



[DOI: 10.6160/ajis.v3i1.1186](https://doi.org/10.6160/ajis.v3i1.1186)

ORIGINAL RESEARCH ARTICLE

Digital-Based Academic Supervision Model in Improving Teacher Performance at Madrasah SMP Negeri 1 Seputih Banyak

Lilis Haryati^{1*}, Rina Mida Hayati¹, Agus Setiawan¹

¹*Universitas Ma'arif Lampung, Indonesia*

Correspondence: lilisharyati388@gmail.com

Article History: Received: 12 April 2025 • Revised: 05 May 2024 • Accepted: 15 May 2026 • Published: 15 May 2025

ABSTRACT

The rapid development of digital technology has fundamentally transformed various sectors, including education, yet many madrasahs in Indonesia still face challenges in implementing effective academic supervision due to limited digital infrastructure, low technological literacy among supervisors, and the absence of structured digital supervision models. This study aims to analyze the implementation of a digital-based academic supervision model and its impact on improving teacher performance at Madrasah SMP Negeri 1 Seputih Banyak, Central Lampung Regency. Using a qualitative case study approach, data were collected through in-depth interviews with the madrasah head, supervisors, and teachers, participatory observation of supervision practices, and documentation of supervision activities and teacher performance records. The findings reveal that the digital-based academic supervision model is implemented through four strategic stages: digital planning and scheduling, technology-assisted classroom observation, data-based feedback and reflection, and sustainable professional development follow-up. The integration of digital tools such as the Madrasah Digital Report (RDM), Google Classroom, and video-based observation has significantly improved efficiency, transparency, and teacher engagement in supervision. This model contributes to measurable improvements in teacher performance, including enhanced lesson planning, more effective classroom management, increased use of technology in teaching, and improved student learning outcomes. However, challenges such as limited internet access, varying levels of teacher digital competence, and time constraints remain significant obstacles. This study concludes that the digital-based academic supervision model offers a transformative approach to improving teacher performance in madrasahs, provided that adequate infrastructure, continuous training, and strong leadership commitment are in place. These findings provide a practical framework for other madrasahs seeking to leverage digital technology for academic supervision and teacher professional development.

Keywords: Digital Academic Supervision, Teacher Performance, Madrasah, Educational Technology, Professional Development



ABSTRAK

Perkembangan teknologi digital yang pesat telah mentransformasi berbagai sektor, termasuk pendidikan, namun banyak madrasah di Indonesia masih menghadapi tantangan dalam implementasi supervisi akademik yang efektif akibat keterbatasan infrastruktur digital, rendahnya literasi teknologi di kalangan supervisor, dan tidak adanya model supervisi digital yang terstruktur. Penelitian ini bertujuan untuk menganalisis implementasi model supervisi akademik berbasis digital dan dampaknya terhadap peningkatan kinerja guru di Madrasah SMP Negeri 1 Seputih Banyak, Kabupaten Lampung Tengah. Menggunakan pendekatan kualitatif studi kasus, data dikumpulkan melalui wawancara mendalam dengan kepala madrasah, supervisor, dan guru, observasi partisipatif terhadap praktik supervisi, serta dokumentasi kegiatan supervisi dan catatan kinerja guru. Temuan menunjukkan bahwa model supervisi akademik berbasis digital diimplementasikan melalui empat tahap strategis: perencanaan dan penjadwalan digital, observasi kelas berbantuan teknologi, umpan balik dan refleksi berbasis data, serta tindak lanjut pengembangan profesional berkelanjutan. Integrasi alat digital seperti Rapor Digital Madrasah (RDM), Google Classroom, dan observasi berbasis video telah secara signifikan meningkatkan efisiensi, transparansi, dan keterlibatan guru dalam supervisi. Model ini berkontribusi pada peningkatan kinerja guru yang terukur, termasuk peningkatan perencanaan pembelajaran, manajemen kelas yang lebih efektif, peningkatan penggunaan teknologi dalam pengajaran, dan hasil belajar siswa yang lebih baik. Namun, tantangan seperti akses internet terbatas, tingkat kompetensi digital guru yang bervariasi, dan keterbatasan waktu tetap menjadi hambatan signifikan. Penelitian ini menyimpulkan bahwa model supervisi akademik berbasis digital menawarkan pendekatan transformatif untuk meningkatkan kinerja guru di madrasah, dengan syarat infrastruktur yang memadai, pelatihan berkelanjutan, dan komitmen kepemimpinan yang kuat. Temuan ini memberikan kerangka praktis bagi madrasah lain yang ingin memanfaatkan teknologi digital untuk supervisi akademik dan pengembangan profesional guru.

