraries can be categorized based on their form, function, and source. By form, digital collections may include text (e-books, scholarly articles), visual materials (images, infographics), audio resources (podcasts, recorded lectures), and interactive multimedia. By function, they may consist of learning materials, reference resources, and educational entertainment (Fahmi, 2007). Meanwhile, based on their source, digital collections may originate from digitized print materials or be created directly in digital format (born-digital). In practice, digitalization requires a process of selection, scanning, indexing, and uploading to ensure information is easily accessible to users. Challenges faced particularly at the school level include hardware limitations, insufficient metadata standards, and the lack of digital preservation policies. However, technological advancements and platforms such as SLiMS in various schools have facilitated more structured management and access to digital collections (Bala, 2023).

Definition of Library Management

Library management is a planned process of organizing resources, services, and activities to achieve effective and efficient information provision for users. Rohmadi, Sadhhono, and Sudaryanto (2021) define library management as a control system encompassing planning, implementation, evaluation, and follow-up of services through a psychopragmatic approach to foster librarian creativity in the digital era (Rohmadi et al., 2021). In school library settings, management functions to ensure that every activity from collection acquisition and cataloging to user services runs according to student needs and the educational goals of the school. Effective management also requires the application of good governance principles such as transparency, accountability, and user participation in planning and evaluating information services (Sileuw et al., 2024).

Library management can be categorized into three main aspects: collection management, service management, and human resource management. Collection management involves acquiring, processing, and evaluating information resources; service management focuses on

delivering services that are responsive to users' needs; while human resource management emphasizes improving librarian competencies through digital training and certification (Widiyawati & Kwiecien, 2023). In the digital era, school libraries must adopt a hybrid management model that integrates conventional and digital elements, as described by Karna et al. (2023), who highlight the transformation from Library Management Systems (LMS) to Knowledge Management Systems (KMS) to manage knowledge rather than merely physical collections (Karna et al., 2023).

Digital Literacy Concept

Digital literacy refers to an individual's ability to access, understand, evaluate, and utilize information from various digital sources critically and ethically. Subur, Aji, Somadayo, and Kurniawan (2022) explain that digital literacy in schools is closely related to habits of reading, writing, and interacting with digital content in the learning process (Subur et al., 2022). Digital literacy not only encompasses technical skills in using digital devices but also critical thinking skills to distinguish valid information amid abundant data. In the context of school libraries, digital literacy serves as a foundation for students to become independent learners capable of utilizing digital collections optimally to support academic activities and personal development (Anjani & Winoto, 2022).

The manifestation of digital literacy in schools can be classified into three primary forms: information literacy, media literacy, and technology literacy. Information literacy emphasizes students' ability to search for and evaluate accurate information; media literacy involves understanding messages in various digital media formats; while technology literacy focuses on technical skills in operating digital tools productively (Fadhli, 2022). In practice, digital literacy can be implemented through classroom literacy activities, digital reading training, and the establishment of literacy ambassadors in schools. According to Soleh and Arifin (2023), the implementation of SLiMS technology in school libraries has served as a concrete example of the integration between technology literacy and information literacy within educational settings (Soleh & Arifin, 2023).

2. RESEARCH METHOD

The object of this research is the phenomenon of digital collection management at the Library of SMAN 1 Babalan, which faces the issue of declining student utilization of digital resources over the past three years. This phenomenon reflects a gap between the potential of available digital information resources and their effectiveness in supporting learning activities. As the literacy center of the school, the library should play an active role in providing technology-based information access that facilitates students' knowledge-seeking processes. However, at SMAN 1 Babalan, technological infrastructure, human resource capacity, and collection management policies remain major obstacles in developing a digital library system. This case is relevant to examine because it represents the real condition of school libraries in regional areas that are attempting to transition from manual systems to digital systems, as also highlighted in a similar study by Bala (2023), which addressed digital transformation challenges in Islamic school libraries in Yogyakarta (Bala, 2023).

