

Evaluation of the Implementation of *Makoba Edu* as a Digital Learning Media at MAN Kota Batu

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Abstract

The development of digital technology has encouraged changes in learning practices in madrasah, including the use of digital platforms as learning media. This study aims to analyze the use of digital platforms as digital literacy-based learning media in MAN Batu City. The research uses a descriptive qualitative approach with data collection techniques through interviews and passive participation observations. Interviews were conducted with teachers and students to obtain data on their experiences, views, and practices of using digital platforms in learning. In contrast, observations were conducted to see firsthand learning activities and the use of digital facilities in the madrasah environment. Data analysis was carried out in a descriptive-narrative manner through the stages of grouping, verifying, and interpreting data according to the focus of the research. The results of the study show that the use of digital platforms at MAN Kota Batu has developed as part of strengthening the digital madrasah ecosystem, especially through the use of Makoba Edu, which is supported by a learning management system, computer laboratory, school Wi-Fi, digital classrooms, and smart TVs. Digital platforms are utilized not only for attendance, distribution of materials, and assignment collection, but also to support the management of school administration. The findings of the study also show that the use of digital platforms contributes to strengthening students' digital literacy, especially in the aspects of learning skills, creativity, and collaboration. However, this study also found a number of challenges, such as inequality of access to technology, potential dependence on digital devices, decreased social interaction, and data security risks. Therefore, the use of digital platforms in madrasahs needs to be supported by adequate digital literacy, adequate infrastructure, and sustainable school policies so that digital learning can take place effectively and responsibly.

Keywords: Digital Literacy, Digital Madrasahs; Digital Platforms; Learning Media.



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1. INTRODUCTION

The development of digital technology has brought major changes in educational practices, including in the way schools manage learning, communication, and academic administration. The learning process no longer only takes place through conventional face-to-face, but also utilizes various digital platforms that allow teachers and students to access materials, collect assignments, discuss, and conduct evaluations more flexibly. In this context, digital platforms are not just technological devices, but media that form new patterns in learning interactions (Amelia & Mufid, 2025). Therefore, its use needs to be understood as part of learning transformation, not just as a complement to classroom activities. Run optimally if students and teachers can use technology capably, responsibly, and reflectively. This point is important because the quality of digital learning is not

determined by the sophistication of the platform alone, but by the ability of users to use it meaningfully (Zou et al., 2025).

In the context of madrasas, the use of digital platforms has a broader meaning because it is related to efforts to maintain the relevance of Islamic education in the midst of changing times. It is not enough for madrasas to keep up with technological developments, but also to ensure that the use of technology continues to support educational goals, both in terms of intellectual skills and the formation of responsible learning attitudes. Therefore, the use of digital platforms in madrasas needs to be read not only in terms of efficiency, but also in terms of learning quality and strengthening students' digital literacy (Mauluda et al., 2026). This kind of study is important so that digital transformation in madrasas does not stop at device changes, but really touches the way of learning and academic culture in schools.

Theoretically, digital literacy in this article is positioned not as an operational ability to use applications, but as a pedagogical competence that integrates technical skills, critical thinking skills, ethical communication skills, and awareness of security in a digital environment. This perspective places digital literacy as part of the six basic literacies, while emphasizing that students must be able to interpret information critically in order to be able to use technology for productive learning purposes. In the context of learning, digital literacy is an important prerequisite because the effectiveness of digital platforms is not only determined by the availability of applications but also by the ability of users to manage information, interact healthily, and utilize digital media to build knowledge. Therefore, in Islamic education, digital literacy needs to be placed as a conceptual foundation to ensure that the transformation of learning based on digital platforms remains in harmony with the formation of character, manners, and moral responsibility of students in the digital space (Azis & Rusydiyah, 2025; Ningsih et al., 2021).

MAN Kota Batu is one of the madrasas that develops digital learning quite intensively by utilizing various digital facilities, especially through the Makoba Edu platform, which is used to support attendance, material distribution, assignment collection, and cloud-based administration. This strengthening is also supported by other infrastructure such as digital classrooms, computer labs, school Wi-Fi, learning management systems, and smart TVs in classrooms. This condition shows that digitalization at MAN Kota Batu does not run sporadically, but is directed as part of the development of the digital madrasah ecosystem. However, the use of digital platforms cannot be viewed completely without problems. Behind the perceived benefits, there are a number of challenges, such as inequality of access to technology, potential dependence on digital devices, reduced.