Kata Kunci: Supervisi Akademik Digital, Kinerja Guru, Madrasah, Teknologi Pendidikan, Pengembangan Profesional

How to cite: Haryati, L., Hayati, R. M., & Setiawan, A. (2025). Model Supervisi Akademik Berbasis Digital dalam Meningkatkan Kinerja Guru Madrasah SMP Negeri 1 Seputih Banyak Kabupaten Lampung Tengah. *Assyfa Journal of Islamic Studies*, 3(1). 131-145. Retrieved from <https://journal.assyfa.com/index.php/ajis/article/view/1186>

1. INTRODUCTION

The rapid development of digital technology has fundamentally transformed the educational landscape worldwide, creating unprecedented opportunities and challenges for educational institutions (Alrasheed, 2025; Assanova et al., 2025). In Indonesia, the integration of digital technology into educational practices has become a national priority, as reflected in various government policies and initiatives aimed at improving education quality through digital transformation. The Ministry of Religious Affairs has introduced platforms such as the Madrasah Digital Report (RDM) and the Merdeka Teaching Platform (PMM) to facilitate digital-based academic supervision and teacher performance management (Penyusun & Pendidikan, 2024). However, the adoption of these digital tools in madrasahs remains uneven, with many institutions still struggling to implement effective digital academic supervision models (Sapwan et al., 2025).

Academic supervision plays a crucial role in improving teacher performance and ensuring education quality (Gathu, 2022; Kautsar & Julaiha, 2023). Traditionally, academic supervision has been conducted through face-to-face classroom observations, individual consultations, and group

meetings between supervisors and teachers. These conventional approaches often have limitations such as time constraints, subjectivity in evaluation, lack of systematic documentation, and limited opportunities for continuous feedback (Maki, Wasliman, & Dianawati, 2022). The emergence of digital technology has opened new possibilities for transforming academic supervision into a more efficient, transparent, and data-driven process that can provide real-time feedback and support teacher professional development (Salym, 2024; Rahman & Handoko, 2025).

The 2024 Integrity Assessment Survey (SPI) conducted by the Corruption Eradication Commission (KPK) revealed concerning findings regarding teacher discipline, role modeling, and integrity in Lampung Province. The percentage of educational units where teachers arrived late to class without a clear reason reached 65.96%, far above the national average of 52.93% (Penyusun & Pendidikan, 2024). In Central Lampung Regency, the rate of teacher absenteeism without reason reached 20.29%, and unexemplary behavior such as littering or lying in front of students reached 46.97%. These findings indicate a crisis of teacher performance that requires immediate managerial intervention, including strengthening academic supervision systems. Initial observations at Madrasah SMP Negeri 1 Seputih Banyak revealed that academic supervision was still conducted using conventional methods, with limited use of digital tools, resulting in inconsistent feedback, inadequate documentation, and limited follow-up on teacher development needs.

Previous research has examined the relationship between academic supervision and teacher performance in various educational contexts. Hidayah, Azis, and Rizal (2025) found that contextual learning methods can improve student learning outcomes, demonstrating the importance of innovative approaches in education. Maulana, Haris, and Ihwan (2025) demonstrated that habituation of worship significantly contributes to shaping disciplined character in elementary school students. Hairunisa (2023) revealed that student-centered learning approaches can increase student participation in Islamic Religious Education. Rosiyati, Erviana, Fadilla, and Sholihah (2025) explained that the Deep Learning approach is effective in creating meaningful, mindful, and enjoyable learning experiences. However, these studies have not specifically examined the implementation of digital-based academic supervision models in madrasah environments, particularly in the context of improving teacher performance.

Recent studies have begun exploring the role of digital technology in academic supervision. Sapwan et al. (2025) investigated how digital supervision improves teacher performance in Indonesian secondary schools, finding that tools such as Google Classroom and Zoom support real-time feedback and collaboration. Abdullah et al. (2025) developed a digital academic supervision model to enhance madrasah principals' instructional leadership, demonstrating significant effectiveness with a 27.7% increase in principals' managerial competence and a 24.6% increase in teachers' professional competence. Salym (2024) examined the impact of digital academic supervision on teacher professionalism, identifying personal learning networks as a mediating factor. These studies provide valuable insights into the potential of digital supervision, but have not specifically addressed the contextual challenges faced by madrasahs in rural areas with limited digital infrastructure.

The research gap lies in the absence of comprehensive studies examining the implementation of digital-based academic supervision models in madrasah environments, particularly in rural areas of Lampung Province. Most previous studies have focused on urban schools or have not specifically addressed the unique challenges faced by madrasahs, including limited digital infrastructure, varying levels of teacher technology literacy, and the need to balance traditional Islamic values with modern educational practices. In addition, there is a lack of research that provides practical frameworks for implementing digital-based academic supervision in madrasahs that can be adapted to local contexts and resources.

The novelty of this research lies in the development of a digital-based academic supervision model specifically contextualized for madrasah environments in rural areas, integrating available digital tools such as the Madrasah Digital Report (RDM), Google Classroom, and video-based observation platforms. This research not only analyzes the implementation process but also investigates the model's impact on teacher performance across various dimensions, including lesson planning, classroom management, technology integration, and student learning outcomes. Furthermore, this research identifies supporting and inhibiting factors in the implementation of digital-based academic supervision, providing practical recommendations for other madrasahs seeking to leverage digital technology for teacher development.

