

# E-Peer Supervision Mentoring as a Digital Strategy for Strengthening Collaboration and Professionalism among Madrasah Ibtidaiyah Teachers

Nurhattati<sup>1</sup>, Ahmad Jauhari Hamid Ripki<sup>2</sup>, Aldo Redho Syam<sup>1</sup>

<sup>1</sup>Universitas Negeri Jakarta, Indonesia

<sup>2</sup>Sekolah Tinggi Keguruan dan Ilmu Pendidikan Kusuma Negara, Indonesia

## ABSTRACT

Professional development for Madrasah Ibtidaiyah teachers is often constrained by limited opportunities for continuous supervision and by supervision practices that remain formal and appraisal oriented. This study examines the implementation of E-Peer Supervision mentoring as a strategy to strengthen teacher collaboration and professionalism through a flexible, digital, and collegial supervision process. The program involved 30 teachers from 10 Madrasah Ibtidaiyah in Klari District and was implemented through needs assessment, conceptual and digital-media training, guided peer-supervision practice, reflection, evaluation, and follow-up activities. Participants' understanding was assessed using pretest and posttest measures covering six aspects of peer supervision. The overall mean score increased from 60.33 to 84.50, representing a gain of 24.17 points. The largest improvements were found in understanding E-Peer Supervision, which increased by 26 points, and in the use of digital media for supervision, which increased by 25 points. The program also encouraged more open professional interaction, constructive feedback, reflective practice, and cross-madrasah collaboration. However, differences in digital competence and teachers' readiness to give and receive feedback remain important challenges. These findings indicate that E-Peer Supervision can provide a practical and sustainable approach to teacher professional development when supported by madrasah leadership, continuous digital-capacity development, and regular implementation through teacher learning communities.

 OPEN ACCESS

## ARTICLE HISTORY

Received: 03-08-2026

Revised: 31-08-2026

Accepted: 31-08-2026

## KEYWORDS

supervision, teacher collaboration, teacher professionalism, digital technology, madrasah ibtidaiyah

## Corresponding Author:

Nurhattati

Universitas Negeri Jakarta, Indonesia

Email: [nurhattati@unj.ac.id](mailto:nurhattati@unj.ac.id)

## Introduction

Educational developments in the digital era require Madrasah Ibtidaiyah teachers to possess not only pedagogical, professional, social, and personal competencies but also the ability to adapt to technology-based professional development models (Mustofa & Bishri, 2026; Wulandari et al., 2023). Teachers can no longer work solely as individuals within their respective classrooms; they need to build a collaborative culture that enables the exchange of experiences, instructional reflection, and continuous improvement of teaching practices (Asmawati et al., 2026; Masae et al., 2025; Wibowo et al., 2025). In the madrasah context, this need is increasingly important because teachers have a dual responsibility: developing students' academic skills while instilling Islamic values, character, and moral conduct from the elementary level (Mauidhoh & Syarif, 2025; Zahiq & Kusuma, 2025).

One issue that is still frequently encountered in teacher professional development is the limited availability of dialogic, collegial, and continuous supervision (Nur et al., 2025; Subadri et al., 2025). Supervision is often understood as an appraisal activity conducted by a superior, and therefore has not fully functioned as a means of shared reflection for improving instructional quality. Teachers, however, require support that is closely connected to actual classroom needs, is nonjudgmental, and provides opportunities to learn from one another. In this regard, peer supervision is a relevant approach because it positions teachers as learning partners who exchange feedback, share strategies, and collectively develop professional awareness.

E-Peer Supervision mentoring is an innovative strategy for strengthening collaboration and professionalism among Madrasah Ibtidaiyah teachers through the use of digital technology (Idris et al., 2025; Syukur & Sutanti, 2026). Through this system, teachers can conduct observations, discussions, reflections, and instructional feedback in a more flexible, documented, and continuous manner. This approach not only helps teachers improve the quality of their instructional practices but also builds an open, participatory, and mutually supportive academic culture within the madrasah (Zahiq & Kusuma, 2025). E-Peer Supervision mentoring therefore needs to be developed as a systematic effort to address the need to improve the quality of Madrasah Ibtidaiyah teachers amid increasingly dynamic educational change.

