

Empowering Students' Digital Literacy through Google Classroom: A Case Study of Library-Based Learning in Indonesian School

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Abstract:

This study aims to explain the implementation of the Digital Literacy Movement through Google Classroom in the school, analyze the challenges faced, and evaluate its impact on students' digital literacy skills. The research subjects included the head librarian, literacy assistant teachers, librarians, and 11th-grade students. The method used was a descriptive qualitative case study. Data collection was conducted through observation, documentation, and interviews, with thematic analysis employing triangulation of sources, techniques, and theories. The study's results indicate that the digital literacy program, implemented through Google Classroom, is effective, with the library serving as both a digital content provider and a learning facilitator. Challenges faced include limited devices, unstable internet connectivity, and student distractions during online learning. Nevertheless, this program successfully increased students' reading interest, critical thinking skills, and collaborative abilities. This research contributes to the development of library-based digital literacy theory and offers a practical model that can be adapted by schools in 3T (frontier, outermost, and disadvantaged) areas. However, this study was limited to a single school context and a short research period, so further research is needed in broader and more diverse contexts.

Key Words: Digital literacy, School Literacy Movement, Library, Google Classroom

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INTRODUCTION

The current development of digital technology has had a significant impact on various sectors of life, particularly education (Timotheou et al., 2023). One aspect that requires attention is digital literacy, which encompasses not only the ability to use technological devices but also the ability to access, evaluate, and use information critically (Nguyen & Habók, 2024). Digital literacy also encompasses ethical awareness, collaboration skills, and practical communication skills using digital devices (Martínez-Bravo et al., 2022). These skills are crucial in the era of globalization and are fundamental competencies required for students to compete internationally (Purwanto et al., 2023). Without adequate digital literacy skills, students will struggle to cope with rapid

technological change (Udeogalanya, 2022). Therefore, every school must integrate digital literacy into its learning, including through library-based digital literacy programs, which are the focus of this study.

Despite the growing importance of digital literacy, many schools continue to face challenges in implementing it effectively. Most school libraries in Indonesia still rely on printed book collections and have not yet fully utilized digital information resources, such as e-books, e-journals, and learning multimedia (Listanto et al., 2025). This creates an imbalance between rapidly evolving technology and schools' ability to provide relevant and up-to-date learning resources. Meanwhile, the use of learning platforms such as Google Classroom in classrooms has begun, but it has not yet optimally supported library-based digital literacy programs. Therefore, this research is crucial to examine how Google Classroom can be integrated into the Digital Literacy Movement in school libraries, particularly at SMA Negeri 1 Kotabaru.

In the field, the phenomenon shows a gap between the use of technology in the classroom and in the school library. Many schools have already adopted digital platforms for classroom learning, but school libraries continue to struggle with adapting to these developments. This hinders students' access to digital information that can support their learning. At SMA Negeri 1 Kotabaru, despite the availability of information technology facilities, the library still places a greater emphasis on its printed book collection and has not fully leveraged technology to support digital literacy. The Google Classroom-based Digital Literacy Movement program in school libraries is a relevant solution that increases students' access to digital information, enabling them to develop better digital literacy skills.

Several previous studies have demonstrated the importance of digital literacy in schools. Itakkar highlighted the role of Google Classroom in facilitating interactions between educators and students, as well as supporting distance learning (Adam et al., 2022). Research by Amin also found that the use of Google Classroom can increase student engagement in learning activities (Shak et al., 2022). Hakim (2020) emphasized that digital discussion forums in Google Classroom can improve collaboration skills among students, while Rahmawati (2021) showed that the use of this platform can have a positive impact on students' critical thinking skills (Hakim, 2025) (Yuliana et al., 2021). However, most of these studies focus on the use of Google Classroom in classroom learning contexts, while its integration into library-based digital literacy programs remains relatively understudied.

Several other studies, such as those conducted by Kurniawan and Santoso (2022), have revealed challenges in integrating Google Classroom into school literacy programs, particularly related to limited infrastructure and low student motivation (Budiati et al., 2025). This creates a research gap that needs to be filled: how this learning platform can be more effectively integrated into digital literacy programs in school libraries. Therefore, this study aims to fill this gap by focusing

on the implementation of the Google Classroom-based Digital Literacy Movement in school libraries, thereby making a significant contribution to the development of digital literacy at the secondary school level.

This study offers novelty by examining the role of school libraries in supporting the Digital Literacy Movement through learning platforms like Google Classroom. While most previous studies have focused on implementing Google Classroom in the classroom, this study attempts to integrate the platform within the context of library-based digital literacy. By utilizing Google Classroom, libraries not only provide a collection of printed books but can also enrich students' digital literacy experiences through learning materials that can be accessed anytime and anywhere. This innovation is crucial for enhancing the library's role in supporting students' holistic development of digital literacy.