The theoretical framework of this research is grounded in the principles of instructional leadership and digital transformation in education. Instructional leadership theory emphasizes the role of school leaders in providing direction, support, and resources to improve teaching and learning (Gunadi, 2025). Digital transformation theory highlights the process of integrating digital technology into organizational practices to improve efficiency, effectiveness, and innovation (Siskawati, 2025). The synergy of these two theories enables an analysis of academic supervision that goes beyond traditional approaches, viewing digital technology as a tool to enhance supervision practices and teacher development. By using this multidimensional theoretical lens, the research evaluates how digital-based academic supervision can improve teacher performance while maintaining Islamic educational values and traditions.

Based on the above description, this study aims to: (1) analyze the implementation of the digital-based academic supervision model at Madrasah SMP Negeri 1 Seputih Banyak; (2) examine the impact of digital-based academic supervision on teacher performance; and (3) identify supporting and inhibiting factors in the implementation of digital-based academic supervision. The results of this study are expected to provide theoretical contributions to the development of Islamic educational management and practical recommendations for madrasah heads in improving teacher performance through digital-based academic supervision.

2. RESEARCH METHODS

2.1 Research Design

This study employs a qualitative approach with a case study design to explore the implementation of a digital-based academic supervision model and its impact on teacher performance at Madrasah SMP Negeri 1 Seputih Banyak (Creswell & Poth, 2018). The qualitative approach was chosen

because it enables an in-depth understanding of the complex phenomenon of digital-based academic supervision in its natural setting, capturing participant perspectives and contextual factors that influence implementation (Miles, Huberman, & Saldaña, 2014). The case study design is appropriate for examining contemporary phenomena in real-life contexts, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2018). This design allows the researcher to capture the "how" and "why" of the implementation of digital-based academic supervision and its impact on teacher performance.

2.2 Subject and Research Location

The research was conducted at Madrasah SMP Negeri 1 Seputih Banyak, located in Seputih Banyak District, Central Lampung Regency, Lampung Province. This site was purposively selected based on several considerations: (1) the madrasah has begun implementing digital-based academic supervision using platforms such as the Madrasah Digital Report (RDM) and Google Classroom; (2) the madrasah faces typical challenges of rural madrasahs, including limited digital infrastructure and varying levels of teacher digital competence; and (3) the madrasah demonstrates commitment to improving teacher performance through innovative supervision approaches. The research subjects include 12 key informants: the madrasah head (1), academic supervisors (2), and teachers from various subjects (9). Participants were selected using purposive sampling to ensure representation across subject areas, teaching experience, and levels of digital competence.

2.3 Data Collection Procedures

Data collection was conducted over a four-month period from January to April 2026 using three main techniques: in-depth interviews, participatory observation, and documentation. Semi-structured interviews were conducted with the madrasah head, supervisors, and teachers to explore their experiences, perceptions, and challenges in implementing digital-based academic supervision. Each interview lasted between 45 to 90 minutes and was recorded with participant consent. Participatory observation was conducted during supervision activities, including classroom observations, feedback sessions, and professional development meetings, to observe the actual implementation of digital supervision practices. Documentation included analysis of supervision planning documents, observation reports, teacher performance records, Madrasah Digital Report (RDM) data, and other relevant documents. This multi-method approach ensures that the data is not only deep but also verified across different sources, reducing the risk of subjective bias in the findings (Creswell & Poth, 2018).

2.4 Research Instruments

The primary instrument in this qualitative research is the researcher themselves, supported by secondary instruments such as interview protocols, observation checklists, and documentation grids. The interview protocol consisted of 20 open-ended questions designed to explore the implementation of digital-based academic supervision, its impact on teacher performance, and supporting and inhibiting factors. Questions were organized into five themes: (1) understanding and perceptions of digital supervision; (2) implementation processes and practices; (3) impact on teacher performance; (4) challenges and obstacles; and (5) recommendations for improvement. The observation checklist was structured to monitor supervision activities, including planning,

classroom observation, feedback provision, and follow-up. These instruments were validated by experts in educational management and supervision to ensure accurate measurement of the intended indicators (Cacal et al., 2023).

2.5 Data Analysis Techniques

Data analysis followed the interactive model of Miles, Huberman, and Saldaña (2014), which involves data condensation, data display, and conclusion drawing. During condensation, raw data from interviews and observations were coded according to themes such as "digital planning," "technology-assisted observation," "data-based feedback," "teacher performance improvement," and "implementation challenges." Data display was achieved through the creation of matrices, diagrams, and narrative descriptions to visualize relationships between variables and themes. Finally, conclusions were drawn by triangulating empirical findings with theoretical frameworks and previous research, ensuring a robust theoretical synthesis (Katni, 2024). Member checking was conducted with participants to verify the accuracy of interpretations and findings.

2.6 Validity and Reliability

Data validity was maintained through source and methodological triangulation, as well as member checking with the madrasah head, supervisors, and teachers. Source triangulation was achieved by comparing data from various informants (madrasah head, supervisors, and teachers) to identify convergent and divergent perspectives. Methodological triangulation was achieved by comparing findings from interviews, observations, and documentation. Reliability was ensured by creating a clear "audit trail" of all raw data, transcripts, and analysis notes, allowing for procedural consistency (Creswell & Poth, 2018). By comparing the perspectives of various stakeholders, the researcher ensured that the findings on digital-based academic supervision were not one-sided but reflected the reality of the entire school ecosystem (Amiruddin et al., 2020).

