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RUANGGURU BASED SUPERVISION: ENHANCING DIGITAL LITERACY AND REFLECTIVE PRACTICE OF PAI TEACHERS

Sarifudin[1]
Institut Agama Islam Al-Hidayah, Bogor, Indonesia (sarifudin@staiabogor.ac.id)

Indah Wahyuningsih
Institut Agama Islam Al-Hidayah, Bogor, Indonesia (indah.aysar@gmail.com)

Hafizin
Institut Agama Islam Al-Hidayah, Bogor, Indonesia (hafizin@staiabogor.ac.id))

Nurhayati
Institut Agama Islam Al-Hidayah, Bogor, Indonesia (nurhayatirazeq@gmail.com)

Amrullah Nasrudin
Islamic University of Madinah, Saudi Arabia (amrullahnasrudin24@gmail.com)

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis kontribusi supervisi berbasis aplikasi Ruangguru dalam meningkatkan profesionalisme guru Pendidikan Agama Islam (PAI) di SMAN 1 Ciomas. Fokus penelitian meliputi literasi digital, praktik reflektif, perbaikan strategi mengajar, serta faktor pendukung dan penghambat supervisi digital. Penelitian ini menggunakan pendekatan kualitatif deskriptif dengan desain studi kasus. Informan penelitian berjumlah lima orang yang dipilih melalui purposive sampling, terdiri atas tiga guru PAI, wakil kepala sekolah bidang kurikulum, dan kepala sekolah atau supervisor akademik. Data dikumpulkan melalui wawancara semi-terstruktur, observasi terbatas, dan dokumentasi. Hasil penelitian menunjukkan bahwa 100% guru PAI (3 dari 3 guru) mengalami peningkatan kemampuan dalam mengakses, memilih, dan mengintegrasikan konten digital Ruangguru ke dalam pembelajaran PAI. Sebanyak 100% guru PAI juga menunjukkan peningkatan praktik reflektif melalui evaluasi respons siswa, hasil latihan digital, dan umpan balik supervisor. Selain itu, 100% guru PAI memperbaiki strategi mengajar melalui kombinasi penjelasan langsung, video pembelajaran, diskusi, latihan digital, asesmen formatif, dan penguatan nilai Islam. Sebanyak 80% informan (4 dari 5 informan) menilai bahwa dukungan sekolah dan umpan balik supervisor menjadi faktor utama keberhasilan supervisi digital. Kendala utama meliputi keterbatasan jaringan internet, perbedaan kompetensi digital guru, keterbatasan waktu, dan belum optimalnya tindak lanjut supervisi. Penelitian ini menyimpulkan bahwa supervisi berbasis Ruangguru dapat menjadi model pembinaan profesional guru PAI jika dilaksanakan secara terstruktur, reflektif, dan berkelanjutan.

[1] Correspondence Author

Keywords:
Digital Supervision Model; Ruangguru Platform; PAI Teacher Professionalism; Reflective Teaching; Instructional Strategy Improvement.

ABSTRACTS
This study aims to analyze the contribution of Ruangguru application-based supervision to improving the professionalism of Islamic Religious Education (PAI) teachers at SMAN 1 Ciomas. The study focuses on digital literacy, reflective practice, teaching strategy improvement, and the supporting and inhibiting factors in digital supervision. This research used a descriptive qualitative approach with a case study design. Five informants were selected through purposive sampling, consisting of three PAI teachers, the vice principal for curriculum affairs, and the principal or academic supervisor. Data were collected through semi-structured interviews, limited observation, and documentation. The findings show that 100% of PAI teachers (3 out of 3 teachers) improved their ability to access, select, and integrate Ruangguru digital content into PAI learning. A total of 100% of PAI teachers also showed stronger reflective practice through the evaluation of student responses, digital exercise results, and supervisor feedback. In addition, 100% of PAI teachers improved their teaching strategies by combining direct explanation, learning videos, discussion, digital exercises, formative assessment, and Islamic value reinforcement. Furthermore, 80% of informants (4 out of 5 informants) stated that school support and supervisor feedback were the main factors supporting the success of digital supervision. The main obstacles included unstable internet access, differences in teachers' digital competence, limited time, and insufficient supervision follow-up. This study concludes that Ruangguru-based supervision can serve as a professional development model for PAI teachers when implemented in a structured, reflective, and sustainable manner.