This research will examine three main issues: first, how the Google Classroom-based Digital Literacy Movement was implemented in the SMA Negeri 1 Kotabaru Library? Second, what obstacles were encountered during the program's implementation? Third, how does this program impact students' digital literacy levels? Focusing on the implementation of Google Classroom as a digital literacy tool in the school library, this research aims to describe the implementation process, analyze emerging obstacles, and evaluate its impact on students' digital literacy skills. The results of this study are expected to make an important contribution to the development of digital literacy models in other schools and serve as a reference for policymakers in formulating more effective digital literacy strategies.

RESEARCH METHOD

This research uses a qualitative design with a case study approach to explore the implementation of the Google Classroom-based Digital Literacy Movement at the SMA Negeri 1 Kotabaru Library in South Kalimantan. The case study approach allows for an in-depth examination of the experiences, perceptions, and interactions among key stakeholders, including the head librarian, literacy mentor teachers, librarians, and students. It offers insights into the challenges, processes, and impacts of digital literacy implementation in a high school setting with limited resources, particularly in areas with poor digital infrastructure and internet connectivity.

The study was conducted at SMA Negeri 1 Kotabaru from August to September 2025, chosen due to its commitment to developing digital literacy and its initiative to implement the Google Classroom-based Digital Literacy Movement. This school serves as a relevant example of how educational institutions in resource-limited regions can adopt digital literacy programs using available technologies. The research aims to explore the specific challenges faced by such schools and the effectiveness of using Google Classroom as a learning platform.

Data collection included semi-structured interviews with the head librarian, literacy mentor teachers, library staff, and students, aiming to gather insights into the implementation process, challenges, and impacts. Participatory observation was also conducted to observe student engagement with Google Classroom, such as uploading materials, participating in discussions, and submitting assignments. Additionally, assignment reports, book borrowing statistics, and documentation of digital materials were collected to assess student engagement and monitor changes in library usage related to the digital literacy program.

Data analysis was carried out thematically through stages of data condensation, display, and verification, ensuring the findings' validity through triangulation. Source, method, and theoretical triangulation were employed, using multiple data sources, diverse collection methods, and linking findings to established digital literacy theories. This approach aims to provide a comprehensive understanding of the implementation, challenges, and impact of the Google Classroom-based Digital Literacy Movement at SMA Negeri 1 Kotabaru.

RESULT AND DISCUSSION

Result

This study examines the Google Classroom-based Digital Literacy Movement at SMA Negeri 1 Kotabaru, which aims to improve students' ICT skills and ethical use of digital information. Google Classroom facilitates flexible, collaborative learning, helping students access materials, engage in discussions, and develop critical thinking. Interviews with the library director and literacy mentor teacher highlighted its positive impact, making learning more interactive and efficient. Observations showed that students, even those initially struggling with technology, improved their digital skills, including information search and collaboration. Overall, the program enhanced students' digital competencies, communication, and essential 21st-century skills, emphasizing the importance of integrating digital literacy into education to prepare students for global challenges.

Implementation According to the Head of the Library

This sub-finding discusses the implementation of the digital literacy program at SMA Negeri 1 Kotabaru, led by Mr. Dian Mahardika, S.Pd., the Head of the Library. The program uses digital platforms, such as Google Classroom and Instagram, to distribute literacy materials, facilitate online discussions, and assign tasks to enhance students' digital literacy, reading interest, and critical thinking skills. The school library functions not only as a provider of printed materials but also as a hub for digital content, fostering interaction between students and teachers and facilitating online literacy activities.

In an interview, Mr. Dian explained, "The distribution of literacy materials is done online through Google Classroom, where we share articles and reading files, as well as literacy content from the school's Instagram account." This highlights the library's active role in distributing digital literacy materials and leveraging social media to connect with students. Mr. Dian also emphasized the use of online discussion forums on Google Classroom, which allow students to interact and analyze literary works, thus enhancing their critical thinking and communication skills.

Although the program was generally successful, challenges such as limited access to technology, inadequate devices, and unstable internet connections were noted. Additionally, teacher involvement in facilitating digital literacy activities was affected by their other teaching responsibilities. Despite these obstacles, researchers observed a positive impact on student reading interest, indicated by an increase in fiction book loans from the library, suggesting that the program effectively motivated students to engage with reading and critical discussions.