Social interaction and data security risks. This challenge shows that the success of using digital platforms is not enough to measure the presence of digital applications or facilities, but also depends on the readiness of human resources, digital literacy skills, and school policies that are able to manage the impact of their use (Khasanah et al., 2026). Therefore, the study of digital platforms needs to be directed to the practice of their real use, including their impact on the learning process in madrasas.

Based on these conditions, the discussion of digital platforms in madrasas is not enough to describe the type of application used, but also needs to examine how the media really functions in learning. This kind of focus is important because the use of technology that seems active does not necessarily indicate a strengthening of the quality of learning. In the context of Islamic education, the use of digital platforms needs to be seen in terms of their ability to support student engagement, expand access to learning, and foster digital skills that are in line with the needs of today's students (Rahmawati et al., 2025). Thus, the study of digital learning practices in madrasas becomes relevant to understand the direction of ongoing learning changes.

A number of previous studies have shown that the use of digital technology in education contributes to learning flexibility, expanded access to materials, and strengthens more adaptive learning interactions. (Amelia & Mufid, 2025) emphasized that digital technology in madrasahs and pesantren has become an important part of educational development, while Rahayu et al. show that digital learning media are able to increase the effectiveness of the learning process when supported by the readiness of teachers and adequate facilities. On the other hand, (Hamidalloh & Hamdani, 2025) emphasized that digital literacy in Islamic education must be integrated with character formation and responsibility for the use of technology. Meanwhile, (Nurhayati et al., 2024) see that digital education innovation not only presents opportunities but also challenges that require serious institutional management. However, these studies tend to discuss the use of digital technology at the general level, not specifically examining how one particular digital platform is used in an integrated manner in the madrasah ecosystem to support learning as well as strengthen students' digital literacy. This is where the gap in this research lies, namely in the effort to read the use of digital platforms not only as a medium to help learn, but as part of an institutional strategy that shapes learning practices, digital culture, and digital literacy skills of students in madrasas.

The study of the use of digital platforms in madrasas is important because the use of technology in learning is not enough to judge the presence of digital applications or devices, but rather from how the technology supports a more effective, interactive, and responsible learning process. At this point, digital literacy is an inseparable element because the ability to use technology appropriately will greatly determine the quality of students' learning experience (Pujiono et al., 2025). Furthermore, the transformation of

digital platform-based learning in madrasas is not only related to the technical aspects of media use, but also related to the formation of digital literacy, learning effectiveness, and institutional readiness in responding to educational changes in the digital era. Thus, this research contributes to the development of Islamic education studies by showing how the integration of digital platforms, madrasah infrastructure, and school policies can form a distinctive, contextual, and relevant digital learning model for strengthening the learning culture in madrasas. Therefore, discussions about digital platforms in madrasah education need to be directed at the relationship between learning media, classroom use practices, and strengthening students' digital skills. In this direction, this research is expected to provide a clearer picture of the use of digital platforms as digital literacy-based learning media in the madrasah environment.

2. METHOD

This study uses a qualitative approach with a descriptive research type to understand the use of digital platforms as digital literacy-based learning media in MAN Batu City. This approach was chosen because the research is not oriented to the measurement of numbers, but to an in-depth understanding of the practice of using digital platforms in learning activities (Prayogi et al., 2025). The focus of the research is directed at the form of use of digital platforms, their relationship with digital literacy, and their impact on the learning process in the madrasah environment. With this approach, the research is expected to be able to describe the phenomenon being studied in its entirety according to the context that occurs in the field. The research data were obtained through interviews and passive participation observations. Interviews were conducted with key informants, namely teachers and students, to obtain data on the experiences, views, and practices of using digital platforms in learning. Meanwhile, passive participation observation was carried out to observe learning activities directly, teacher and student interaction, and the use of digital facilities that support the learning process at MAN Batu City. In this study, the researcher acted as the main instrument with the help of interview guidelines and field notes so that data collection took place more targeted and systematically.

Data analysis was carried out in a descriptive-narrative manner through the stages of grouping, verifying, and interpreting data based on themes that are in accordance with the focus of the research. The data obtained from interviews and observations were first classified, then compared to see the relationship between the use of digital platforms, digital literacy practices, and their impact on learning. To maintain the validity of the data, the researcher cross-checks between sources and between data collection techniques so that the information obtained is more credible (Akmal et al., 2024). Through this step, the results of the research were compiled to provide a clear picture of the use of digital platforms as digital literacy-based learning media in MAN Batu City.