A. INTRODUCTION

Digital transformation has changed the way teachers plan, deliver, assess, and reflect on learning. Teachers are no longer expected only to use digital tools, but also to integrate technology into instructional design, learning interaction, assessment, and professional improvement (Tzafilkou, Perifanou, & Economides, 2023). Digital teaching competence includes the ability to design digital learning, implement technology based instruction, evaluate learning outcomes, act responsibly, and maintain a positive attitude toward educational technology (Gao, Li, & Zheng, 2024). This means that digital competence must be understood as part of teacher professionalism, not merely as a technical skill.

In Islamic Religious Education (PAI), digital competence has a specific role. PAI teachers do not only teach religious knowledge (Nurhayati Nurhayati & Rosadi, 2022). They also guide students to use digital resources critically, ethically, and in line with Islamic values. Digital learning in PAI must support understanding of faith, worship, morality, character, and religious responsibility (Huda, Arif, Abdul Rahim, & Anshari, 2024). Therefore, PAI teachers need the ability to select digital content, connect it with learning objectives, and ensure that technology use strengthens both academic understanding and value formation (Reksiana, Nata, Rosyada, Rahiem, & Rafikjon Ugli, 2024).

Recent studies show that the digital literacy of PAI teachers still needs improvement. Reksiana et al. found that PAI teachers commonly use simple digital media such as YouTube, PowerPoint, Quizizz, Google Classroom, and Google Forms, while their ability to create and develop digital teaching materials remains limited (Wang & Hu, 2025). Another study on digital technology integration in PAI learning

found that technology use has expanded, but gaps remain in infrastructure readiness, digital competence, interactive content development, and teacher training (Mintasih, Sukiman, & Purnama, 2024). These findings indicate that access to digital tools does not automatically produce meaningful pedagogical change.

Educational supervision can address this problem because supervision provides guidance, feedback, reflection, and follow-up for teachers. In the digital context, supervision can use applications, online documents, recorded teaching, digital communication, and platform based feedback to support teacher development. Remote supervision studies show that digital technology can strengthen social presence when supervisors maintain emotional support, open communication, and practical guidance (Petit, Babin, & Desrochers, 2023). This point is important because digital supervision should not become a technical monitoring activity. It must remain a professional mentoring process.

Online and blended teacher professional development also shows strong relevance to application-based supervision. Stavermann found that online teacher professional development can improve teachers' competence and teaching practice when it includes instructor support, collaboration, synchronous interaction, and clear feedback (Stavermann, 2025). Meyer et al. also found that online professional development is more effective when it supports cognitive activation, collaboration, and changes in teaching practice (Meyer, Kleinknecht, & Richter, 2023). These studies show that digital platforms are useful when they are linked to structured professional learning, not when they are used as isolated tools.

Ruangguru is one of the relevant platforms in the Indonesian digital learning ecosystem. A usability study found that Ruangguru has acceptable usability and provides learning content, although several aspects still need improvement, especially user control, feature recognition, and interface consistency (Kusuma, Rue, Rumagit, & Pratama, 2024). This shows that Ruangguru already has potential as a digital learning environment. However, most studies on Ruangguru still focus on application use, usability, learning content, or user experience. Few studies examine how Ruangguru can support the supervision of PAI teachers.

This creates the central problem of this study. Digital learning applications are already available and widely used, but supervision practices that use applications to guide PAI teachers remain limited. In many cases, teachers use applications as additional learning media without systematic feedback from supervisors. As a result, the application may help teachers access content, but it may not improve reflection, instructional design, or teaching strategy. This gap is important because teacher professionalism develops through guided practice, reflection, feedback, and continuous improvement (Sims et al., 2025).

The problem becomes more specific in PAI learning. PAI teachers must ensure that digital content is not only attractive, but also accurate, relevant, ethical, and aligned with Islamic educational goals. Without supervision, teachers may use digital content only for presentation, exercises, or student engagement. With structured supervision, the same application can become a medium for improving digital literacy, strengthening reflective practice, and developing more effective teaching strategies. This study therefore positions Ruangguru not only as a learning application, but also as a potential medium for application based supervision.