3. RESULTS AND FINDINGS

3.1 Implementation of the Digital-Based Academic Supervision Model

The findings reveal that the digital-based academic supervision model at Madrasah SMP Negeri 1 Seputih Banyak is implemented through four strategic stages: digital planning and scheduling, technology-assisted classroom observation, data-based feedback and reflection, and sustainable professional development follow-up.

Stage 1: Digital Planning and Scheduling. The madrasah head and supervisors utilize digital platforms, particularly the Madrasah Digital Report (RDM) and Google Calendar, to plan and schedule supervision activities. The RDM platform provides a centralized system for recording and tracking teacher performance data, including lesson plans, attendance, and student assessment results. Supervisors use the platform to identify teachers requiring supervision based on performance indicators and to schedule observations. As explained by the madrasah head (KP-01):

"We use the RDM platform to plan supervision activities more systematically. This platform allows us to see which teachers need support based on their performance data, and we can

schedule observations and feedback sessions. This makes our supervision more targeted and efficient compared to the previous manual system."

Stage 2: Technology-Assisted Classroom Observation. Classroom observations are conducted using a combination of direct observation and video recording. Supervisors use tablets or smartphones to record classroom activities, which are then uploaded to a shared drive for analysis. This approach allows supervisors to review observations multiple times, identify specific areas for improvement, and provide more detailed and evidence-based feedback. A supervisor (SP-01) described the process:

"Recording classroom activities is very helpful for both supervisors and teachers. Teachers can see themselves teaching, which is often a powerful learning experience. We can also review the recordings together and discuss specific moments that need improvement. This makes feedback more concrete and actionable."

Stage 3: Data-Based Feedback and Reflection. Following classroom observation, supervisors and teachers engage in feedback sessions using data from the RDM platform and video recordings. Feedback focuses on specific performance indicators, including lesson planning, classroom management, student engagement, and use of technology in teaching. Supervisors provide constructive feedback and work with teachers to develop improvement plans. A teacher (GR-02) shared:

"Feedback sessions have become more meaningful because we have concrete evidence from video recordings and RDM data. Previously, feedback was often general and subjective. Now, we can see exactly what happened in the classroom and discuss specific strategies for improvement. This makes a big difference in how I approach teaching."

Stage 4: Sustainable Professional Development Follow-Up. The supervision process includes follow-up activities to support teacher professional development. Based on findings from observations and feedback sessions, supervisors and teachers develop individual professional development plans. These plans may include participation in online training, workshops, peer observation, or mentoring. The RDM platform is used to track progress and document professional development activities. The madrasah head (KP-01) emphasized:

"Our goal is not just to evaluate teachers but to support their professional growth. We use supervision findings to identify training needs and provide opportunities for teachers to develop their skills. Digital tools help us track progress and ensure that follow-up activities actually happen."

3.2 Impact of Digital-Based Academic Supervision on Teacher Performance

The implementation of the digital-based academic supervision model has resulted in measurable improvements in teacher performance across various dimensions.

Lesson Planning. Teachers reported significant improvements in their lesson planning practices. The use of digital tools for lesson planning, combined with feedback from supervisors, has helped

teachers develop more structured, engaging, and student-centered lesson plans. A mathematics teacher (GR-01) explained:

"Before the digital supervision model, my lesson plans were often basic and didn't include much detail. Now, with feedback from supervisors and examples I can access online, I have learned to create more comprehensive lesson plans that include clear learning objectives, varied activities, and assessment strategies. My students seem more engaged, and I feel more confident in my teaching."

Classroom Management. Video-based observation and feedback have helped teachers improve their classroom management skills. Teachers reported increased awareness of their teaching behaviors and better ability to manage student behavior, maintain student engagement, and create a positive learning environment. A science teacher (GR-04) shared:

"Seeing myself on video was truly eye-opening. I realized I was talking too much and not giving students enough opportunities to participate. After discussing this with my supervisor, I started using more group work and hands-on activities. My class is now more interactive, and students seem more interested in the lessons."

Technology Integration. The digital supervision model has encouraged teachers to integrate technology more effectively into their teaching. Teachers reported increased use of digital tools such as Google Classroom, educational apps, and multimedia resources in their lessons. An English teacher (GR-03) noted:

"The supervision process has encouraged me to use technology more creatively in my teaching. I have learned to use Google Classroom for assignments and quizzes, and I also use videos and interactive activities to make my lessons more engaging. My students are more motivated, and I can see improvements in their learning outcomes."

Student Learning Outcomes. Improvements in lesson planning, classroom management, and technology integration have contributed to better student learning outcomes. Teachers reported increased student engagement, improved test scores, and better student performance on assignments and projects. The madrasah head (KP-01) confirmed:

"We have seen positive trends in student learning outcomes since implementing the digital supervision model. Student test scores have improved, and there has been a noticeable increase in student engagement and participation in class. Teachers are more confident and effective, and this is reflected in student performance."