The main problem faced by Madrasah Ibtidaiyah teachers in practice is the limited time and opportunity available for face-to-face instructional supervision. Administrative workloads, demanding teaching schedules, teachers' involvement in madrasah activities, and the requirement to complete instructional documents often prevent supervision from being implemented optimally. Consequently, supervision is conducted only at certain times and has not yet become a continuous mentoring activity. This condition

limits teachers' opportunities to receive in-depth feedback on the instructional practices they have implemented in the classroom.

Furthermore, supervision in madrasahs still tends to be conventional, formal, and rigid. Teachers often interpret supervision as an appraisal process conducted by the madrasah principal or supervisor rather than as a space for professional reflection that promotes instructional improvement. At the same time, teacher learning communities such as the Teacher Working Group (Kelompok Kerja Guru, KKG) have not fully functioned as active, reflective, and needs-based collaborative forums. A weak culture of sharing good practices, engaging in pedagogical discussion, and providing peer support has resulted in uneven development of teacher professionalism. A more flexible, participatory mentoring strategy that suits the working conditions of Madrasah Ibtidaiyah teachers is therefore needed, one of which is E-Peer Supervision.

The solution offered through this program is E-Peer Supervision mentoring as a strategy for strengthening collaboration and professionalism among Madrasah Ibtidaiyah teachers. E-Peer Supervision is designed as a digital peer-supervision model that enables teachers to observe one another, provide feedback, discuss, and reflect on instructional practices more flexibly. Through this approach, supervision is no longer positioned as a rigid appraisal activity but as a shared learning process among teachers to improve instructional quality. Teachers can document instructional materials, teaching videos, reflection notes, and observation results online, allowing mentoring to continue despite constraints of time and distance.

The mentoring program is implemented through several stages: introducing the concept of E-Peer Supervision, training teachers to use simple digital media, developing peer-supervision instruments, practicing classroom observation, providing constructive feedback, and conducting joint reflection. The program is also intended to reactivate teacher learning communities through the KKG or internal madrasah forums so that they become active and sustainable collaborative spaces. Through this mentoring, teachers are expected to build a culture of mutual support, remain open to feedback, and regularly conduct self-evaluation of their teaching practices. Ultimately, E-Peer Supervision is expected to enhance the professionalism of Madrasah Ibtidaiyah teachers while strengthening the quality of instruction in madrasah.

The purpose of the E-Peer Supervision mentoring program is to improve the ability of Madrasah Ibtidaiyah teachers to conduct digital peer supervision in a collaborative, reflective, and sustainable manner. The program is designed to help teachers understand supervision not only as an appraisal activity but also as a process of professional support that improves the quality of classroom instruction. Through this program, teachers are expected to provide one another with constructive feedback, document instructional practices, and reflect on the strengths and weaknesses of their teaching processes.

The program also aims to strengthen a culture of collaboration among teachers through the use of simple digital media that are easy to access and operate. E-Peer Supervision mentoring is expected to reactivate the role of teacher learning communities, such as the KKG or internal madrasah forums, as spaces for sharing good practices, discussing instruction, and solving problems collectively. Thus, the program focuses not only on improving individual teacher competence but also on creating an open, mutually supportive professional ecosystem within the madrasah that is oriented toward improving instructional quality.

The expected output of this program is an increased understanding among Madrasah Ibtidaiyah teachers of the concepts, principles, and implementation stages of E-Peer Supervision. Teachers are also expected to be able to use peer-supervision instruments, prepare classroom observation notes, provide objective feedback, and write instructional reflections based on actual classroom experiences. Another expected output is the development of a practical E-Peer Supervision guide that teachers and madrasahs can use as a reference for independently conducting peer supervision.

In addition to improving teacher competence, the program is expected to establish more active and sustainable mentoring groups or teacher learning communities. These communities can serve as forums where teachers share instructional materials, videos of teaching practices, reflection notes, and solutions to instructional challenges. Through these outputs, the E-Peer Supervision mentoring program is expected to have a tangible effect on improving teacher professionalism, strengthening collaboration among teachers, and enhancing instructional quality in Madrasah Ibtidaiyah.

## **Methods**

The E-Peer Supervision mentoring program involved 30 teachers from 10 Madrasah Ibtidaiyah in Klari District. Each madrasah sent teacher representatives to participate in mentoring activities focused on strengthening collaboration, using simple technology, and improving teacher professionalism through digital peer supervision. The program was implemented through several activities, including presentation of the E-Peer Supervision concept, introduction to peer-supervision instruments, practice using digital media, simulations of feedback delivery, and joint reflection.