3. RESULT AND DISCUSSION

3.1 Utilization of Digital Platforms in Learning at MAN Kota Batu

The results of the study show that the use of digital platforms at MAN Kota Batu is not only present as a learning support device, but has also been directed as part of the development of digital madrasas. Madrasas use the platform *Makoba Edu* intensively, especially to support attendance, assignment collection, material distribution, and gadget-based student administration. This utilization does not stand alone, but is supported by other infrastructures such as *Learning Management System*, computer labs, school Wi-Fi, digital classrooms, as well as *Smart TV* in almost all study rooms. These findings show that the use of digital platforms in MAN Kota Batu has moved from just using learning applications to strengthening a more systematic digital ecosystem (Amelia & Mufid, 2025).

In terms of function, the digital platform in this madrasah plays a role in two domains at once, namely the learning realm and the managerial realm. In the realm of learning, platforms are used to make it easier for teachers to deliver materials, assign assignments, and manage learning interactions with students. In the managerial realm, digital platforms assist schools in attendance monitoring, administrative management, and data-based storage *in the cloud* (Rohmah & Pradikto, 2025). Thus, the use of digital platforms at MAN Kota Batu is not limited to the learning process in the classroom but also supports more efficient madrasah governance. This condition shows that digitalization in madrasahs has touched a wider aspect than just a learning medium.

Makoba Edu at MAN Kota Batu functions not only as a learning medium but also as a means of strengthening students' digital literacy in daily learning practices. Through this platform, students are accustomed to accessing materials, collecting assignments, following learning directions, and communicating in a more orderly and responsible manner in the digital space. Based on interviews with PAI teachers, the use of *Makoba Edu* is accompanied by socialization to students and strengthening teacher capacity through training on the use of digital media such as *flipbooks* and *E-learning*, so that digital literacy does not develop spontaneously. However, it is built through habituation that is directed in learning. This condition shows that digital literacy at MAN Kota Batu grows through madrasah policy support, teacher readiness, and availability of facilities, so that the digital platform not only functions as a technical tool but also as a medium for the formation of digital learning skills that are integrated with learning management (Rahayu et al., 2025). This reaffirms that the form of use of digital platforms at MAN Kota Batu is integrated, both in learning and institutional management.

Reflectively, the use of digital platforms in madrasahs shows a change in learning orientation. Learning is no longer understood as an activity that relies entirely on

physical classrooms, but as a process that can be extended through digital spaces. Allow for more flexible access to materials and assignments. The shift in digital-based learning orientation at MAN Kota Batu has an impact on increasing learning flexibility, as students are no longer completely dependent on physical classrooms, but have wider access to learning materials, assignments, and interactions through available digital platforms. At the same time, this change also encourages a shift in the role of teachers from information delivery centers to learning facilitators, so that the quality of learning is increasingly determined by the ability of madrasas to build digital literacy, student learning independence, and directed technology management. However, this transformation must still be read critically. The presence of digital platforms does provide convenience, but that convenience is only meaningful if it really strengthens the quality of learning, not just moving conventional activities to digital mediums. Therefore, the use of digital platforms in this study needs to be understood as a form of change in learning practices that still requires strengthening the aspects of digital literacy and the management of technology use.

3.2 Digital Literacy in the Use of Learning Platforms

The use of digital platforms at MAN Kota Batu is closely related to the digital literacy of students and teachers. Digital literacy is the ability to use digital technology to access, manage, integrate, analyze, and disseminate information. This understanding emphasizes that digital literacy includes cognitive, ethical, social, emotional, and technical skills. With this foundation, the use of learning platforms cannot be separated from the ability of users to utilize technology appropriately. This means that digital platforms can only function effectively as a learning medium if users have adequate digital capacity (Zou et al., 2025).

At the practical level, the use of digital platforms in MAN Kota Batu encourages the growth of several components of digital literacy, especially *Learning Skills, creativity, and Collaboration*. Usage *Makoba Edu* and other digital means provide space for students to learn in a more independent way, access materials more quickly, and adjust the pace of learning to their needs. In addition, the presence of digital platforms also opens up opportunities for students to participate in discussions, share ideas, and build more active learning engagement. From this perspective, the use of digital platforms not only facilitates the transfer of materials but also expands students' learning experience in a digital environment (Nurhayati et al., 2024). Therefore, the results of the study show that the digital platform at MAN Kota Batu functions not only as a technical medium but also as a space for the formation of students' digital skills.