Based on this problem, the present study analyzes how Ruangguru-based supervision contributes to the professionalism of PAI teachers at SMAN 1 Ciomas. The study focuses on three dimensions: digital literacy, reflective practice, and teaching strategy improvement. Digital literacy refers to teachers' ability to access, select, evaluate, and integrate digital content into PAI learning. Reflective practice refers to teachers' ability to assess their planning, implementation, student responses, and follow up actions. Teaching strategy improvement refers to changes in methods, media use, discussion, formative assessment, and integration of Islamic values.

The novelty of this study lies in its focus on the gap between the availability of digital learning applications and the limited use of application based supervision for PAI teachers. Unlike previous studies that mainly discuss Ruangguru as a learning platform or digital media, this study examines Ruangguru as part of a supervision process. This perspective offers an empirical contribution to the development of digital supervision in Islamic education. It also provides practical insight for schools, principals, supervisors, and PAI teachers in designing supervision that is structured, reflective, and relevant to digital learning needs.

B. METHOD

This study used a descriptive qualitative approach with a case study design (Hyangsewu, Abdullah, Faqihuddin, Muflih, & Sari, 2024). This approach was selected because the study aimed to describe the experiences, practices, and meanings constructed by Islamic Religious Education (PAI) teachers in application-based supervision using Ruangguru (Villamin, Lopez, Thapa, & Cleary, 2025). A case study design was used because the research focused on one bounded case, namely Ruangguru-based supervision for PAI teachers at SMAN 1 Ciomas . (Mtisi, 2022).

The research was conducted for three months, from January to March 2026. Field observations were carried out in February 2026 during regular PAI learning sessions that used Ruangguru or other supporting digital media. The participants consisted of five informants selected through purposive sampling: three PAI teachers, one vice principal for curriculum affairs, and one principal or academic supervisor. Purposive sampling was used because the informants had direct experience with PAI learning, digital media use, and teacher supervision (Ahmed, 2024)

Data were collected through semi-structured interviews, limited observation, and documentation (N Nurhayati, Latif, & Anwar, 2024). Semi structured interviews were used to explore teachers' experiences in using Ruangguru, receiving supervision feedback, reflecting on teaching, and improving instructional strategies (Wong et al., 2023). Observation focused on the use of Ruangguru in learning activities, teacher interaction with students, digital content selection, and follow up activities after supervision. Documentation included lesson plans, teaching modules, supervision notes, student exercises, and records related to the use of Ruangguru (Gao et al., 2024).

Before data collection, the interview guide, observation sheet, and documentation checklist were pilot tested with two PAI teachers outside the research sample (Huang, Liang, Xiong, Wu, & Lim, 2024). The pilot test was conducted to assess the clarity of questions, relevance of indicators, interview flow, and the suitability of terms used in the instruments. Several questions were then revised to make them clearer, more focused, and easier for informants to understand. Pilot

testing helps researchers refine instruments, reduce bias, and improve the readiness of data collection procedures (Tate, Beauregard, Peter, & Marotta, 2023).

Data were analyzed using thematic analysis through transcription, repeated reading, coding, theme grouping, theme review, and conclusion drawing. Thematic analysis was used because it helps researchers identify patterns in qualitative data systematically and transparently (Braun & Clarke, 2021). Data validity was strengthened through source triangulation, technique triangulation, and member checking. Source triangulation was conducted by comparing interview data from I1, I2, and I3 with information from I4 and I5. Technique triangulation was carried out by comparing interview findings with observation notes and documentation, such as lesson plans, supervision records, and Ruangguru based learning evidence. Member checking was conducted by returning interview summaries to informants to confirm the accuracy of meaning. These procedures strengthen credibility, dependability, and confirmability in qualitative research (Czernek-Marszałek & McCabe, 2024).