Overall, the data shows that despite challenges related to access to technology and teacher time constraints, the Google Classroom-based digital literacy program has positively impacted literacy activities at SMA Negeri 1 Kotabaru. The program has successfully increased students' reading interest and critical thinking skills, with the library playing a key role in distributing both digital and print materials. This highlights the potential of technology to enhance literacy programs, even in schools with limited resources.

Table 1. Implementation, According to the Head of the Library

Informant	Interview Excerpt	Indicator
Head of the Library	"Literacy materials are distributed online through Google Classroom, and we also share content from the library's Instagram account."	Information Access, Social Media Use
Head of the Library	"Online discussion forums through the comments feature in Google Classroom allow students to interact and analyze literary works in greater depth."	Critical Discussion, Thinking Skills

Table 1 presents two interview excerpts showing how the Head of the Library uses technology to enhance literacy activities. The first excerpt highlights the use of Google Classroom and Instagram to distribute literacy materials, while the second focuses on how online discussion forums foster student interaction and critical thinking. The data reveals that these technologies significantly boost student engagement in literacy activities and provide opportunities for developing critical thinking and communication skills, demonstrating that technology not only facilitates material access but also promotes analytical and interactive learning in digital literacy.

The Role of Literacy Companion Teachers

This sub-finding explores the crucial role of Literacy Assistant Teacher, Mrs. Nelly Rima Santeri, M.Pd, in supporting the Google Classroom-based digital literacy program at SMA Negeri 1 Kotabaru. Her responsibilities include ensuring that all students have access to Google Classroom, providing technical support, and maintaining student motivation. Additionally, she offers feedback on assignments, facilitates discussions, and assists students in developing digital literacy skills such as accessing and analyzing digital reading materials and participating in discussions.

In an interview, Mrs. Nelly explained, "My job is to ensure that every student can easily access Google Classroom and understand how to use it." She also guides students in accessing digital materials and completing comprehension tasks. This highlights the essential role of the Literacy Assistant Teacher in providing technical support, ensuring that students can navigate Google Classroom and fully engage with the digital literacy content. Researchers believe the success of such programs depends on students' understanding of the platform and continued teacher support.

Mrs. Nelly further emphasized her role in maintaining student motivation, stating, "I often provide trigger questions to encourage active participation and provide feedback to ensure students stay engaged." This reflects her focus not only on technical guidance but also on fostering motivation and critical thinking. Her consistent use of prompting questions and feedback helps maintain student engagement and progress in digital literacy activities, demonstrating that motivation is a key factor in the program's success.

Despite her efforts, several challenges hindered the program's effectiveness. The limited and unstable internet connection often disrupted students' access to Google Classroom, and some students struggled to stay focused, distracted by social media or other apps. Nevertheless, Mrs. Nelly addressed these issues by emphasizing discipline in technology use for learning, and her ongoing support helped mitigate these obstacles.

Overall, the data indicates that Mrs. Nelly's role was essential for the success of the program. She ensured that students could access and understand how to use Google Classroom, providing guidance and motivation despite technical challenges. Her active involvement in maintaining student engagement and providing feedback significantly contributed to improving students' digital literacy skills, reading interest, and critical thinking abilities.

Library Members' Perspectives

This sub-finding examines the role of Literacy Assistant Teacher, Mrs. Nelly Rima Santeri, M.Pd, in supporting the Google Classroom-based digital literacy program at SMA Negeri 1 Kotabaru. Mrs. Nelly ensures that students have access to Google Classroom, provides technical guidance, maintains motivation, and offers feedback on assignments. She also facilitates discussions

and helps students develop digital literacy skills, such as accessing and analyzing digital reading materials, which are key to their engagement with the program.

In an interview, Mrs. Nelly explained that her role involves guiding students on how to access Google Classroom and digital materials while ensuring they complete comprehension tasks. This highlights the importance of clear guidance for effective use of the platform, as students' success relies on their understanding of how to navigate Google Classroom and engage with the materials. Continuous support from teachers is essential for students to fully benefit from digital literacy programs.

Mrs. Nelly also motivates students by posing triggering questions and providing constructive feedback on assignments. These efforts help maintain student engagement and encourage active participation in discussions. Despite challenges like unstable internet connections and distractions from other applications, her motivation and feedback significantly impacted students' engagement and critical thinking development.

Overall, Mrs. Nelly's role was crucial to the success of the program. Her support in ensuring access, offering guidance, and maintaining motivation helped students overcome obstacles and improve their digital literacy, reading interest, and critical thinking skills. The findings emphasize the importance of the teacher's active involvement in managing online learning dynamics for the program's effectiveness.

