



Visionary Leadership and Digital Transformation: Driving the Sustainability of Islamic Primary Education

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ABSTRACT

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This study aims to analyze visionary leadership in enhancing madrasah sustainability in the digital era. The research employed a qualitative case study approach, utilizing interviews, observations, and documentation as data collection techniques. Data were analyzed through a cyclical process consisting of data reduction, data display, and conclusion drawing. The findings reveal that Madrasah Ibtidaiyah Sunan Ampel has successfully developed an educational vision aligned with advancements in digital technology and has actively improved teachers' digital competencies through continuous professional development programs. The empowerment of digital educational resources has also been carried out through the provision of hardware, as well as access to online learning applications and platforms. Furthermore, the integration of technology into the learning process has enhanced both interactivity and flexibility. However, challenges remain regarding the availability of comprehensive digital learning materials, particularly for Islamic Religious Education subjects. This study contributes to the growing body of literature on technology integration in Islamic education and provides insights for educational leaders and policymakers on leveraging technology more effectively to improve learning quality in the digital era.

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INTRODUCTION

In the current digital era, the education sector faces significant challenges in adapting technology to improve the quality of learning (Najiburrahman et al., 2025; Nan & Agarwal, 2024). Many educational institutions, including madrasahs, still struggle to utilize technology optimally in the teaching and learning process (Ali et al., 2024; Haddade et al., 2024). This is caused by several factors, such as limited infrastructure, low levels of digital literacy among educators, and resistance to change. However, with visionary leadership, madrasahs can address these challenges by utilizing technology to create

learning environments that are more effective and relevant to contemporary needs (Alfaruqi & Fahmi, 2025; Hidayati et al., 2025; Rohmad et al., 2024). For example, several madrasahs that have integrated technology into the learning process have demonstrated significant improvements in the interactivity and flexibility of instruction. Therefore, leadership that possesses a forward-looking vision and is capable of directing the appropriate use of technology can be a key factor in improving the quality and sustainability of madrasah education in this digital era (Shoofiya & Yamin, 2024).

Society faces challenges in creating education that is not only relevant but also of high quality. One significant issue is how madrasahs, as faith-based educational institutions, can maintain their quality amid rapid technological advancement. The quality of education in madrasahs is still constrained by limitations in the utilization of technology, restricted access to digital resources (Kunta & Muslim, 2025), and the limited capacity of madrasah leaders to implement visionary leadership that supports educational development (Rachman et al., 2023). On the other hand, changes occurring within society also influence students' mindsets and learning interests, making it important for madrasah leaders to direct and navigate these changes in order to create a dynamic and sustainable educational environment.

Phenomena observed in the field indicate that many madrasahs, including Madrasah Ibtidaiyah Sunan Ampel Kertosuko in Probolinggo, still face difficulties in implementing technology in the learning process. Although efforts have been made to utilize information technology, digital applications in madrasahs are often limited to the use of basic software and remain minimal in the implementation of comprehensive digital-based learning. This condition indicates a gap between contemporary demands and the readiness of madrasahs to meet those needs. In this context, visionary leadership becomes a key factor in ensuring educational transformation that is relevant to technological developments and in guaranteeing better educational quality for students.

Research on visionary leadership in the education sector has been conducted by numerous scholars; however, most studies focus on general schools. For instance, studies conducted by Candrasari et al. (2023) and Hidayah (2025) demonstrate that visionary leadership can enhance educational quality by creating systematic change within organizations. Nevertheless, the lack of studies specifically addressing the implementation of visionary leadership in madrasahs, particularly within the Indonesian context, increases the urgency of this research. In the context of madrasahs, previous studies, such as those conducted by Efendi & Sholeh (2023) and Muttaqien et al. (2024), have focused more on improving educational quality from curriculum and management

perspectives, while giving limited attention to how visionary leadership may influence student learning outcomes, especially through the increasingly important integration of technology.

This study seeks to fill this gap by examining more deeply the implementation of visionary leadership in enhancing educational sustainability at Madrasah Ibtidaiyah Sunan Ampel Kertosuko. The primary contribution of this research is to identify and analyze the role of madrasah leaders in utilizing technology to improve the quality and sustainability of education. This study will provide a new perspective on educational leadership in madrasahs, focusing on aspects of digitalization and the social changes occurring within society.

The novelty of this study lies in its approach that combines visionary leadership with technology integration in madrasahs. In the digital era, this novelty is highly important because it provides insights into how madrasah leaders can bring about significant changes in the educational system through the optimal utilization of technology. This approach has not been widely discussed in existing studies, particularly in Islamic primary schools (madrasah ibtidaiyah), which possess unique characteristics as Islamic educational institutions. Therefore, this study is highly relevant for further exploring the role of leadership in implementing technology within the teaching and learning process.