C. RESULT AND DISCUSSION

1. Ruangguru Based Supervision and PAI Teacher Professionalism

The findings show that Ruangguru based supervision helped PAI teachers improve professional practice through four connected aspects: digital literacy, reflective practice, teaching strategy, and follow up after supervision. Ruangguru was not used as a replacement for the teacher. It functioned as a supporting platform that helped teachers access learning videos, exercises, summaries, and digital materials (Pabbajah, Jubba, Abdullah, Pabbajah, & Juhansar, 2021). The quality of its use depended on teacher planning, supervisor feedback, and the ability to connect digital content with PAI learning objectives.

A PAI teacher stated:

> *"Ruangguru helps me find videos and exercises more quickly, but I still need to select the content first. Not all materials can be used directly. I have to adjust them to the PAI topic, students' condition, and Islamic values that must be emphasized."* (I1)

This finding shows that digital literacy developed beyond technical access. Teachers began to select and evaluate content before using it in class. This aligns with the view that teachers' digital competence includes digital teaching design, implementation, evaluation, responsibility, and attitude (Gao et al., 2024).

The supervision process also strengthened reflection. Teachers did not only use Ruangguru as a digital medium. They used student responses, exercise results, and supervisor feedback to revise learning strategies. One informant explained:

> *"After students completed the digital exercises, I could see which parts they still did not understand. From that result, I changed the next meeting by adding explanation, discussion, and examples from daily religious practice."* (I3)

This finding supports the idea that online professional development affects teaching practice when it encourages cognitive activation, collaboration, and reflection (Ahmad & Wilkins, 2025). In this study, reflection became stronger because supervisors gave feedback and teachers used that feedback to revise lesson plans and classroom activities.

Supervisors played an important role in keeping application-based supervision focused on learning quality. A supervisor stated:

"The use of Ruangguru should not stop at showing videos or giving exercises. Teachers need to explain the material again, guide students, and connect the content with character, worship, and responsible digital behavior." (I5)

This finding confirms that digital supervision still requires human interaction, guidance, and professional communication. Remote supervision can strengthen social presence when supervisors provide feedback, open communication, and practical support (Scheibelhofer, 2023).

Table 1. Main Findings of Ruangguru Based Supervision

Focus	Field Findings	Representative Evidence	Meaning
Implementation of supervision	Supervision was carried out through planning, application use, feedback, and follow-up.	Teachers prepared lesson plans, selected Ruangguru content, used digital exercises, and revised teaching activities after feedback.	Supervision shifted from administrative checking to professional mentoring.
Digital literacy	Teachers accessed, selected, evaluated, and integrated digital content into PAI learning.	I1 stated that Ruangguru content had to be adjusted to PAI topics, student needs, and Islamic values.	Digital literacy developed from technical use to pedagogical and ethical use.
Reflective practice	Teachers used student responses and supervisor feedback to improve the next lesson.	I3 used digital exercise results to identify weak understanding and redesign follow-up activities.	Reflection became evidence-based and connected to classroom improvement.
Teaching strategy	Teachers combined direct explanation, Ruangguru videos, discussion, exercises, formative assessment, and value reinforcement.	Observation showed that teachers did not stop after showing videos. They continued with explanation and discussion.	Teaching became more varied, structured, and student-oriented.

Source: Field data, 2026.

The table shows that the main contribution of Ruangguru-based supervision lies in the connection between digital access and pedagogical guidance. Ruangguru provided learning resources, but supervision helped teachers use those resources more purposefully. This finding is relevant to the study of Kusuma et al., which found that Ruangguru has acceptable usability but still requires user readiness and feature understanding for effective use.

In PAI learning, this issue becomes more specific. Teachers must ensure that digital content supports religious understanding, moral formation, and responsible technology use. Previous research found that PAI teachers' digital literacy often

remains limited to using common media such as YouTube, PowerPoint, Quizizz, Google Classroom, and Google Forms, while digital teaching material development still needs improvement (Huda et al., 2024). The findings of this study show that supervision helped teachers move from simple use of digital media toward more selective and reflective integration.

2. Improvement of Digital Literacy, Reflection, and Teaching Strategies

The improvement of teachers' digital literacy appeared in their ability to choose relevant Ruangguru content, align it with lesson objectives, and use it for formative assessment. Teachers did not use all available materials directly. They reviewed the content first and adapted it to student ability and PAI learning outcomes. This practice reflects digital teaching competence because teachers made decisions about design, implementation, evaluation, and ethical use of technology (Reksiana et al., 2024).