The dimension of creativity also seems to stand out in the use of digital platforms in this madrasah. Digital technology provides opportunities for teachers and students to develop learning materials and activities in a more diverse format. Use of apps such as

flipbook, E-learning, and other digital media shows that learning is no longer limited by one form of material delivery. For students, this situation is serious because they not only receive information, but can also be involved in the process of processing and presenting ideas in digital form. Thus, the digital platform in this study contributes to the formation of a more creative and not solely reproductive learning experience (Nurhayati et al., 2024).

In terms of collaboration, the use of digital platforms at MAN Kota Batu seems concrete in learning activities when students not only receive material from teachers but also engage in discussions, respond to assignments, exchange opinions, and convey the results of work through the available digital spaces. In this practice, digital literacy is realized in the ability of students to understand learning instructions, use digital media to communicate appropriately, cooperate with peers in completing assignments, and display learning outcomes in a more structured digital format. Thus, digital literacy at MAN Kota Batu does not stop at the skills of operating technology, but is evident in the way students actively build interaction, collaboration, and learning participation in a digital learning environment (Anwar et al., 2025). Furthermore, based on the results of the research, digital literacy at MAN Kota Batu develops in a close relationship with institutional policies. The availability of infrastructure, teacher training, and the direction of digital madrasah development provide a conducive environment for the growth of digital skills. This means digital literacy is not born automatically just because students use technology, but is shaped through a supportive learning ecosystem. In the context of Islamic education, this is important because digital literacy is not enough to be interpreted as a technical skill, but needs to be linked to the quality of using technology to learn responsibly and productively (Hamidalloh & Hamdani, 2025).

Based on the results of interviews and madrasah documentation, the use of digital platforms at MAN Kota Batu shows an increase after the implementation of *Makoba Edu* and the strengthening of digital learning support facilities. This trend is seen mainly in the use of platforms for attendance, material distribution, and assignment collection, with the most dominant functions being in the aspects of learning administration and student attendance monitoring. Compared to the previous condition, which still relies more on manual recording and distribution of materials directly or through non-integrated media, after the use of the madrasah digital platform, it is easier to archive data, monitor learning activities, and coordinate between teachers and students. Thus, the changes that have occurred are more accurately understood as a gradual improvement in the effectiveness of learning management and academic governance, not as a huge spike, but it is enough to show that digital platforms are starting to have a real impact in supporting the learning process at MAN Kota Batu. Strengthening digital literacy at MAN Kota Batu does not stand apart from madrasah policies, but grows through digital learning practices that continue to be developed.

3.3 Impacts and Challenges of Utilizing Digital Platforms in Learning

The results of the study show that the use of digital platforms at MAN Kota Batu has a positive impact on the learning process and education management. On the learning side, digital platforms help expand access to materials, facilitate assignment distribution, and support more flexible learning interactions. On the institutional side, the use of *Makoba Edu* strengthens the efficiency of school administration through an attendance system, data management, and cloud-based storage.

The most dominant impact of the use of digital platforms at MAN Kota Batu can be seen in the increase in the ease of access to materials, assignment collection, and order of learning administration, so that the learning process becomes more organized than before. However, this impact has not been felt evenly, because the use of digital platforms tends to be more optimal for teachers who are used to using digital learning media, including in subjects that more often utilize the distribution of materials, assignments, and platform-based evaluations, while for some teachers and other students, the use is still at the basic level. In the madrasah environment, there is also still a gap in the form of differences in digital literacy skills, the intensity of platform use, and the readiness of device and network access, so that digital learning at MAN Kota Batu shows positive developments. Still, it needs to be strengthened so that the benefits can be felt more evenly by all learning residents. However, in general, the use of digital platforms contributes to the improvement of the digital skills of students and teachers, especially in technical, collaborative, and creative aspects (Diniyati et al., 2024). Thus, the benefits that arise are not only at the level of technical convenience but also in strengthening the quality of the learning experience and madrasah governance.