This study focuses on the primary issue of how visionary leadership can enhance educational sustainability at Madrasah Ibtidaiyah Sunan Ampel Kertosuko in facing the digital era. Through a systematic approach, this research aims to identify the factors influencing the success of madrasah leaders in introducing innovative changes in learning, particularly those related to technology. The preliminary argument proposed is that leaders who possess a clear vision and are capable of integrating technology into the educational curriculum can bring significant changes in improving the quality of education in madrasahs. This study will contribute to the development of educational leadership concepts that are more relevant to contemporary needs, particularly in creating madrasahs that are adaptive to the development of digital technology.

RESEARCH METHODS

This study employed a qualitative research design using a case study approach (Cole, 2024; Danford, 2023). The selection of this design was based on the objective of gaining an in-depth and comprehensive understanding of the phenomenon occurring in the field, particularly regarding the implementation of visionary leadership in enhancing educational sustainability at Madrasah Ibtidaiyah Sunan Ampel Kertosuko, Probolinggo. The case study approach was chosen because this research focuses on specific conditions within a single

setting, where the context and dynamics of leadership as well as the implementation of technology in the madrasah can be analyzed in detail. This case study also enables researchers to explore various factors influencing the success of leadership in improving educational sustainability, as well as the challenges encountered in integrating technology within the institution.

This research was conducted at Madrasah Ibtidaiyah Sunan Ampel Kertosuko, Probolinggo. The selection of this site was based on several important considerations. First, the madrasah has a relatively good reputation within its region and is actively engaged in efforts to improve educational quality. Second, the madrasah has begun implementing several forms of technology in the teaching and learning process, although it still faces challenges in utilizing technology optimally. Third, the willingness of the madrasah administration to welcome researchers and participate in this study made this site an ideal location for conducting research related to visionary leadership and innovation in education in the digital era.

The data collection techniques used in this study consisted of in-depth interviews, participant observation, and documentation (Hurst, 2023; Uwamusi & Ajisebiyawo, 2023). In-depth interviews were conducted with the head of the madrasah, teachers, and other staff members to obtain information regarding their understanding of visionary leadership and how it is implemented in educational practice. Participant observation was carried out by directly observing classroom teaching and learning activities as well as the use of existing technologies. Documentation was also collected through madrasah records, such as annual reports, strategic plans, and curriculum materials that reflect the institution's efforts to enhance educational sustainability through technology.

The data analysis process began with data reduction, namely the selection and classification of information obtained from interviews, observations, and documentation. Relevant data were categorized to facilitate further analysis. Subsequently, the reduced data were presented in the form of narratives describing the phenomenon in a systematic and structured manner. This data display assisted the researchers in identifying emerging patterns related to visionary leadership and the use of technology in madrasah education. In the final stage, conclusions were drawn by summarizing the results of the data analysis to answer the research questions and provide an in-depth understanding of the role of leadership in enhancing educational sustainability at Madrasah Ibtidaiyah Sunan Ampel.

RESULTS AND DISCUSSION

Results

The findings of this study indicate that Madrasah Ibtidaiyah Sunan Ampel has successfully developed an educational vision that is relevant to the digital era, with a focus on integrating technology into the learning process. The madrasah actively enhances teachers' digital skills through continuous training programs that enable them to utilize various digital platforms and applications in teaching. In addition, the empowerment of digital educational resources has been carried out by providing hardware and online learning platforms that support instruction, although challenges remain regarding the availability of more diverse digital learning materials, particularly for Islamic Religious Education subjects. The use of technology in learning has been proven to increase interactivity, flexibility, and learning effectiveness, although obstacles related to technology accessibility in some students' residential areas remain a challenge. Overall, this study demonstrates that despite existing challenges, the implementation of technology in madrasah education can significantly improve educational quality when supported by visionary leadership and appropriate strategies.

Development of an Educational Vision Relevant to the Digital Era

The development of an educational vision relevant to the digital era at Madrasah Ibtidaiyah Sunan Ampel refers to the institution's efforts to design and implement educational goals that are aligned with developments in information and communication technology (ICT) within the educational sector. This includes adjustments to the curriculum, learning methods, and supporting facilities to enable students to access and utilize digital resources in the learning process. In the context of the madrasah, the development of this vision also considers the balance between the use of technology and the Islamic values taught within the school.