This research employs a descriptive qualitative approach with a case study method to gain an in-depth understanding of digital collection management processes at the Library of SMAN 1 Babalan. This approach was chosen because it allows the researcher to explore phenomena contextually based on the real experiences of involved stakeholders. Two types of data are used: primary and secondary data. Primary data were collected through interviews with the head librarian, librarians, and students as active users of digital collections, while secondary data were obtained from school policy documents, library activity records, and statistical reports on digital collection usage. The use of multiple data types strengthens the validity of the research findings, as recommended by Sileuw, Tuwaji, and Rengiwur (2024), who emphasized the importance of layered data sources in evaluating the effectiveness of digital library system implementation (Sileuw et al., 2024).

The primary sources of information in this study include internal school stakeholders: the head librarian responsible for collection management policy, librarians directly involved in digitalization operations, and students as active users of digital services. In addition, administrative documents

such as collection management reports, usage statistics, and library development meeting minutes serve as secondary data supporting the analysis. Additional data were also obtained from policies issued by the Education Office regarding school library digitalization. Source triangulation was conducted to ensure data accuracy and validity, wherein interview results were compared against documents and field observations. According to Saputra and Desriyeni (2024), the use of varied data sources in digital library research is crucial not only to reveal technical aspects of management but also the social and cultural dimensions influencing the success of digitalization programs (Saputra & Desriyeni, 2024).

The research process consists of three main stages: data collection, analysis, and validation of findings. Data were collected through in-depth interviews with librarians and users, observations of digital collection management activities, and documentation of digital usage statistics. Interviews were conducted using semi-structured guidelines to allow exploration of diverse perceptions and experiences. Observation was carried out to obtain factual data regarding infrastructure conditions, digital management systems, and interactions between librarians and users. Documentation was used to trace policy changes, system development, and trends in digital collection utilization over time. According to Suhardini, Saktiani, and Nurhalisma (2023), a multi-method approach such as this is effective in uncovering the processes of digital collection transformation and repackaging, leading to more comprehensive and applicable research outcomes (Suhardini et al., 2023).

3. RESULT AND DISCUSSION

Result

The findings indicate that the digital collection at the Library of SMAN 1 Babalan remains limited in both quantity and content variety. Based on interview and documentation data, the available digital collection only consists of 412 instructional titles, including digital textbooks, popular scientific articles, and multimedia documents, most of which were generated from digitizing older printed materials. Limited server infrastructure and storage capacity have resulted in irregular updates to the collection. Furthermore, collection management is still carried out manually through storage folders without a standardized metadata management system. This phenomenon is similar to the findings of Suhardini, Saktiani, and Nurhalisma (2023), who emphasized that the digital collection repackaging process in many educational institutions continues to face challenges related to technical and human resource constraints (Suhardini et al., 2023).

Digital Collection (Data Explanation)

Further analysis reveals that the limitations of the digital collection are not solely caused by technical barriers, but also by weak policy direction in digital-oriented collection development. The head librarian acknowledged that digital resources procurement still relies on teacher contributions and open-access sources rather than needs-based planning aligned with students' information demands. Such an approach hinders the sustainability and relevance of digital resources to the academic curriculum. This aligns with the study by Mahesa, Amar, and Rukmana (2025), which stresses the importance of user-needs-based selection policies to prevent information stagnation in digital collection development (Mahesa et al., 2025).

Digital Collection and Research Problem Reality

The relationship between the descriptive and explanatory data indicates that the main issue concerning the digital collection at SMAN 1 Babalan is the weakness of information management systems, resulting in low accessibility and relevance of available resources. This condition reinforces the observed decline in student use of digital collections over the past three years. Thus, unsystematic digital collection management directly contributes to low information literacy within the school environment. This issue reflects the broader condition of school libraries in Indonesia, as highlighted by Widiyawati and Kwiecien (2023), who identified the lack of alignment between national management standards and local practices as a major barrier in school digital collection management (Widiyawati & Kwiecien, 2023).