3.3 Supporting and Inhibiting Factors in Implementing the Digital-Based Academic Supervision Model

3.3.1 Supporting Factors

The implementation of the digital-based academic supervision model at Madrasah SMP Negeri 1 Seputih Banyak is supported by several factors. The primary supporting factor is the strong commitment of the madrasah head to develop and implement the digital supervision model,

reflected in budget allocation for technology infrastructure development, provision of training for teachers, and consistency in implementing supervision. Other supporting factors include the availability of adequate technological infrastructure, including stable internet connection, computers and smartphones, and digital platforms that support supervision implementation. In addition, a positive learning culture among teachers and openness to change are also significant supporting factors. The supervisor (SP-01) stated that support from the madrasah head and teacher readiness to adopt digital technology are key to the success of implementing the digital supervision model.

3.3.2 Inhibiting Factors

On the other hand, the implementation of the digital-based academic supervision model also faces several inhibiting factors. The main inhibiting factor is limited digital literacy among teachers, especially those who are older and less familiar with digital technology. This limitation causes some teachers to experience difficulties in accessing supervision platforms, uploading documents, and participating in online supervision. Another inhibiting factor is unstable internet network constraints in some areas, especially during bad weather, which disrupts the smooth implementation of online supervision. In addition, high administrative burdens and continuously changing curriculum demands also pose challenges in implementing digital-based supervision. A teacher (GR-07) expressed that teachers are often overwhelmed with administrative demands, making it difficult to focus on professional development through supervision. This aligns with the findings of Posangi et al. (2025) that supervision is often constrained by internal factors such as teacher motivation and seniority, as well as external factors such as limited infrastructure and resistance to innovation.

4. DISCUSSION

The findings of this research demonstrate that the digital-based academic supervision model implemented at Madrasah SMP Negeri 1 Seputih Banyak represents a significant advancement in educational management practice, addressing critical gaps in traditional supervision approaches while leveraging digital technology to enhance teacher performance. This discussion examines these findings in relation to existing theoretical frameworks and empirical research, highlighting implications for madrasah leadership and teacher development.

The implementation of the digital-based academic supervision model through four strategic stages—digital planning and scheduling, technology-assisted classroom observation, data-based feedback and reflection, and sustainable professional development follow-up—reflects a systematic approach to transforming supervision from a periodic and judgmental process into a continuous and developmental one. This finding aligns with research by Sapwan et al. (2025) which found that digital supervision improves teacher performance in Indonesian secondary schools through tools that support real-time feedback and collaboration. The integration of digital tools such as the Madrasah Digital Report (RDM), Google Classroom, and video-based observation provides a comprehensive platform for supervision that enhances efficiency, transparency, and teacher engagement. As demonstrated by Abdullah et al. (2025), the digital

academic supervision model can significantly improve madrasah principals' managerial competence and teachers' professional competence, with documented increases of 27.7% and 24.6% respectively.

The use of technology-assisted classroom observation, particularly video recording, represents a significant shift from traditional observation methods. This approach allows supervisors and teachers to review teaching practices multiple times, identify specific areas for improvement, and provide more detailed and evidence-based feedback. This finding is consistent with research by Salym (2024) which found that digital academic supervision improves teacher professionalism through personal learning networks that mediate the relationship between supervision and professional development. The ability to review recordings together facilitates a more collaborative and reflective supervision approach, shifting the focus from evaluation toward professional growth. As noted by Rahman and Handoko (2025) in their systematic literature review, effective academic supervision and digital leadership by school principals are key factors in improving teacher competence, motivation, and technology integration in teaching.

The data-based feedback and reflection stage of the digital supervision model represents a significant improvement over traditional supervision approaches, which often relied on subjective impressions and general observations. By using data from the RDM platform and video recordings, supervisors can provide specific and evidence-based feedback that is more actionable and meaningful for teachers. This finding aligns with research by Hidayah, Azis, and Rizal (2025) which found that contextual learning methods can improve student learning outcomes, demonstrating the importance of data-driven approaches in education. The use of concrete evidence in feedback sessions helps teachers understand their strengths and areas for improvement more clearly, leading to more effective professional development. As found by Gunadi (2025) in his study on AI-assisted supervision, technology can support leadership practices and improve teacher performance by providing data-based insights and recommendations.

The sustainable professional development follow-up component of the digital supervision model reflects a commitment to continuous teacher growth rather than periodic evaluation. By developing individual professional development plans based on supervision findings, the madrasah ensures that teachers receive targeted support to address their specific needs. This finding is consistent with research by Maulana, Haris, and Ihwan (2025) which found that habituation of worship contributes to the formation of disciplined character, demonstrating the importance of continuous practice and reinforcement in professional development. The use of the RDM platform to track progress and document professional development activities provides accountability and ensures that follow-up activities are actually implemented. As emphasized by Rosiyati, Erviana, Fadilla, and Sholihah (2025), meaningful, mindful, and joyful deep learning approaches are more effective in creating lasting learning outcomes.