The Head of Madrasah Ibtidaiyah Sunan Ampel stated that, "The development of an educational vision relevant to the digital era in our madrasah began with the introduction of technology into learning, such as the use of educational applications and online-based learning. However, we also ensure that the use of technology does not disregard the religious principles that form the foundation of education here." From this interview, the researcher interpreted that although Madrasah Ibtidaiyah Sunan Ampel focuses on technology, it continues to emphasize the importance of religious values in every learning activity.

One teacher at the madrasah stated, "We continuously strive to ensure that students are not only proficient in technology but also possess a good understanding of how technology can be used wisely in accordance with Islamic teachings." The researcher interpreted that although there is a strong drive to

utilize technology in learning, there is also a high level of awareness that the teaching of moral and religious values must remain a priority in order to maintain balance.

Through direct observation of learning activities at Madrasah Ibtidaiyah Sunan Ampel, the researcher found that classrooms had been equipped with various digital devices, such as laptops and projectors, which were used to enrich learning materials. Students were also provided access to online learning platforms to deepen their understanding beyond school hours. However, despite the effective use of technology, several challenges were identified, including limited internet access in some students' residential areas. The researcher interpreted that although the madrasah has successfully adopted technology, accessibility issues still need to be addressed to ensure that this digital educational vision can be implemented equitably across all areas.

Based on data obtained through interviews and observations, it can be understood that Madrasah Ibtidaiyah Sunan Ampel has successfully developed an educational vision relevant to the digital era by introducing technology into learning and utilizing various digital platforms. Nevertheless, serious attention continues to be given to the teaching of religious values in accordance with Islamic principles. This reflects the madrasah's efforts to create an educational system that not only prioritizes digital competencies but also develops students' character based on religious values.

The data obtained indicate a pattern showing that Madrasah Ibtidaiyah Sunan Ampel focuses on integrating technology into learning without neglecting religious values. This is reflected in policies that utilize technology as a teaching aid and introduce students to digital applications that can enhance their learning experiences. At the same time, the school maintains balance by continuously instilling moral and spiritual values so that students are not only digitally competent but also possess a deep understanding of proper behavior and ethics in accordance with Islamic teachings.

Although the use of technology in learning at Madrasah Ibtidaiyah Sunan Ampel has been implemented effectively, a major challenge remains in relation to technology accessibility. Educational applications and online learning platforms have been introduced to improve learning quality; however, internet access challenges in certain areas hinder some students from participating fully. This indicates that while technology generally provides benefits, special attention is required to ensure equal access for all students so that technology can be utilized optimally in learning.

Use of Technology in Learning

The use of technology in learning at Madrasah Ibtidaiyah Sunan Ampel refers to the application of various technological devices and digital platforms in the learning process to enhance interactivity, effectiveness, and flexibility in teaching. This includes the utilization of hardware such as computers, laptops,

and projectors, as well as the use of online learning applications and learning management systems such as Google Classroom. This technology is not only used as a tool for delivering learning materials but also as a means of developing students' digital skills and expanding their access to various learning resources that are more interactive and relevant to contemporary needs.

Table 1. Use of Technology in Learning

Interview Excerpt	Indicator	Informant
"We use Google Classroom and other applications to provide assignments and learning materials, especially during online learning."	Use of online learning platforms	Head of Madrasah
"Applications such as Quizizz and Kahoot greatly help make learning more enjoyable and interactive."	Use of interactive educational applications	Mathematics Teacher
"We experience difficulties when the internet connection is unstable, causing disruptions to the learning process."	Technology access constraints (internet)	Qur'an and Hadith Teacher
"The use of technology strongly supports learning, but we always ensure that it does not diminish the religious values being taught."	Integration of technology with religious values	Fiqh Teacher

Table 1 shows that Madrasah Ibtidaiyah Sunan Ampel has successfully integrated technology into the learning process. The Head of the Madrasah explained the use of online learning platforms such as Google Classroom as a primary medium for delivering materials and assignments to students, particularly during distance learning. This demonstrates that the madrasah utilizes technology to ensure the continuity of learning even under limited circumstances, such as during the pandemic.

The statement from one teacher also emphasized the use of educational applications such as Quizizz and Kahoot to make learning more interactive and enjoyable. This indicates that technology is not only used for administrative efficiency but also to increase students' active engagement in the learning process. The use of these applications illustrates how technology can be utilized to enhance students' motivation and creativity in absorbing learning materials.