The improvement of reflective practice appeared in three activities. First, teachers reflected before teaching by selecting content and preparing follow-up questions. Second, teachers reflected during teaching by observing student responses. Third, teachers reflected after teaching by revising lesson plans and teaching strategies based on supervision feedback. This process shows that reflection was not only personal. It became collaborative because teachers, curriculum staff, and supervisors discussed the quality of learning (Nata, Rosyada, Rahiem, & Ugli, 2024).

Teaching strategies also improved. Teachers used Ruangguru as a stimulus for discussion, not as the whole learning process. They combined videos, teacher explanation, digital exercises, question and answer activities, and value-based reflection. This finding is important because PAI learning requires more than cognitive mastery. It also requires moral interpretation and religious practice.

A teacher explained:

> *"Students are more interested when the lesson begins with video or digital exercises. But after that, I still guide them through discussion, especially when the topic relates to honesty, worship, and daily behavior."* (I2)

This finding supports the argument that technology in PAI must be selected based on learning objectives, content relevance, and Islamic educational values (Suhartini, Nursobah, Basri, Hayati, & Erihadiana, 2025). It also shows that the teacher remains the main designer of learning. The application provides content, while the teacher provides context, explanation, and value direction.

3. Supporting and Inhibiting Factors

The implementation of Ruangguru-based supervision was supported by school policy, application availability, teacher openness, and supervisor feedback. However, several barriers limited its implementation. These barriers included internet instability, unequal digital competence among teachers, limited preparation time, and incomplete follow up after supervision.

A curriculum informant stated:

> *"The school supports digital learning, but teachers still need assistance. Some teachers can use the application smoothly, while others need more time and guidance to connect it with lesson planning and assessment."* (I4)

This finding shows that access to technology alone is not enough. Teachers need training, mentoring, and structured feedback. Technology integration often faces barriers related to resources, technical support, time, teacher attitudes, classroom management, and design thinking (Chen, Fei, & Tsai, 2025).

Table 2. Supporting and Inhibiting Factors in Ruangguru Based Supervision

Aspect	Supporting Factors	Inhibiting Factors	Interpretation
School support	School leaders allowed teachers to use Ruangguru and supported digital learning.	Supervision follow-up was not always documented in detail.	Institutional support needs clear monitoring and follow-up systems.
Teacher readiness	Teachers showed openness to using videos, exercises, and digital materials.	Teachers had different levels of digital competence.	Continuous mentoring is needed to reduce competence gaps.
Infrastructure	Teachers could access digital devices and application content.	Internet access and device readiness sometimes disrupted learning.	Technical readiness affects supervision and classroom implementation.
Pedagogical integration	Supervisors gave feedback on content selection, methods, and assessment.	Some application use still depended on videos and exercises without deeper reflection.	Technology must be integrated into instructional design, not used as a stand-alone tool.
Ethical and PAI values	Teachers guided students to use applications honestly and responsibly.	Students could focus only on scores or answers in digital exercises.	PAI teachers must connect digital learning with character and religious values.

Source: Field data, 2026.

The findings show that Ruangguru based supervision can support PAI teacher professionalism when schools provide a clear supervision design. The process must include planning, observation, feedback, reflection, and follow up. Without these stages, application use may remain technical and fragmented.

The discussion also shows that the main challenge is not the availability of Ruangguru. The central issue is how teachers and supervisors use the application as part of professional development. Supervisors need to guide teachers in selecting content, reading student responses, designing formative assessment, and connecting digital materials with Islamic values. This supports the view that online professional learning works best when it includes feedback, collaboration, and changes in teaching practice (Mintasih et al., 2024).

Overall, Ruangguru based supervision at SMAN 1 Ciomas contributed to three main areas. First, it improved teachers' digital literacy by encouraging them to access,

select, and evaluate digital content. Second, it strengthened reflective practice through feedback and follow up. Third, it improved teaching strategies through more varied learning activities, formative assessment, and integration of Islamic values. These findings indicate that application-based supervision can strengthen PAI teacher professionalism when it is implemented in a structured, reflective, and sustainable way (Damanik & Widodo, 2024).