Table 2. Library Members' Perspectives

Informant	Interview Excerpt	Indicator	
Literacy Mentor Teacher	"My job is to ensure that every student can easily access Google Classroom and understands how to use it."	Technology Understanding of Platform Use	Access, Discussion
Literacy Mentor Teacher	"I often ask prompting questions to maintain student motivation and encourage them to participate in discussions actively."	Motivation, Participation	

Table 2 highlights two interview excerpts showing the Literacy Assistant Teacher's role in ensuring the success of the digital literacy program. The first excerpt demonstrates Ms. Nelly's efforts to ensure students understand how to access and use Google Classroom, while the second shows her using prompting questions to maintain motivation and encourage participation in discussions. Despite challenges like unstable internet connections, the data suggests that Ms. Nelly's active role in providing technical guidance, maintaining motivation, and offering feedback significantly contributed to improving students' digital literacy skills and critical thinking. This emphasizes the importance of the teacher's role in creating an effective learning environment in the digital age.

Student Perspectives

This sub-finding explores students' perspectives on the Google Classroom-based digital literacy program at SMA Negeri 1 Kotabaru, which aims to improve students' digital literacy through activities such as reading, summarizing, and analyzing literary texts. Students access materials via Google Classroom, participate in discussions, and complete assignments to enhance their reading, writing, and critical thinking skills. Despite challenges like unstable internet connections and screen fatigue, students, including Syarifah Fitria Umi Salmah, reported that the program improved their digital literacy and critical thinking skills.

Student Nahla Syafina Zahra highlighted the flexibility of the program, noting that she could access materials at any time and complete tasks like summaries and analyses. Although she faced issues like internet instability and piling assignments, she acknowledged the positive impact on her digital literacy and critical thinking abilities. The flexibility of accessing materials allowed students to learn independently and enhance their literacy skills despite these challenges.

Researchers observed that, despite technical difficulties, students remained engaged with the program. Google Classroom effectively facilitated the distribution of materials, and students continued to participate in assignments and discussions. Overall, the program positively impacted students' digital literacy habits, reading interest, and critical thinking skills, with increased participation and engagement, demonstrating the program's benefits despite the challenges.

Analysis and Discussion

This sub-finding analyzes the implementation of the Google Classroom-based Digital Literacy Movement at SMA Negeri 1 Kotabaru, focusing on the roles of various parties involved, including the Head of the Library, teachers, librarians, and students. The movement aims to enhance students' digital literacy skills by using digital platforms where students engage in activities such as reading, summarizing, and analyzing literary texts. It also promotes collaboration among students, teachers, and librarians to support the development of digital literacy skills, aligning with 21st-century educational demands.

In an interview, librarian Mrs. Evariani Ananda shared that her role goes beyond providing reading materials, as she also helps students access Google Classroom and overcome technical issues. This aligns with the view that digital literacy encompasses not just technical skills but also collaboration and communication. The librarian's involvement in solving technical obstacles highlights the importance of digital survival skills, ensuring students can effectively use technology despite limitations, as noted by Martin (2006) and Eshet-Alkalai (2004).

Student Muhammad Azka shared that, despite technical challenges like unstable internet connections, the program helped him improve his reading, summarizing, and critical thinking skills. This suggests that, while resource constraints posed obstacles, they also encouraged students to adapt and find creative solutions. These challenges reinforced the idea that digital literacy involves navigating risks and obstacles, as highlighted by Livingstone (2014) and Rahmawati (2021).

Overall, the findings indicate that the Google Classroom-based Digital Literacy Movement at SMA Negeri 1 Kotabaru successfully enhanced students' digital literacy skills, despite challenges like unstable internet and limited devices. The collaboration among librarians, teachers, and students was crucial for overcoming these obstacles and ensuring high participation. The ability to adapt to technical barriers, such as rotating personal devices and using offline materials, demonstrated the program's success in a resource-constrained environment.

Table 3. Analysis and Discussion

Informant	Interview Excerpt	Indicator
Librarian (Mrs. Evariani Ananda, S.Pd.)	"As a librarian, I not only provide reading materials, but also facilitate students' access to Google Classroom and digital materials, as well as help them overcome technical difficulties."	Technical assistance, Material
Student (Muhammad Azka)	"Even though I often have trouble with unstable internet connections, this program still helps me get more used to reading, summarizing, and thinking critically in discussions."	Reading skills, Critical thinking skills
Student (Nahla Syafina Zahra)	"I can access the material at any time, and literacy activities are not limited to reading, but also include making simple summaries and analyses."	Flexibility of access, Summarization and analysis

Table 3 presents interview excerpts from librarians and students that highlight their roles in the digital literacy process. The librarian emphasizes the importance of technical assistance in helping students access Google Classroom, while the student describes overcoming technical challenges through creativity and active learning. The flexibility in accessing materials further enhances student participation, helping improve their reading and critical thinking skills. Despite challenges like unstable internet connections, the collaboration between librarians, teachers, and students, along with creative solutions and support, played a key role in overcoming obstacles and improving digital literacy skills. The findings suggest that even with limited resources, such collaboration and student creativity can optimize digital literacy outcomes.