The E-Peer Supervision mentoring program was implemented using a participatory, collaborative, and needs-based approach for Madrasah Ibtidaiyah teachers. The program was designed not merely as one-way training but also as direct mentoring, guided practice, joint reflection, and continuous evaluation. This approach was selected so that teachers would not only understand the concept of digital peer supervision theoretically but would also be able to apply it in authentic instructional contexts within their madrasahs. Accordingly, the implementation process was directed toward building

teachers' professional awareness, strengthening a culture of mutual learning, and creating a more flexible and less rigid supervision model.

The first stage involved preparation and identification of partner needs. At this stage, the implementation team coordinated with the madrasahs, principals, and teachers to map the initial conditions of instructional supervision. Needs were identified through preliminary discussions, limited observations, and the collection of information about the challenges faced by teachers, including limited time for face-to-face supervision, low levels of discussion among teachers, and the suboptimal use of digital media in supervision activities. The results of this needs assessment formed the basis for developing the mentoring materials, peer-supervision instruments, and digital media formats that best matched the teachers' abilities and circumstances.

The second stage involved training and strengthening teachers' understanding of E-Peer Supervision. At this stage, teachers learned about the nature of peer supervision, the principles of constructive feedback, the ethics of collaboration among teachers, and the benefits of digital technology in supporting instructional supervision. Activities included presentations, interactive discussions, case studies, and simple simulations. Teachers were also introduced to classroom observation instrument formats, teacher reflection sheets, and digital media that could be used, such as Google Forms, Google Drive, WhatsApp groups, and other platforms that were readily accessible to them.

The third stage consisted of guided E-Peer Supervision practice. Teachers were divided into small groups or peer pairs to conduct the supervision process. Each teacher alternately served as the teacher being supervised and as the peer supervisor. The practice included preparing instructional materials, observing the instructional process, recording findings, providing feedback, and preparing reflections. When face-to-face supervision was difficult, teachers could use teaching videos, photographs of activities, teaching-practice notes, or short recordings as discussion materials. Through this stage, teachers were trained to provide feedback objectively, respectfully, and with a focus on instructional improvement.

The fourth stage involved mentoring, reflection, and evaluation of program outcomes. After the peer-supervision practice, the teachers and implementation team held a reflection forum to discuss their experiences, challenges, and perceived changes during the program. Evaluation focused on improvements in teachers' understanding, their ability to use supervision instruments, the quality of the feedback provided, and their participation in the learning community. The evaluation results were used to refine the practical E-Peer Supervision guide so that the madrasahs could use it independently after the program ended.

The fifth stage focused on follow-up and program sustainability. At this stage, the madrasahs were encouraged to establish or reactivate teacher learning communities as

forums for regularly implementing E-Peer Supervision. Peer-supervision activities could be scheduled periodically through KKG forums, teacher meetings, or internal digital groups within the madrasahs. Through this follow-up, E-Peer Supervision was expected to develop beyond a temporary mentoring activity and become an enduring professional culture within Madrasah Ibtidaiyah.

## Result and Discussion

To assess the improvement in participants' understanding, the implementation team administered a pretest before the program and a posttest after the program was completed. The pretest measured teachers' initial understanding of peer-supervision concepts, principles of constructive feedback, use of observation instruments, use of digital media, and instructional reflection. The posttest was administered to assess changes in teachers' understanding after they had participated in the mentoring program.

**Table 1.** Participants' Pretest and Posttest Results

| Assessed Aspect                            | Mean Pretest | Mean Posttest | Increase |
|--------------------------------------------|--------------|---------------|----------|
| Understanding of peer-supervision concepts | 62           | 86            | 24       |
| Understanding of E-Peer Supervision        | 58           | 84            | 26       |
| Use of observation instruments             | 60           | 83            | 23       |
| Ability to provide constructive feedback   | 61           | 85            | 24       |
| Use of digital media for supervision       | 57           | 82            | 25       |
| Instructional reflection                   | 64           | 87            | 23       |
| Overall mean                               | 60.33        | 84.50         | 24.17    |

Table 1 shows an improvement in participants' understanding after the mentoring program. The participants' mean pretest score was 60.33, while the mean posttest score increased to 84.50, representing a gain of 24.17 points. This improvement indicates that the mentoring program positively affected teachers' understanding of E-Peer Supervision as a digital peer-supervision strategy. The higher posttest scores also indicate that participants understood the materials, practices, and simulations delivered during the program.