Although generally positive, the use of digital platforms presents a number of challenges that need to be seriously considered. Among them are inequality of access to technology, potential dependence on digital devices, declining social interaction between students, and data security issues. This challenge shows that the use of technology in learning always has consequences that are not simple. If not managed properly, digital platforms that were originally intended to support learning can actually cause new problems that affect the quality of learning interactions and the formation of students' character (Nasrullah, Prayogi, et al., 2024).

The successful implementation of digital platforms is highly dependent on the readiness of infrastructure and human resources. Availability of digital classrooms, computer labs, *Wi-Fi*, and other support devices provides a strong foundation for technology-based learning. However, the success of using digital platforms is not enough to support facilities alone. Teacher training, student readiness, and sustainable internal policies are needed so that the use of technology does not stop at the technical use stage. This shows that the digitalization of learning is essentially an institutional process that.

requires continuous planning, consistency, and evaluation (Nasrullah, Laksono, et al., 2024).

The use of digital platforms at MAN Kota Batu is in a productive position but has not been free from structural challenges. On the one hand, madrasas have shown a fairly strong adaptive capacity in building a digital learning ecosystem. On the other hand, challenges such as inequality of access, risk of dependence, and changes in social interaction patterns remind us that the digitalization of education should not be read too optimistically. Education still requires a balance between technological efficiency and fostering humane learning relationships (Prayogi et al., 2025). Thus, the use of digital platforms will be meaningful if supported by strong digital literacy, adequate infrastructure, and school policies that are able to manage the risks of using technology consciously.

The use of digital platforms at MAN Kota Batu not only illustrates the process of technological adaptation but also shows changes in the way madrasas view learning. Technology is no longer just used to replace certain functions in the classroom. However, it has become part of an institutional strategy to build learning that is more adaptive and responsive to the times. This is important in the context of Islamic education because madrasas are required to remain relevant without losing their educational orientation. In other words, digitalization in madrasas is not just about modernizing devices, but about how technology is used to support the quality of learning and student development (Prasetya, 2025).

The use of digital platforms in madrasas needs to be read in the interrelated relationship between the media, users, and institutional policies. A good platform will not produce meaningful learning if it is not supported by adequate digital literacy, while the digital skills of teachers and students will also not develop optimally without a madrasah ecosystem that supports the process. In the context of MAN Batu City, the novelty of this research lies in the finding that the use of *Makoba Edu* does not stand alone as a technical medium, but is integrated with a learning management system, digital classrooms, smart TV, and institutional policy support that forms a more structured digital learning ecosystem. Thus, the digital transformation in this madrasah not only shows the use of learning media but also shows how digital platforms, digital literacy, and institutional governance work in an integrated manner in shaping a more adaptive learning process. From the perspective of Islamic education, the direction of development is in line with the values of responsibility, discipline, manners in the use of media, and the use of technology in a beneficial manner, so that learning based on digital platforms at MAN Kota Batu not only strengthens the effectiveness of learning but also remains based on the formation of students' character.

4. CONCLUSION

This research shows that the use of digital platforms at MAN Kota Batu has evolved from the use of learning aids to part of institutional strategies in building a digital madrasah ecosystem. The presence of *Makoba Edu*, which is supported by digital classrooms, *learning management systems*, computer laboratories, school Wi-Fi, and *smart TVs*, shows that digitalization in madrasas not only touches the learning process in the classroom but also strengthens administrative governance and learning management in a more integrated manner. In this context, digital platforms function not only as technical instruments but as pedagogical spaces that allow learning to be more flexible, participatory, and adaptive to the needs of students. This means that in Islamic education, the use of technology will be valuable if it is directed to support the quality of learning while maintaining an educational orientation that fosters responsibility, skills, and a learning culture that is relevant to the times.

On the other hand, this study also shows that the quality of digital literacy, infrastructure readiness, and the sustainability of madrasah policies highly determine the effectiveness of digital platforms. Digital platforms do open up opportunities for the growth of learning skills, creativity, and collaboration. However, these benefits do not come automatically without the support of user competencies and adequate governance. From this, it can be understood that the digitalization of learning is not just a matter of presenting applications, but an institutional process that demands integration between the media, users, and school policies. Therefore, this article emphasizes that digital platform-based learning in madrasas needs to be built on strengthening goal-conscious digital literacy, so that technological transformation not only produces efficiency but also gives birth to a more meaningful, critical, and responsible learning experience.

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