However, challenges in the use of technology were also identified, as stated by Mr. Joni. The primary obstacle found was unstable internet network accessibility, which hindered students from participating effectively in online learning. This indicates that although technology has been integrated into the learning process, infrastructure and accessibility issues remain challenges that need to be addressed.

The researcher observed that Madrasah Ibtidaiyah Sunan Ampel routinely uses digital devices in learning activities. The use of projectors for presenting learning materials and computers for accessing online platforms was consistently observed across various subjects. However, despite the relatively widespread use of technology, the researcher also noted that some students experienced difficulties accessing online materials due to limited internet connectivity at home. This instability in internet connections affected students' participation in several online learning sessions, which could reduce learning effectiveness.

On the other hand, the researcher also observed that teachers at the madrasah demonstrated strong enthusiasm for utilizing interactive learning applications to make the learning process more engaging and enjoyable. This was evidenced by the use of applications such as Quizizz, which helped students practice exercises in a more enjoyable way and enhanced their understanding through educational games.

Based on data obtained through interviews and observations, it can be concluded that the use of technology in learning at Madrasah Ibtidaiyah Sunan Ampel has been implemented effectively, although several challenges remain. The use of online learning platforms and interactive educational applications has improved learning effectiveness, particularly in creating a more engaging and flexible learning experience. Nevertheless, unstable internet access remains a major obstacle to the optimal implementation of online learning, indicating the need for improvements in infrastructure and technology accessibility for students.

The data indicate that Madrasah Ibtidaiyah Sunan Ampel has successfully integrated technology into learning, focusing on the use of online platforms and interactive educational applications to increase student motivation and engagement. However, infrastructure issues, such as limited internet access, continue to pose challenges that require attention. Overall, although technology has been used effectively, there remains a need to improve technological access and infrastructure to ensure that all students can access learning materials and participate optimally in online learning.

Enhancement of Teachers' Digital Skills

The enhancement of teachers' digital skills at Madrasah Ibtidaiyah Sunan Ampel refers to efforts aimed at developing teachers' abilities to operate information and communication technology (ICT) in the learning process. This includes mastery of learning applications, digital platforms, and other supporting tools that can be used in instruction. The enhancement of digital skills is not limited to mastery of hardware and software but also encompasses pedagogical aspects related to the use of technology to improve teaching quality

and interaction with students. The objective of improving digital skills is to enable teachers to utilize technology optimally in creating learning experiences that are more effective and relevant to contemporary developments.

The Head of the Madrasah stated, “We realize that technological mastery is very important, especially for teachers, so that they can integrate technology into learning. Therefore, we regularly conduct training programs to improve teachers’ digital skills, including the introduction of online learning platforms and educational applications.” From this interview, the researcher interpreted that the madrasah is committed to continuously improving teachers’ digital skills through ongoing training programs, with the objective of ensuring that teachers not only master technology but are also able to integrate it into their teaching methods.

One teacher stated, “I feel that the technology training we have attended has been very helpful in teaching students. Since participating in the training, I have been able to use Google Classroom and other applications to provide assignments and materials digitally, making the learning process more interactive.” The researcher interpreted that the training provided to teachers has successfully improved their digital skills, enabling them to adapt to and utilize technology in teaching while providing students with a more interactive learning experience.

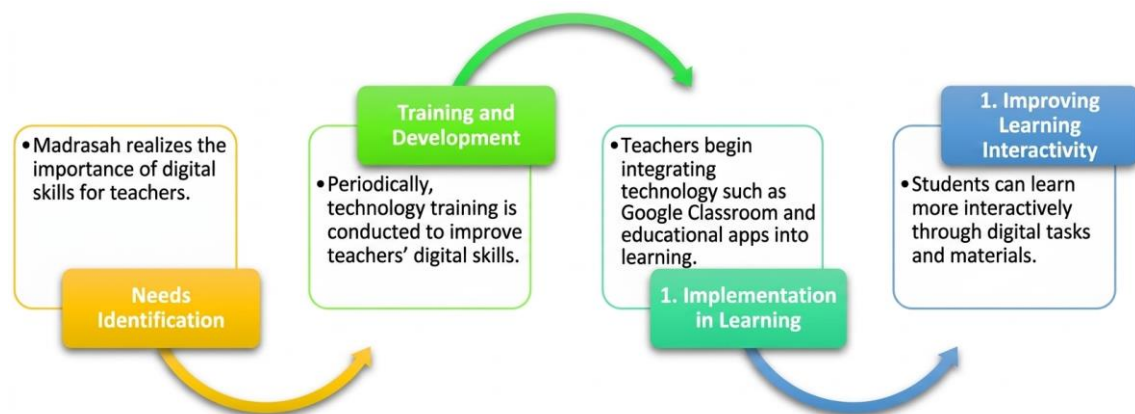


Figure 1. Enhancement of Teachers’ Digital Skills

Figure 1 shows that Madrasah Ibtidaiyah Sunan Ampel adopts a systematic approach to improving teachers’ digital skills, beginning with awareness of the importance of technology, followed by relevant training, and ultimately the application of technology in the learning process. This demonstrates a continuous effort to prepare teachers to adapt to the demands of the digital era.