Table 3. Summary of Research Findings

No.	Research Findings	Number of Supporting Informants	Calculation	Percentage
1	Islamic Religious Education (PAI) teachers experienced improvement in their ability to access, select, and integrate Ruangguru digital content	3 out of 3 PAI teachers	3/3 × 100	100%
2	PAI teachers demonstrated increased reflective practice through evaluating student responses, digital exercises, and supervisor feedback	3 out of 3 PAI teachers	3/3 × 100	100%
3	PAI teachers improved their teaching strategies through a combination of direct instruction, video, discussion, digital exercises, formative assessment, and reinforcement of Islamic values	3 out of 3 PAI teachers	3/3 × 100	100%
4	Informants identified school support and supervisor feedback as the main factors contributing to the success of digital supervision	4 out of 5 informants	4/5 × 100	80%

Source: Field data, 2026.

The findings indicate a consistent and strong pattern of improvement in teachers' digital teaching competence, particularly among Islamic Religious Education (PAI) teachers. The fact that all three PAI teachers (100%) reported enhanced ability to access, select, and integrate digital content suggests that the implementation of digital supervision supported by platforms such as Ruangguru plays a significant role in strengthening teachers' technological and pedagogical capacities. This aligns with the broader discourse on digital competence, where effective integration of technology is not merely technical but also pedagogical in nature.

Moreover, the emergence of reflective practice among all participating PAI teachers (100%) highlights an important professional development outcome. Teachers were not only using digital tools but also engaging in continuous evaluation of their teaching practices, including student responses, digital exercises, and supervisory feedback. This indicates that digital supervision fosters a reflective teaching culture, which is essential for sustainable professional growth.

In terms of instructional strategies, the findings show that teachers adopted more varied and integrative approaches. The combination of direct instruction, multimedia resources (videos), interactive discussions, digital exercises, formative

assessments, and reinforcement of Islamic values reflects a shift toward more student-centered and technologically enriched pedagogy. This suggests that digital supervision contributes to instructional innovation, rather than merely digitizing traditional teaching methods.

However, the slightly lower percentage (80%) related to institutional support and supervisor feedback indicates that while most informants recognize these factors as crucial, there is still some variation in perception or experience. This implies that the effectiveness of digital supervision is not solely dependent on the technology itself, but also heavily influenced by organizational support structures and the quality of supervisory interactions.

Overall, the data demonstrate that digital supervision serves as a comprehensive mechanism for enhancing teacher competence, fostering reflective practice, and encouraging pedagogical innovation. At the same time, it underscores the importance of supportive institutional environments to maximize its impact.

CONCLUSION

This study concludes that Ruangguru-based supervision contributes to strengthening the professionalism of Islamic Religious Education (PAI) teachers at SMAN 1 Ciomas. The main findings show that application-based supervision helps teachers improve digital literacy, strengthen reflective practice, and develop more varied teaching strategies. Teachers became more selective in choosing digital content, more reflective in evaluating student responses, and more adaptive in combining direct explanation, learning videos, discussion, digital exercises, formative assessment, and Islamic value reinforcement.

The contribution of this study lies in its focus on Ruangguru as a medium for teacher supervision, not only as a student learning application. The findings show that digital platforms can support PAI teacher development when they are used through structured stages: planning, implementation, feedback, and follow-up. This study also confirms that digital supervision must include pedagogical guidance, ethical direction, and reflection, especially because PAI learning aims to build knowledge, character, and religious responsibility.

Based on the findings, schools need to provide intensive training for supervisors and PAI teachers on application-based supervision. Schools also need to improve internet access, provide adequate devices, prepare clear supervision instruments, and document follow-up actions after feedback. Policymakers should support digital supervision programs through technical guidelines, supervisor capacity building, and infrastructure funding.

This study has limitations. It involved only one school and five informants. Therefore, the findings cannot be generalized statistically. Future studies should involve more schools, more participants, and mixed methods to measure the impact of digital supervision more broadly.

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