The improvement in teacher performance across various dimensions—lesson planning, classroom management, technology integration, and student learning outcomes—demonstrates the comprehensive impact of the digital supervision model. Teachers reported more structured and engaging lesson plans, improved classroom management skills, increased use of technology in teaching, and improved student engagement and learning outcomes. These findings are consistent

with research by Hairunisa (2023) which found that student-centered learning approaches can increase student participation in Islamic Religious Education, demonstrating that improved teaching practices lead to better student outcomes. The measurable improvements in teacher performance validate the effectiveness of the digital supervision model as a professional development tool. As found by Siskawati (2025), digital leadership, organizational communication, organizational culture, and emotional intelligence all influence teacher performance, indicating that digital supervision is part of a broader ecosystem of factors contributing to teacher effectiveness.

The supporting factors identified in this research—leadership commitment, availability of digital tools, supervisor competence, teacher motivation, and peer support—are consistent with the broader literature on successful educational change. The strong commitment of the madrasah head to the digital supervision model was crucial in providing resources, support, and encouragement for teachers and supervisors. This finding aligns with research by Katni, Pramesty, and Tajab (2025) which emphasizes the role of teachers in moral education through the habitus model, demonstrating that leadership and role modeling are essential for successful educational initiatives. The availability of digital tools such as the RDM platform and Google Classroom has facilitated the implementation of digital supervision, providing a centralized system for recording and tracking teacher performance data. As found by Yani, Katni, and Erwahyudin (2025) in their study on the habitus approach in pesantren, supportive environments and structures are crucial for successful educational practices.

The inhibiting factors identified—limited internet access, varying levels of digital competence, time constraints, resistance to change, and inadequate training—are significant challenges that must be addressed for successful digital supervision implementation. Limited internet access in rural areas is a pervasive challenge affecting the use of online platforms and digital resources. This finding is consistent with challenges identified by Sapwan et al. (2025), who noted that digital supervision requires adequate infrastructure and support. Varying levels of digital competence among teachers create gaps in the implementation of digital supervision and its impact on teacher performance. As emphasized by Luthfiyani, Rajab, and Masyhuri (2025) in their study on constructivism in Islamic learning, individual differences in knowledge and skills must be addressed through differentiated support.

Time constraints due to heavy workloads and administrative responsibilities limit the time available for supervision activities, including planning, observation, feedback, and follow-up. This finding aligns with challenges identified by Maki, Wasliman, and Dianawati (2022), who found that school principals face significant time constraints in implementing strategic management practices. Resistance to change among some teachers, due to concerns about privacy, increased workload, and lack of familiarity with digital tools, is a significant barrier to implementation. As noted by Wafa, Syarifah, and Nadhif (2025) in their study on Deep Learning in Islamic education, transformation from traditional approaches requires addressing resistance and building acceptance through effective communication and support.

The theoretical contribution of this research lies in the development of a digital-based academic supervision model contextualized for madrasah environments in rural areas, integrating available

digital tools such as the Madrasah Digital Report (RDM), Google Classroom, and video-based observation platforms. While previous research has examined digital supervision in general education contexts (Sapwan et al., 2025; Abdullah et al., 2025), this research specifically addresses the unique challenges and opportunities of madrasah environments, including the need to balance traditional Islamic values with modern educational practices. The model's emphasis on four strategic stages—digital planning, technology-assisted observation, data-based feedback, and sustainable professional development—offers a practical framework that can be adapted by other madrasahs seeking to leverage digital technology for academic supervision.

The practical implications of this research extend to educational policy and practice in madrasah environments. For madrasah heads, the findings highlight the importance of leadership commitment in implementing digital supervision, including providing resources, support, and encouragement for teachers and supervisors. For supervisors, the findings emphasize the need for competence in using digital tools and providing effective feedback to teachers. For teachers, the findings underscore the importance of motivation and receptiveness to feedback and support in improving performance. For policymakers, the findings indicate that investment in digital infrastructure, training, and support is essential for successful digital supervision implementation in madrasahs.

The findings of this research also address concerns about teacher performance raised by the 2024 Integrity Assessment Survey (SPI) in Lampung Province. The implementation of the digital-based academic supervision model at Madrasah SMP Negeri 1 Seputih Banyak has contributed to improvements in teacher discipline, professionalism, and performance, demonstrating that digital supervision can be an effective strategy for addressing challenges identified in the SPI. The model's emphasis on data-based feedback and sustainable professional development provides a systematic approach to improving teacher performance that can be replicated in other madrasahs facing similar challenges.

However, this research has several limitations. First, the research was conducted at a single madrasah in Central Lampung Regency, which may limit the generalizability of findings to other contexts. Second, the qualitative approach, while providing rich and detailed data, does not allow for statistical generalization. Third, the research relied on self-reported data from participants, which may be subject to social desirability bias. Fourth, the research did not include a comparison group or baseline data, making it difficult to attribute teacher performance improvements solely to the digital supervision model. Future research should expand the scope to multiple madrasahs across different regions, use mixed-methods approaches, and include longitudinal designs to examine the long-term impact of digital supervision on teacher performance.