Across the assessed aspects, the largest improvement occurred in understanding E-Peer Supervision, which increased from a mean pretest score of 58 to a posttest score of 84. This finding indicates that before the program, most teachers did not have a comprehensive understanding of digital peer supervision. Teachers were more familiar with supervision as a formal appraisal activity conducted by a madrasah principal or supervisor. After the mentoring program, they began to understand that E-Peer Supervision could provide a more flexible, dialogic, and nonjudgmental space for shared learning.

Improvement was also observed in the use of digital media for supervision. Initially, some teachers were not accustomed to using digital media to document and

reflect on supervision. After receiving mentoring, however, participants began to understand that simple media such as Google Forms, Google Drive, and online documents could be used to upload instructional materials, record observation results, store reflections, and provide feedback to peers. A more flexible supervision model can therefore help address the limited time available for face-to-face supervision.

In addition to improving understanding, the program produced changes in teachers' attitudes toward supervision. At the beginning of the program, some participants still viewed supervision as rigid, stressful, and appraisal-oriented. Through discussions and simulations, however, participants began to recognize that peer supervision could help teachers identify instructional strengths and weaknesses more openly. Teachers were not merely the individuals being evaluated; they also became learning partners for other teachers. This shift in perspective was an important outcome because successful peer supervision depends greatly on openness, trust, and teachers' willingness to exchange feedback.

In terms of collaboration, the E-Peer Supervision mentoring program encouraged more intensive professional interaction among teachers from different Madrasah Ibtidaiyah in Klari District. Through discussions, reflection, consultation, and peer feedback, participants gained knowledge not only from the facilitators but also directly from the experiences of other teachers. They shared experiences concerning instructional challenges, classroom-management strategies, the preparation of modules and instructional materials, assessment implementation, the use of instructional media and technology, and efforts to address differences in students' characteristics and learning needs. The mentoring process was therefore not one-way; it developed into a shared learning process in which every teacher served both as a learner and as a source of knowledge for others.

The program also demonstrated that teachers possessed substantial experience, practical knowledge, and examples of good practice derived from their daily teaching activities. However, these experiences had not always been documented, and adequate spaces for sharing them in a structured and sustainable manner were limited. Through the E-Peer Supervision forum, individual experiences could be communicated, discussed, critically examined, and developed into collective knowledge. Teachers who had successfully implemented an instructional strategy could explain its stages, while other teachers could respond, ask questions, or adapt the strategy to the conditions of their own classrooms and madrasahs. This process helped reduce the tendency to work individually and encouraged a culture of openness, mutual assistance, and trust among participants.

These findings are consistent with the concept of a professional learning community, which identifies collaboration, reflective dialogue, collective learning, and the

sharing of practices as important elements of teacher professional development. Vescio et al. (2008) explained that well-developed professional learning communities can positively influence changes in teachers' instructional practices and improve the learning process. Collaboration provides teachers with opportunities to re-examine their instructional practices, gain new perspectives, and develop solutions based on shared experience and knowledge.

E-Peer Supervision mentoring also contributed to creating a relatively safe and equitable space for professional reflection. Within the forum, teachers could discuss instructional difficulties without feeling that they were being judged or that their weaknesses were being sought. The problems raised were treated as shared learning materials rather than as personal shortcomings. This horizontal relationship was important because supervision was no longer perceived merely as an administrative inspection but as a process of providing professional assistance. Collaborative supervision models emphasize the importance of listening, responding, building partnerships, and actively involving teachers in solving instructional problems (Yoserizal et al., 2025).

Through joint reflection, teachers were encouraged to identify the strengths and weaknesses of their instructional practices, analyze the causes of problems, consider alternative solutions, and plan improvements for subsequent lessons. Feedback from peers helped teachers view their instructional practices from different perspectives. Sauri (2022) emphasized that effective teacher professional development generally provides opportunities to collaborate, receive mentoring and feedback, and continuously reflect on instructional practices. Feedback and reflection help teachers make more focused changes to their instructional strategies.

The use of digital media in E-Peer Supervision also expanded opportunities for collaboration across madrasahs. Teachers did not always need to be in the same location to exchange instructional materials, provide responses, discuss instructional cases, or share the results of implementing particular strategies. Materials, teaching modules, instructional media, assessment instruments, and documentation of good practices could be stored and shared for participants to revisit. Technology therefore functioned not only as a means of communication but also as a space for storing and developing shared professional knowledge. Technology-based professional development has the potential to broaden access to collaboration and mentoring, particularly for teachers who face limitations related to time, distance, or opportunities to participate in face-to-face activities.