Discussion

The implementation of the Google Classroom-based Digital Literacy Movement at SMA Negeri 1 Kotabaru Library has yielded positive impacts, which have also garnered appreciation from various stakeholders. According to the Head of the Library, the success of this implementation lies in the integration of technology into library services that enrich students' literacy experiences. Librarians not only act as managers of printed book collections but also as technical assistants who help students access digital materials and overcome technical barriers (Mamabolo & Durodolu, 2023). This role of librarians is in accordance with the literature, which states that librarians function as facilitators in the digital literacy ecosystem. This is explained in research by Sweeney et al. (2020), which emphasizes the importance of technical assistance in facilitating access to digital information (Bonett et al., 2025).

The role of literacy mentor teachers in this study was also significant. Teachers not only taught but also served as guides and motivators in digital literacy activities. Interviews with teachers indicated that they employed a more flexible approach to teaching, utilizing Google Classroom for online discussions and literacy assignments that could be completed outside of class hours. This finding aligns with a study by Jones, which emphasized the need for teachers to adapt to technology in order to increase student engagement in literacy (Halik et al., 2024). Therefore, teachers play a significant role in creating an environment that supports students' digital literacy development.

The perspectives of library members interviewed in this study also showed a positive response to the existence of Google Classroom in enriching literacy resources. They found it easier to access various reading materials and gain a deeper understanding of the subject matter (Sari et al., 2024). This supports the opinion expressed by Wilson (2019), who stated that school libraries that digitize their collections can expand student access to relevant information (Wilson et al., 2022). However, library members also revealed several technical challenges related to devices and internet connections that sometimes hinder smooth access (Majola & Mudau, 2022).

From the students' perspective, despite challenges such as limited access to digital devices and unstable internet connections, the majority of students felt that digital literacy activities conducted in Google Classroom were beneficial in improving their reading interest and critical thinking skills ((Lestari & Nugraheni, 2022). This finding aligns with research by Rafiq (2020), which demonstrates that integrating technology into digital literacy activities can enhance students' critical thinking skills and reading comprehension (Mariam Bibi et al., 2025). Students also felt more comfortable and open in online discussions, indicating that this approach can encourage their active involvement in the learning process (Alawamleh et al., 2022).

The theoretical implications of these findings emphasize the important role of school libraries in developing a digital literacy ecosystem, which includes

not only aspects of managing printed books but also serving as a center for digital resources that support student literacy (Bakhtiar et al., 2024). Practically, the results of this study provide a clear picture of the importance of utilizing technology, particularly Google Classroom, in supporting the School Literacy Movement (SLM). By strengthening collaboration among librarians, teachers, and students, and improving the technological infrastructure in schools, schools can enhance digital literacy —a crucial requirement in 21st-century education (Aluko & Ooko, 2022). Furthermore, these findings can serve as a model for schools in areas with limited facilities to implement technology-based digital literacy with librarian assistance as a practical solution.

CONCLUSION

This study highlights the significant positive impact of the Google Classroom-based Digital Literacy Movement at the SMA Negeri 1 Kotabaru Library on students' digital literacy development. Librarians not only manage materials but also serve as technical assistants, helping students access digital content and overcome technological barriers. Despite challenges like limited devices and internet connectivity, the digital literacy activities have successfully enhanced students' reading interest, critical thinking, and digital literacy skills. This program reinforces the roles of librarians and teachers as literacy facilitators, emphasizing the importance of integrating digital literacy into 21st-century education.

The research contributes to digital literacy theory by showcasing the critical role of school libraries in creating digital literacy ecosystems, beyond just classroom teachers. These findings offer a fresh perspective on integrating digital literacy with the School Literacy Movement (SLM), emphasizing collaboration between librarians, teachers, and students. However, the study has limitations, including its focus on a single school, SMA Negeri 1 Kotabaru, during a short timeframe (August to September 2025). Therefore, the results are not generalizable to all schools. Future studies should explore digital literacy models in diverse school contexts and over extended periods to provide more comprehensive insights, particularly for schools with limited resources.

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