5. CONCLUSION

This study concludes that the implementation of a digital-based academic supervision model at SMP Negeri 1 Seputih Banyak has significantly contributed to improving teacher performance through a systematic supervision process consisting of digital planning, technology-assisted classroom observation, data-driven feedback, and continuous professional development. The integration of digital platforms has enhanced the efficiency, transparency, and effectiveness of

academic supervision while encouraging teachers to improve lesson planning, classroom management, technology integration, and overall instructional quality. The successful implementation of this model is supported by strong leadership commitment, adequate technological infrastructure, and a collaborative organizational culture, although challenges such as limited internet connectivity, varying digital competencies, and resistance to change remain. Overall, the digital-based academic supervision model provides an effective and sustainable framework for strengthening teacher professionalism and improving the quality of education in madrasahs in the digital era.

Based on the findings, madrasahs and educational policymakers should prioritize strengthening digital infrastructure, expanding internet accessibility, and providing continuous training and mentoring programs to improve the digital competencies of principals, supervisors, and teachers. School leaders are also encouraged to foster a collaborative professional culture through professional learning communities, peer mentoring, and reflective supervision practices to ensure sustainable teacher development. In addition, government support through appropriate policies, funding for technological infrastructure, and incentive systems is essential for the successful implementation of digital-based academic supervision. Future research is recommended to involve a wider range of madrasahs, utilize mixed-methods or longitudinal research designs, and examine additional variables that may influence teacher performance and student learning outcomes in digital educational environments.

6. REFERENCES

- Abdullah, S., Satori, D., Sururi, Suryadi, & Ulfa, M. (2025). Digital academic supervision model for enhancing instructional leadership of madrasah principals: Development and effectiveness of the ABDUL application. *Tadbir: Jurnal Studi Manajemen Pendidikan*, 9(2), 643–674. <https://doi.org/10.29240/jsmp.v9i2.15073>
- Alrasheed, R. A. R. (2025). Building public trust in Bahrain: Leveraging artificial intelligence to combat financial fraud and terrorist financing through cryptocurrency tracking. *Social Sciences*, 14(5). <https://doi.org/10.3390/socsci14050308>
- Amiruddin, et al. (2020). Gotong-royong dalam pendidikan: Efektivitas partisipasi keuangan di madrasah pedesaan. *Jurnal Pendidikan Islam*, 9(2), 145–162.
- Assanova, A., Issaeva, A., Dzhubalieva, Z., Arzikulova, R., & Uchkampirova, A. (2025). Financial-digital investments in human capital as a factor of sustainable economic growth: Assessment, dynamics and impact of artificial intelligence (A Kazakhstan case study). *Economic Annals-XXI*, 213(1–2), 18–29. <https://doi.org/10.21003/ea.V213-02>
- Cacal, et al. (2023). Disability inclusion and educational equity in Islamic higher education. *Journal of Islamic Education*, 15(3), 45–62.
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Evanofrita, E., Rifma, R., & Nellitawati, N. (2020). Pelaksanaan supervisi akademik kepala sekolah di sekolah luar biasa. *JMKSP (Jurnal Manajemen, Kepemimpinan, dan Supervisi Pendidikan)*, 5(2), 217–229. <https://doi.org/10.31851/jmksp.v5i2.3772>

- Gathu, C. (2022). Facilitators and barriers of reflective learning in postgraduate medical education: A narrative review. *Journal of Medical Education and Curricular Development*, 9. <https://doi.org/10.1177/23821205221111930>
- Gunadi, G. (2025). Transforming school leadership: A qualitative inquiry into AI-assisted supervision and teacher performance in Indonesian elementary schools. *Journal of Educational Management and Instruction (JEMIN)*, 5(2), 464–478. <https://doi.org/10.22515/jemin.v5i2.12446>
- Hairunisa, N. (2023). Pembelajaran berbasis student-centered learning pada materi pendidikan agama Islam siswa kelas VIII Madrasah Tsanawiyah Darul Falah Sumber Agung Kecamatan Bengkunt Kabupaten Pesisir Barat. *Unisan Jurnal*, 1(5), 241–250.
- Hariri, H., & Karwan, D. H. (2021). Penguatan kompetensi supervisi akademik bagi kepala sekolah dasar di Kota Bandar Lampung. *Jurnal Kreativitas Pengabdian Kepada Masyarakat*, 4(3), 494–508. <https://doi.org/10.33024/jkpm.v4i3.4361>
- Hidayah, R. N., Azis, A. A., & Rizal, A. S. (2025). Efektivitas metode contextual teaching and learning terhadap peningkatan hasil belajar fiqih siswa di MTs Miftahul Ilmiyah Mojowetan Blora. *Jurnal Pendidikan Indonesia: Teori, Penelitian, dan Inovasi*, 5(6).
- Ibrahim, I., Niswah, C., & Safitri, R. (2023). Implementasi sistem raport digital madrasah berbasis web di MA Al-Mubarakah Banyuasin. *Indo-Mathedu Intellectuals Journal*, 4(2), 130–142. <https://doi.org/10.55681/swarna.v2i7.736>
- Iin, J. N., Sutoyo, M. N., & Astuti, U. L. (2024). Sistem informasi supervisi akademik untuk sekolah dasar di Kabupaten Kolaka. *Bit-Tech*, 7(1), 153–161. <https://doi.org/10.32877/bt.v7i1.1595>
- Katni, K. (2024). Innovation strategy implementation of character education for the young generation of Indonesia. *Halaqa: Islamic Education Journal*, 8(1), 52–71.
- Katni, K., Pramesty, E. S., & Tajab, M. (2025). The role of teachers in moral education through the habitus model. *Jurnal Tarbiyatuna*, 16(1).
- Kautsar, M., & Julaiha, S. (2023). Langkah-langkah manajemen strategik di lembaga pendidikan Islam. *Journal of Instructional and Development Researches*, 3(1), 24–28. <https://doi.org/10.53621/jider.v3i1.203>
- Luthfiyani, P. W., Rajab, K., & Masyhuri, M. (2025). Pendekatan konstruktivisme dalam psikologi belajar berbasis nilai-nilai Islam. *Hamalatul Qur'an: Jurnal Ilmu-Ilmu Al-Qur'an*, 6(1), 20–36.
- Maki, A., Wasliman, I., & Dianawati, E. (2022). Manajemen strategis kepala madrasah dalam meningkatkan produktivitas kinerja guru. *Jurnal Riset Tindakan Indonesia*, 7(4), 747–755.
- Mar'ah, K., Syamrina, Putra, S. P., Yaumi, M., & Damopolii, M. (2025). The effect of utilizing the Madrasah Digital Report (RDM) and the principal's academic supervision on the quality of student academic reports at SMP-IT As'adiyah Dapoko, Bantaeng Regency. *EduLeadership: Journal of Educational Leadership*, 5(1). <https://doi.org/10.24252/edu.v5i1.59428>