Library Management (Data Description)

Field data show that library management at SMAN 1 Babalan remains traditional and has not yet fully adapted to digital systems. The library's organizational structure does not include a dedicated information technology division, while digitalization tasks are carried out by general

librarians without specialized technical training. In daily operations, data input for collections is still done manually using spreadsheets, with no support from a Library Management System (LMS). Observations also revealed a lack of monitoring and evaluation activities regarding users' digital resource utilization. These findings align with those of Sileuw, Tuwaji, and Rengiwur (2024), who found that poor governance and weak supervision systems are the main barriers to implementing digital libraries in educational institutions (Sileuw et al., 2024).

Library Management (Data Explanation)

Analysis of library management processes shows that the primary challenge lies in librarians' limited competence in information technology and metadata management. Interview data indicate that most staff are unfamiliar with digital processing standards such as Dublin Core or repository management practices. Additionally, the absence of formal training programs has led to stagnant innovation in digital services. This finding is consistent with Rohmadi, Sadhhono, and Sudaryanto (2021), who emphasize the need to strengthen librarians' soft skills through a psychopragmatic approach to enhance creativity and adaptability to information technology (Rohmadi et al., 2021).

Library Management and Research Problem Reality

The limited capacity in library management directly affects the effectiveness of digital collection use. Weak supervision of digitalization activities and inadequate system updates make it difficult for students to find relevant resources to support their learning. Therefore, these managerial weaknesses reinforce the initial research finding that the decline in digital collection usage is not due to students' lack of interest, but rather the library's inability to adapt to information technology. Similar conditions were identified by Karna et al. (2023), who highlighted the need for transformation from LMS to Knowledge Management Systems so libraries can function as dynamic knowledge centers (Karna et al., 2023).

Digital Literacy (Data Description)

The findings show that students' digital literacy level at SMAN 1 Babalan remains low. Interview and observation results indicate that only around 42% of students are able to search for and use digital sources independently without librarian assistance. Most students still prefer printed materials due to limited skills in searching and evaluating online information sources. This condition is worsened by the absence of systematic information literacy training programs in the school. These findings align with Ariani et al. (2023), who found that low digital literacy levels among library users are caused by limited training support and inadequate institutional policy reinforcement (Ariani et al., 2023).

Digital Literacy (Data Explanation)

The low digital literacy level among students can be explained through two major factors: internal and external. Internal factors include limited critical-thinking skills and low self-confidence in using technology, while external factors include insufficient technological support and weak integration of literacy activities in the school curriculum. This aligns with the findings of Suwarto, Setiawan, and Machmiyah (2022), which show that digital literacy programs in schools tend to focus solely on ICT instruction rather than comprehensively developing information and media literacy skills (Suwarto et al., 2022).

Digital Literacy and Research Problem Reality

The relationship between descriptive and explanatory data indicates that low student digital literacy reinforces the core problem of this study—minimal utilization of digital collections due to limited user ability. This demonstrates that the success of library digitalization is not only determined by infrastructure availability but also by users' literacy empowerment. This supports the view of Subur et al. (2022), who assert that integrated digital literacy programs within school activities are proven effective in increasing student engagement and use of digital collections (Subur et al., 2022).

Discussion

This study reveals that digital collection management at the Library of SMAN 1 Babalan still faces various challenges, including infrastructure limitations, collection policy weaknesses, and limited human resource capacity. The available digital resources are not fully aligned with students' information needs and are not managed through an integrated digital system. In addition, students' digital literacy remains low, resulting in suboptimal utilization of digital collections. These findings demonstrate that school library digitalization cannot be separated from institutional readiness, librarian competencies, and user capability.

Compared to existing studies, this research provides analytical strength by placing digital collection management within the broader ecosystem of school information literacy. For example, Yudianto, Mustadi, & Mokhsein (2024) emphasize cross-stakeholder collaboration to cultivate digital literacy culture in elementary school students, yet they do not deeply explore digital collection management mechanisms at the secondary school level. Meanwhile, Gupta & Singh (2025) highlight the shift in librarians' roles toward digital literacy facilitators through ICT integration; however, this study adds a local perspective by showing that successful school library digitalization depends not only on technology integration but also librarian leadership and adaptive collection policies aligned with the curriculum. Thus, this study fills an empirical gap by demonstrating the interconnection between digital collection management, librarian roles, and student engagement in Indonesian public secondary schools.