Learning activities at Madrasah Ibtidaiyah Sunan Ampel have begun to integrate technology more effectively. Teachers were observed using Google Classroom to provide learning materials, assignments, and assessments to students. In addition, educational applications such as Khan Academy and Quizizz were utilized in several subjects. The researcher observed that although teachers' digital skills have improved, some teachers still appeared hesitant when using certain applications or maximizing available features. This suggests that despite the implementation of training programs, challenges remain in achieving the full integration of technology into teaching.

Based on data obtained through interviews and observations, the researcher concluded that the enhancement of teachers' digital skills at Madrasah Ibtidaiyah Sunan Ampel has yielded positive results, particularly in the use of online learning platforms and educational applications. Although the training programs have been fairly effective, some teachers still require additional time and support to fully master the available technological tools. This indicates that while progress has been achieved, the optimal implementation of technology remains an ongoing process.

The enhancement of teachers' digital skills at Madrasah Ibtidaiyah Sunan Ampel has had a positive impact on the learning process. Regular training programs have improved teachers' abilities to use technology, such as learning applications and online platforms. However, one challenge that has emerged is the variation in teachers' levels of comfort with technology, which requires further support. Overall, despite significant progress, continuous efforts are still needed to ensure that all teachers can fully utilize the potential of technology in learning.

Empowerment of Digital Educational Resources

The empowerment of digital educational resources at Madrasah Ibtidaiyah Sunan Ampel refers to the madrasah's efforts to optimize available technological resources to support the learning process. This includes the use of hardware such as computers and projectors, as well as the utilization of relevant software and educational applications. In addition, this empowerment involves the management and distribution of digital learning materials that are easily accessible to both students and teachers, as well as the development of adequate digital infrastructure. The objective of empowering digital resources is to improve learning quality, enrich students' learning experiences, and address the challenges of the digital era in education.

The Head of the Madrasah stated, "We strive not only to provide technological devices but also to manage digital resources effectively. We have a learning platform that we use to distribute instructional materials, and we also

encourage students to access various e-books and learning videos to enhance their understanding.” From this interview, the researcher interpreted that Madrasah Ibtidaiyah Sunan Ampel is committed to managing digital resources efficiently, not only through the provision of devices but also by integrating digital materials that can enrich students’ learning experiences.

One homeroom teacher stated, “We utilize various digital resources, such as learning videos and educational applications, to help students understand difficult mathematical concepts. In addition, we also access online journals to enrich our teaching materials.” The researcher interpreted that teachers at Madrasah Ibtidaiyah Sunan Ampel actively utilize a variety of digital resources to improve the quality of their instruction. This demonstrates that the empowerment of digital resources is not limited to providing devices but also includes efforts to access and integrate various digital learning resources that support the teaching and learning process.

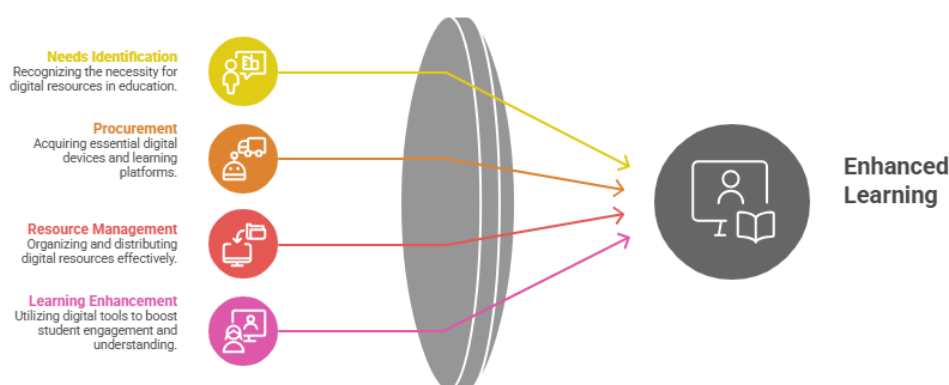


Figure 2. Digital Integration in the Madrasah

Figure 2 shows that the empowerment of digital resources at Madrasah Ibtidaiyah Sunan Ampel is carried out systematically and continuously, from the provision of devices and platforms to the utilization of digital materials to support learning quality. The madrasah seeks to ensure that every element within the educational ecosystem has adequate access to digital resources in order to enrich the learning experience.