Cross-madrasah collaboration also allowed participants to recognize that each madrasah had different conditions, resources, student characteristics, and instructional problems. The exchange of experiences encouraged teachers not merely to imitate other

teachers' practices but to select, modify, and adapt those practices to their own classroom contexts. This adaptation process was essential to ensure that the outcomes of the mentoring program did not remain at the level of theoretical understanding but were translated into concrete actions relevant to instructional needs.

In addition to improving individual capabilities, E-Peer Supervision mentoring strengthened professional networks among Madrasah Ibtidaiyah teachers in Klari District. These networks allowed communication, consultation, and cooperation to continue after the mentoring activities had ended. Teachers could contact one another when facing instructional problems, needing examples of instructional materials, seeking feedback on learning media, or wishing to discuss student assessment results. TALIS data indicate that professional development offering collaborative learning opportunities is associated with greater teacher involvement in everyday professional collaboration. Activities such as teacher networking, peer observation, feedback, and mentoring can help strengthen a collaborative culture in educational settings.

Thus, E-Peer Supervision mentoring functioned not only as a short-term teacher competence-development activity but also as a means of building professional learning communities across madrasahs. The sustainability of its benefits can be strengthened through regular meetings, discussions of instructional cases, peer observations, the development of an instructional-resource bank, documentation of good practices, and evaluation of teachers' follow-up actions. When implemented consistently, such collaboration has the potential to foster a culture of lifelong learning among teachers, increase their sense of ownership of professional-development programs, and support gradual and sustainable improvement in instructional quality.

The discussion of the program outcomes shows that E-Peer Supervision can serve as an alternative professional-development strategy for Madrasah Ibtidaiyah teachers that is better suited to field conditions. Conventional supervision has often been constrained by limited time, demanding teaching schedules, and supervision models that remain formal. Digital peer supervision enables the process to be more practical, documented, and continuous. Teachers can provide one another with feedback without always having to wait for a formal supervision schedule established by a madrasah principal or supervisor.

Nevertheless, the implementation of E-Peer Supervision presented several challenges. Teachers did not have equal levels of digital competence. Some participants still required further assistance in using digital platforms, preparing observation notes, and writing instructional reflections systematically. The culture of giving and receiving feedback also needs to be strengthened. In peer supervision, feedback must be delivered objectively, respectfully, and with a focus on instructional improvement rather than personal criticism of teachers.

Overall, the program outcomes show that E-Peer Supervision mentoring positively affected collaboration and professionalism among Madrasah Ibtidaiyah teachers. The increase in posttest scores indicates that participants' understanding improved after the program. The activities also encouraged teachers to engage more openly in discussion, reflect more deeply on instruction, and become more prepared to use digital media for peer supervision. With consistent follow-up, E-Peer Supervision has the potential to become a sustainable teacher-mentoring model implemented through learning communities, KKG forums, and internal madrasah activities.

## **Conclusion**

The E-Peer Supervision mentoring program, which involved 30 teachers from 10 Madrasah Ibtidaiyah in Klari District, demonstrated that digital peer supervision can be an effective strategy for strengthening teacher collaboration and professionalism. Through the program, teachers gained a better understanding of peer-supervision concepts, the use of observation instruments, the delivery of constructive feedback, the use of digital media, and the importance of reflection in improving instructional quality. The pretest and posttest results showed an increase in participants' understanding, from a mean pretest score of 60.33 to a mean posttest score of 84.50. This improvement indicates that the mentoring provided helped teachers understand and apply E-Peer Supervision in a more structured manner.

In addition to improving understanding, the program encouraged the development of a collaborative culture among Madrasah Ibtidaiyah teachers. Teachers no longer viewed supervision solely as a formal appraisal activity but as a process of mutual learning, exchanging feedback, and jointly improving instructional practices. The use of simple digital media, including Google Forms, Google Drive, WhatsApp groups, and online documents, made the supervision process more flexible, documented, and sustainable. E-Peer Supervision therefore has the potential to become a professional-development alternative that is relevant to madrasah needs, particularly for addressing limited time for face-to-face supervision and strengthening the role of learning communities or KKG forums.