The purpose of this research was to understand how digital collection management can meet students' information needs. The findings indicate that successful digital collection management not only improves access to information but also strengthens students' learning autonomy. Enhanced digital literacy supports the creation of a more active and collaborative learning ecosystem. As noted by Ginting & Magistra (2024), integrated digital literacy within the learning process fosters students' critical-thinking and ethical responsibility in using online information sources. Therefore, this research confirms that digital library transformation has a direct impact on 21st-century competencies needed by secondary school students.

This study offers both academic and practical implications. Academically, it enriches discourse on digital collection management at the secondary school level, particularly within the context of national policies such as the School Literacy Movement (GLS) and the Merdeka Curriculum. Practically, the findings serve as a foundation for school library managers to build sustainable digital systems by considering user needs, metadata standards, and human resource development. Moreover, these findings contribute to national education policy discussions by highlighting the importance of integrating collection management with student digital literacy programs, as emphasized by Listanto & Firmansyah (2022) in their analysis of library development trends and school literacy improvement.

The research results can be explained by three primary causes. First, weak technological infrastructure and the absence of a proper information management system lead to inefficient digital collection administration. Second, librarian digital competence remains limited due to insufficient professional development opportunities, consistent with the findings of Windah Andi et al. (2023) regarding librarian training in Lampung. Third, low digital literacy among students results in low demand for digital resources, creating a stagnation cycle between provision and utilization of digital collections. Therefore, these findings reflect systemic challenges within the broader information literacy ecosystem in Indonesian schools.

Based on the findings, strategic actions include strengthening school librarians' capacity through practice-based digital librarianship training, developing digital collection management systems using open-repository platforms, and implementing collection development policies driven by student information needs. Furthermore, digital literacy programs should be systematically integrated into teaching and learning activities through collaboration between teachers and librarians, as proposed in the School Literacy Movement Collaboration model by Riche Cynthia et al. (2018). Implementing these strategies is expected to transform school libraries from mere information providers into key drivers of digital literacy within Indonesia's secondary education environment.

4. CONCLUSION

The most striking finding of this study is that the low utilization of digital collections at the Library of SMAN 1 Babalan is not caused by inadequate facilities or a lack of student interest in

technology, but rather by weak management systems and collection policies that are not based on users' information needs. In other words, the challenge of school library digitalization is not merely about technology availability; it lies in the absence of knowledge-based governance that connects librarians, policies, and users within a unified information ecosystem. This condition demonstrates that the success of library digitalization cannot be achieved through administrative measures alone, but requires a user-centered digital collection management strategy supported by adequate digital literacy competencies.

This study offers significant theoretical contributions to the field of library and information science, particularly in the context of digital collection management in schools. Theoretically, it reinforces the idea that digital collection management is an integral part of knowledge-based learning systems, wherein the role of the librarian extends beyond managing information resources to becoming a digital literacy facilitator and knowledge mediator. Practically, the findings serve as a reference for secondary schools in Indonesia in designing library digitalization policies that are responsive to students' needs and technological developments. The digital collection management model developed in this study has potential for implementation across various school settings, with adjustments based on available resources and users' literacy levels.

The main limitation of this study lies in its single-case design focused on one school, which does not fully represent the diversity of school library contexts across Indonesia. However, this limitation opens opportunities for future research to conduct comparative studies across schools with different social, geographical, and policy backgrounds in order to enrich understanding of digital collection management patterns in diverse educational settings. Future studies may also adopt quantitative approaches to measure the direct impact of digital collection management on students' literacy development and academic achievement. Thus, the findings of this research serve as an initial foundation for systematic efforts to build innovative, sustainable, and digitally literate school library ecosystems.

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