The researcher observed that Madrasah Ibtidaiyah Sunan Ampel has provided various digital devices in classrooms, including computers and projectors, which are used to deliver instructional materials interactively. Students are also given access to various learning applications and e-books to deepen their understanding. However, the researcher also noted challenges regarding the availability of more diverse digital materials, particularly for Islamic Religious Education subjects. Several teachers were observed seeking additional resources from outside the madrasah to complement their

instructional materials. The researcher interpreted that although the empowerment of digital resources in the madrasah has been effective, more organized and diverse material management would further enhance learning effectiveness.

Based on data obtained through interviews and observations, the researcher concluded that Madrasah Ibtidaiyah Sunan Ampel has effectively empowered digital resources, particularly in terms of providing hardware and access to digital learning platforms. Resources such as e-books, educational applications, and learning videos have been utilized effectively by both teachers and students. However, the primary challenge that still requires attention is the availability of more diverse and comprehensive digital learning materials, especially those supporting Islamic Religious Education subjects.

The empowerment of digital educational resources at Madrasah Ibtidaiyah Sunan Ampel has successfully improved learning quality by providing broader access to digital resources for both students and teachers. Nevertheless, gaps remain in the availability of diverse digital learning materials for certain subjects, indicating the need for further development in the management and distribution of digital educational resources. Overall, although digital empowerment has been implemented effectively, there remains room for improvement regarding the availability of materials that are more aligned with existing curriculum needs.

Discussion

In discussing the findings related to the empowerment of digital educational resources at Madrasah Ibtidaiyah Sunan Ampel, a comparison can be made between the findings of this study and the existing literature. Based on the field findings, Madrasah Ibtidaiyah Sunan Ampel has effectively empowered digital educational resources, particularly through the provision of hardware such as computers and projectors, as well as access to online learning platforms and educational applications. This finding is consistent with the studies conducted by Alshammary and Alhalafawy (2023) and Rafiq et al. (2024), which state that the use of technology in education, particularly through digital platforms and educational applications, has been proven to enhance learning effectiveness. However, a difference exists in the literature, which emphasizes the importance of student involvement in selecting digital resources, whereas in this madrasah, digital resources are primarily provided by the institution and do not fully involve students in the selection and management of learning materials.

One of the main similarities between the findings of this study and the existing literature is the importance of organized digital resource management. The findings indicate that Madrasah Ibtidaiyah Sunan Ampel has provided

various digital devices to support the learning process, such as projectors and computers used to deliver instructional materials interactively. This is in line with the views of Adeshina (2024) and Mhlongo et al. (2023), who emphasize that effective management of digital devices and resources enables more interactive and efficient learning. By utilizing well-organized digital resources, students can more easily access learning materials and actively participate in learning activities. Furthermore, the availability of various applications and online platforms allows greater flexibility in learning, consistent with the arguments proposed by Chen (2024) and Erstad and Silseth (2023), who suggest that technology can extend the boundaries of space and time in education.

However, although Madrasah Ibtidaiyah Sunan Ampel has optimized the use of technology in learning, the findings also reveal challenges related to the availability of diverse digital learning materials. Several teachers at the madrasah still feel the need to seek external resources to complement their teaching materials, particularly in Islamic Religious Education subjects. This finding is not entirely consistent with some literature suggesting that the empowerment of digital resources should include the provision of comprehensive and diverse learning materials covering various subjects, including religious education (Hasanbasri & Nurhayuni, 2023; Hasmiza, 2025). This limitation in material availability indicates the need to develop instructional resources that are more specific and relevant to the context of Islamic education in madrasahs.

The theoretical implication of these findings is that although the use of technology can improve learning effectiveness, it cannot be separated from the challenges of providing and managing digital learning materials that align with curriculum requirements. In technology-based education theory, as explained by Hariyasasti (2025), it is important to create an adaptive learning environment rich in digital resources that does not merely rely on technology as a supporting tool but also as a source of information and knowledge accessible to all stakeholders. Therefore, these findings reinforce the need for greater attention to the development and provision of relevant and comprehensive digital learning materials capable of meeting diverse learning needs, particularly within the context of Islamic Religious Education.