Overall, E-Peer Supervision mentoring positively affected teacher professionalism, strengthened cross-madrasah collaborative networks, and promoted reflective instructional habits. However, program sustainability still requires support from madrasah principals, improvement of teachers' digital competence, and a shared commitment to making peer supervision part of the professional work culture. The program should therefore be followed up through regular E-Peer Supervision activities at the madrasah and KKG levels so that its benefits can be experienced more broadly and sustainably.

## References

- Asmawati, Sahidin, Yunarzat, E., Saharuddin, Hamsah, Baso, L., & Nasir. (2026). Optimalisasi kompetensi guru dalam integrasi teknologi pembelajaran melalui professional learning community berbasis sekolah. *Jurnal Ilmu Manajemen Sosial Humaniora*, 8(1), 28–48. <https://doi.org/10.51454/jimsh.v8i1.1454>
- Idris, M., Patimah, S., Warisno, A., & Hidayati, N. (2025). Implementasi supervisi akademik berbasis teknologi digital dalam meningkatkan kompetensi profesional guru di era Society 5.0. *Edusociata Jurnal Pendidikan Sosiologi*, 8(2), 28–38.
- Masae, M., Likia, N., Fatika Adelia Putri, Zahrudin, & Asy'ar, H. (2025). Analisis efektivitas peer coaching dan clinical supervision terhadap peningkatan kompetensi profesional guru dalam konteks pembelajaran blended. *Journal of Artificial Intelligence and Digital Business (RIGGS)*, 4(4), 6876–6881.
- Mauidhoh, H., & Syarif, A. (2025). Membumikan nilai-nilai Islam: Peran guru Madrasah Diniyah Ulya dalam mewujudkan karakter religius peserta didik. *Aslama: Jurnal Pendidikan Islam*, 2(2), 1–13.
- Mustofa, M., & Bishri, M. H. (2026). Menjadi guru agama profesional dengan tantangan dan strategi di era modern. *JEMARI: Jurnal Edukasi Madrasah Ibtidaiyah*, 8(1), 32–42.
- Nur, F., Fajrin, R., Ilham, R., Pratama, S., & Khoiriah, S. (2025). Model supervisi kolaboratif sebagai strategi pengembangan profesional guru: Studi literatur kritis. *Jurnal Manajemen dan Ilmu Administrasi*, 1(1), 48–55.
- Sauri, R. S., Rahayu, Y. N., & Arifudin, O. (2022). Upaya meningkatkan kompetensi profesional guru melalui supervisi klinis kepala sekolah. *JlIP (Jurnal Ilmiah Ilmu Pendidikan)*, 5, 4524–4529.
- Subadri, Raharjo, T. J., & Harianingsih. (2025). Transformasi supervisi akademik melalui pendekatan coaching: Studi korelasional kepemimpinan instruksional kepala sekolah dan kualitas pembelajaran guru di sekolah dasar. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(1), 301–314.
- Syukur, M., & Sutanti, D. (2026). Inovasi digital dalam manajemen mutu terpadu profesionalisme guru pendidikan agama Islam. *Jurnal Pendidikan Guru Madrasah Ibtidaiyah*, 7(1), 313–324.
- Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education*, 24(1), 80–91. <https://doi.org/10.1016/j.tate.2007.01.004>
- Wibowo, A., Sri, E., Herawati, B., & Wijayanti, W. (2025). Langkah strategis perencanaan supervisi pendidikan berbasis kolaborasi. *Jurnal Akuntabilitas Manajemen Pendidikan*,

13(1), 39–52.

- Wulandari, R. I., Nasution, A. T., & Rizky, V. B. (2023). The role of school principal in overcoming teachers' obstacles to develop the independent curriculum in an elementary school. *Al-Bidayah: Jurnal Pendidikan Dasar Islam*, 15(2), 326–356. <https://doi.org/10.14421/al-bidayah.v15i2.1041>
- Yoserizal, Jaya, I., Erlina, Marlinda, Marsidin, S., Rifma, & Sulastri. (2025). Strategi supervisi SDM untuk meningkatkan profesionalisme guru PGSD di. *Journal of Educational Administration and Leadership*, 5(1), 42–50. <https://doi.org/10.24036/jeal.v5i1>
- Zahiq, M., & Kusuma, A. W. (2025). Strategi supervisi akademik integratif pengembangan profesionalisme guru kepala madrasah untuk. *At Tadbir: Islamic Education Management Journal*, 3(2), 169–183.