- Maulana, I., Haris, A., & Ihwan, I. (2025). Pengaruh pembiasaan ibadah terhadap pembentukan karakter disiplin anak di Madrasah Ibtidaiyah Kota Bima. *eL-Muhbib: Jurnal Pemikiran dan Penelitian Pendidikan Dasar*, 9(1), 259–269.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE Publications.
- Nafiah, K. M. (2025). *Pengaruh iklim madrasah, supervisi akademik, dan motivasi kerja terhadap kinerja guru MI se-Kecamatan Dagangan Madiun tahun ajaran 2024/2025* (Master's thesis, IAIN Ponorogo). <https://etheses.iainponorogo.ac.id/33421/>
- Penyusun, T., & Pendidikan, S. P. I. (2024). *Laporan hasil survei penilaian integritas pendidikan*. Komisi Pemberantasan Korupsi.
- Rahman, B., & Handoko, H. (2025). A systematic literature review on academic supervision and digital leadership practices in creating teacher performance. *Prima Magistra: Jurnal Ilmiah Kependidikan*, 6(3), 328–346.
- Ranosa, M. R., Qiftiyah, M., & Syauqi, M. (2025). Principal leadership in the era of educational digitalization and its impact on teacher performance in madrasahs. *Journal of Advanced Islamic Educational Management*, 5(1). <https://doi.org/10.24042/mxaf6043>
- Rosiyati, D., Erviana, R., Fadilla, A. U., & Sholihah, U. (2025). Pendekatan deep learning dalam Kurikulum Merdeka. *Al-Irsyad Journal of Mathematics Education*, 4(2), 131–143.
- Salym, A. Q. N. (2024). *Increasing teacher professionalism through the implementation of digital academic supervision in Indonesian secondary schools: Personal learning networks as mediator*. Semantic Scholar.
- Sapwan, A., Meirawan, D., Saton, D., & Sutarsih, C. (2025). The role of digital supervision in enhancing teacher performance in Indonesian secondary education. *Indonesian Research Journal in Education*, 9(1), 495–508. <https://doi.org/10.22437/irje.v9i01.44664>
- Sarbanun, A. (2024). Efektivitas supervisi akademik kepala madrasah dalam meningkatkan kinerja guru di MTs Hidayatul Mubtadiin Jati Agung. *Jurnal Pendidikan Tambusai*, 8(2), 37033–37036.
- Siskawati, G. (2025). The influence of digital leadership, organizational communication, organizational culture, and emotional intelligence on teacher performance. *Indonesian Journal of Educational Development*, 6(3), 782–797. <https://doi.org/10.59672/ijed.v6i3.5034>
- Wafa, A., Syarifah, S., & Nadhif, M. (2025). Transformasi pembelajaran pendidikan agama Islam berbasis deep learning: Dari pendekatan hafalan menuju internalisasi nilai. *Academicus: Journal of Teaching and Learning*, 4(2), 103–116.
- Yani, Y., Katni, K., & Erwahyudin, D. D. (2025). Implementasi pendekatan habitus dalam pembentukan akhlak terpuji santri di Pondok Pesantren Hasan Munadi, Ponorogo, Indonesia. *Tamaddun*, 26(2), 108–124. <https://doi.org/10.24235/tamaddun.v26i2.17077>
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.