From a practical perspective, these findings provide important insights for madrasahs and other educational institutions regarding the management of digital resources for education. Practically, the results indicate that maximizing the empowerment of technology in learning requires continuous investment in the provision of devices, learning platforms, and training programs for both teachers and students. Madrasahs need to continuously develop teachers' digital competencies so that they can utilize technology more effectively in the learning process. In addition, it is important to address issues of technological accessibility

for all students by ensuring that digital learning materials can be accessed easily without being hindered by technical problems such as unstable internet connections.

Another practical implication that can be drawn from these findings is the need for greater support in the provision of digital instructional materials, particularly for religious education subjects. For example, madrasahs may collaborate with educational content developers to create digital learning materials specifically designed to align with the Islamic education curriculum. Teacher empowerment is also a crucial factor in the effective implementation of technology. Teachers should be involved in the selection, management, and development of digital materials that meet students' learning needs. Through these measures, the empowerment of digital resources in madrasahs can be optimized and better aligned with the demands of learning in the digital era.

CONCLUSION

The most significant finding of this study is that Madrasah Ibtidaiyah Sunan Ampel has successfully optimized the use of digital resources in learning by providing hardware and access to various digital educational platforms and applications. Nevertheless, the greatest challenge that remains is the limited availability of specific and comprehensive digital learning materials, particularly for Islamic Religious Education subjects. An important lesson derived from this study is that the empowerment of digital resources in madrasahs depends not only on the provision of technological devices but also on systematic and sustainable management, the development of relevant instructional materials, and the enhancement of teachers' digital competencies. The strength of this study lies in its ability to explore and analyze digital resource empowerment practices at the madrasah level, as well as its contribution to enriching the literature on technology integration in religious education. This study provides valuable insights for educators and Islamic education administrators in optimizing technology to support more effective learning.

This study has several limitations. First, it was conducted in a single madrasah, which may not fully represent the conditions of other madrasahs in different regions or contexts. Second, the long-term impact of technology use on student learning outcomes was not examined in depth. Therefore, future research may expand its scope to include a larger number of madrasahs and explore the effects of technology use on students' cognitive, social, and character development. Further studies are also needed to investigate innovative approaches to developing more comprehensive digital instructional materials that are based on local needs and relevant to religious education subjects, thereby supporting deeper and more holistic learning experiences.

REFERENCES

- Adeshina, A. E. (2024). The Transformative Role of Digital Resources in Teaching and Learning. *Open Journal of Educational Development*, 5(1), 1–9. <https://doi.org/10.52417/ojed.v5i1.520>
- Alfaruqi, A. F., & Fahmi, N. N. (2025). Transformation of Visionary and Collaborative Leadership Styles in Contributing Publication Innovation of Madrasah Aliyah. *JMKSP (Jurnal Manajemen, Kepemimpinan, dan Supervisi Pendidikan)*, 10(1), 166–187. <https://doi.org/10.31851/jmksp.v10i1.17724>
- Ali, M., Aini, M. A., & Alam, S. N. (2024). Integrating Technology in Learning in Madrasahs: Towards the Digital Age. *Indonesian Journal of Education (INJOE)*, 3(2), 290–304.
- Alshammary, F. M., & Alhalafawy, W. S. (2023). Digital Platforms and the Improvement of Learning Outcomes: Evidence Extracted from Meta-Analysis. *Sustainability*, 15(2), Article 1305. <https://doi.org/10.3390/su15021305>
- Candrasari, R., Mayasari, N., Yulia, R., & Lake, F. (2023). Visionary Leadership in Education Management: Leading Toward Optimal Achievement in the Era of Independent Learning. *Indonesian Journal of Education (INJOE)*, 2(3), 451–467.
- Chen, Z. (2024). Exploring the Application Scenarios and Issues Facing Metaverse Technology in Education. *Interactive Learning Environments*, 32(5), 1975–1987.
- Cole, R. (2024). Inter-Rater Reliability Methods in Qualitative Case Study Research. *Sociological Methods & Research*, 53(4), 1944–1975. <https://doi.org/10.1177/00491241231156971>
- Danford, C. A. (2023). Understanding the Evidence: Qualitative Research Designs. *Urologic Nursing*, 43(1). <https://doi.org/10.7257/2168-4626.2023.43.1.41>
- Efendi, N., & Sholeh, M. I. (2023). Educational Management in Improving Learning Quality. *Academicus: Journal of Teaching and Learning*, 2(2), 68–85. <https://doi.org/10.59373/academicus.v2i2.25>
- Erstad, O., & Silseth, K. (2023). Rethinking the Boundaries of Learning in a Digital Age. *Learning, Media and Technology*, 48(4), 557–565. <https://doi.org/10.1080/17439884.2023.2260977>
- Haddade, H., Nur, A., Achruh, A., Rasyid, M. N. A., & Ibrahim, A. (2024). Madrasah Management Strategies Through Madrasah Reform Program: An Evidence from Indonesia. *International Journal of Educational Management*, 38(5), 1289–1304. <https://doi.org/10.1108/IJEM-05-2023-0236>

- Hariyasasti, Y. (2025). Technology Literacy and the Utilization of Digital Tools in Elementary Schools. *International Journal of Social, Policy and Law*, 6(3), 13–29.
- Hasanbasri, H., & Nurhayuni, N. (2023). Technological Resources for Curriculum Implementation in the Digital Era. *AL-MIKRAJ Jurnal Studi Islam dan Humaniora*, 4(1), 874–888. <https://doi.org/10.37680/almikraj.v4i1.4181>
- Hasmiza, H. (2025). Islamic Education Curriculum Models in the Digital Era: Optimizing Technology for Innovative Learning. *Research and Development Journal of Education*, 11(1), 164–177. <https://doi.org/10.30998/rdje.v11i1.28068>
- Hidayah, N. (2025). Visionary Leadership and Its Impact on the Quality of Education in Islamic Educational Institutions. *Al-Hayat: Journal of Islamic Education*, 9(1), 142–158. <https://doi.org/10.35723/ajie.v9i1.48>
- Hidayati, N., Muis, A., & Ubaidillah, U. (2025). Visionary Leadership in Education: Strategies for Achieving International Standard. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, 9(2), 386–398. <https://doi.org/10.33650/al-tanzim.v9i2.9782>
- Hurst, A. (2023). Participant Observation. In *Introduction to Qualitative Research Methods*.
- Kunta, I. H., & Muslim, B. (2025). Digitalization in Educational Quality Management: The Application of Technology to Support School Accreditation Processes. *Jurnal Ilmiah Mahasiswa*, 1(5), 647–657.
- Mhlongo, S., Mbatha, K., Ramatsetse, B., & Dlamini, R. (2023). Challenges, Opportunities, and Prospects of Adopting and Using Smart Digital Technologies in Learning Environments: An Iterative Review. *Heliyon*, 9(6). <https://doi.org/10.1016/j.heliyon.2023.e16348>
- Muttaqien, M. I., Mustofa, L., Yumnansa, F. R., Malik, M. M., & Buzairi, M. (2024). The Role of Leadership in Building Educational Institution Renewal Models. *Jurnal Kolaboratif Sains*, 7(1), 491–497.
- Najiburrahman, Abas, M. C., & Jamila, A. (2025). Winning the Hearts of Generation Z: Personal and Digital Approaches in Educational Public Relations Management. *Al-Fahim: Jurnal Manajemen Pendidikan Islam*, 7(1), 184–194. <https://doi.org/10.54396/alfahim.v7i1.1918>
- Nan, L., & Agarwal, N. (2024). Integrating Traditional and Digital Methods: Blended Learning's Impact on Student Engagement and Physical Fitness in Physical Education. *Sciences of Conservation and Archaeology*, 36(4), 385–394.
- Rachman, E. A., Humaeroh, D., Sari, D. Y., & Mulyanto, A. (2023). Visionary Leadership in Character Education. *Jurnal Educatio FKIP UNMA*, 9(2), 1024–1033. <https://doi.org/10.31949/educatio.v9i2.5053>

- Rafiq, S., Iqbal, S., & Afzal, A. (2024). The Impact of Digital Tools and Online Learning Platforms on Higher Education Learning Outcomes. *Al-Mahdi Research Journal (MRJ)*, 5(4), 359–369.
- Rohmad, A., Muawanah, E., Ju'subaidi, Hidayah, N., & Ikhwan, A. (2024). The Role of Curriculum Implementation and Principal Leadership to Enhance Academic Performance in Islamic Boarding Schools. *Journal of Social Studies Education Research*, 15(4), 338–373.
- Shoofiya, G. Z., & Yamin, I. (2024). Management of Teaching Personnel in Improving the Quality of Education: A Case Study at Muhammadiyah 1 Besuki Integrated Elementary School. *Proceeding of International Conference on Education, Society and Humanity*, 2(1), 1428–1434.
- Uwamusi, C. B., & Ajisebiyawo, A. (2023). Participant Observation as Research Methodology: Assessing the Defects of Qualitative Observational Data as Research Tools. *Asian Journal of Social Science and Management Technology*, 5(3), 19–32.