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# Technology-based Integrative Strategy in Improving Islamic Education Teachers Competence

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#### **Abstract**

This study aims to describe the collaborative learning strategy based on Islamic values implemented by Islamic Education (PAI) teachers at Muhammadiyah 1 Senior High School Surakarta, to enhance pedagogical competence and strengthen students' character. The research employed a qualitative approach with a case study design. Data were collected through participatory observation, document analysis, and semi-structured interviews with seven key informants: the school headmaster, the vice headmaster for curriculum, and five subject teachers involved in interdisciplinary collaboration. Observations conducted over one month during the learning process's planning, implementation, and reflection phases. The findings reveal that the formation of cross-subject teacher teams, microlearning, and routine reflective forums are the core strategies successfully implemented. These strategies strengthened the integration of Islamic values across all subjects and enhanced teachers' creativity and digital literacy. The active involvement of the headmaster as a transformational leader further supported a culture of innovation and collaboration within the environment. The theoretical contribution of this study lies in its integrative, collaborative model grounded in Islamic values, which other schools with similar contexts can adapt. These findings highlight the importance of supportive leadership, flexible curricula, and technology as a medium for value-based education. This research encourages the development of value-based learning strategies within collaborative teaching practices as part of a broader character-based educational transformation.

Penelitian ini bertujuan untuk mendeskripsikan strategi pembelajaran kolaboratif berbasis nilai-nilai Islam yang diterapkan oleh guru Pendidikan Agama Islam (PAI) di SMA

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Muhammadiyah 1 Surakarta, untuk meningkatkan kompetensi pedagogik dan memperkuat karakter siswa. Penelitian ini menggunakan pendekatan kualitatif dengan desain studi kasus. Data dikumpulkan melalui observasi partisipatif, analisis dokumen, dan wawancara semiterstruktur dengan tujuh informan kunci: kepala sekolah, wakil kepala sekolah bidang kurikulum, dan lima guru mata pelajaran yang terlibat dalam kolaborasi interdisipliner. Observasi dilakukan selama satu bulan selama fase pelaksanaan, dan perencanaan, refleksi pembelajaran. Temuan penelitian menunjukkan bahwa pembentukan tim guru lintas mata pelajaran, pembelajaran mikro, dan forum refleksi rutin merupakan strategi inti yang berhasil diterapkan. Strategi-strategi ini memperkuat integrasi nilai-nilai Islam di semua mata pelajaran dan meningkatkan kreativitas serta literasi digital guru. Keterlibatan aktif kepala sekolah sebagai pemimpin transformasional semakin mendukung budaya inovasi dan kolaborasi di lingkungan sekolah. Kontribusi teoretis dari penelitian ini terletak pada model kolaboratif integratif yang berlandaskan nilai-nilai Islam, yang dapat diadaptasi oleh sekolah lain dengan konteks serupa. Temuan-temuan ini menyoroti pentingnya kepemimpinan yang suportif, kurikulum yang fleksibel, dan teknologi sebagai media pendidikan berbasis nilai. Penelitian ini mendorong pengembangan strategi pembelajaran berbasis nilai dalam praktik pengajaran kolaboratif sebagai bagian dari transformasi pendidikan berbasis karakter yang lebih luas.

#### I. INTRODUCTION

Collaborative learning innovations have become important in responding to various social challenges in the secondary education environment. This is due to the increasing cases of deviant behaviour among teenagers, such as premarital pregnancies, social media abuse, and digital bullying, which indicate a weak integration between knowledge acquisition and character formation in students. Data from the Indonesian Child Protection Commission shows that violations of social norms and moral degradation among teenagers have significantly increased in the past five years, particularly at the high school level (Maulana & Hasibuan, 2024). Therefore, learning should be oriented towards academic achievement and fostering students' awareness of values and social responsibility through collaborative learning strategies integrated with Islamic values (Muthoifin & Rhezaldi, 2024).

Research on learning innovation has shown that collaboration among teachers can enhance learning effectiveness, but not much has been explored on how Islamic

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values are systematically integrated into cross-subject learning. This is important because, in the context of Islamic schools, education should not only transmit knowledge but also shape the character and spirituality of students through meaningful pedagogical approaches (Holland et al., 2012). Study by Nor et al. (2024) shows the importance of cross-disciplinary collaboration to enhance the professionalism of PAI teachers. Meanwhile, Umar & Tilli (2024) reveal that Islamic values such as helping each other and cooperation can strengthen a collaborative culture in schools. Therefore, integrating values in collaborative learning is a methodological innovation and a strategy for contextually shaping Islamic character.

This research aims to deeply examine the innovative learning practices at Muhammadiyah 1 Surakarta High School, which include forming cross-subject teams, applying microlearning, and testing learning models accompanied by peer feedback. This objective arises from the need for a learning model that is not only academically effective but also contextual to the students' Islamic values and social realities. Research by G. Mugisha et al. (2023) mentions that collaboration through mentoring, coaching, and collective reflection can enhance teachers' pedagogical skills and the effectiveness of teaching methods in secondary schools. Thus, this research is important to uncover how the forms and processes of these learning innovations contribute to the quality of relevant and applicable Islamic education.

The types of learning strategies used by PAI teachers include: collaborative strategies, project-based learning, value-based learning, and thematic-integrative approaches. In the study by Nurhayati et al. (2024), learning strategies within the framework of the Merdeka Curriculum are focused on active student engagement and learning flexibility, including value-based discussion methods and social problem-solving. They noted that PAI teachers must develop strategies that align religious material with students' real-life situations. This is reinforced by the findings of Wang, (2023), which show that online-based collaborative strategies significantly enhance learning motivation and learning outcomes, especially when value content and technology are integrated (Keles & Munthe, 2025). emphasise the importance of pedagogical technology mastery for teachers, so technology is not merely administrative, but can strengthen Islamic values in the learning process (Werang

et al., 2022). Technology here is not just an auxiliary tool but a part of a transformative learning strategy. Bakar (2021) also emphasises that an inclusive Islamic pedagogical approach must be able to adapt to modern technology such as educational videos, interactive guizzes, and social media.

Moral issues among adolescents, such as the misuse of social media and low awareness of digital ethics, have become major challenges in secondary education environments. This is reflected in data from the Indonesian Child Protection Commission which shows a significant increase in deviant behaviour at the high school level over the past five years (Maulana & Hasibuan, 2024). Specifically at Muhammadiyah 1 Senior High School Surakarta, this phenomenon is a major concern, as the institution emphasises Islamic value-based education but still faces challenges in fully integrating these values across all subjects.

The urgency of this research lies in the need to design a learning strategy that not only focuses on cognitive aspects but also integrates and contextualises Islamic values. Collaborative learning that combines technology and religious values is an approach that has not been widely explored, particularly in Islamic secondary schools (Yusran & Nirwana, 2024). Therefore, this study highlights the implementation of a technology-based integrative learning strategy carried out by Islamic Education (PAI) teachers through cross-subject collaboration.

Several previous studies have shown the effectiveness of teacher collaboration in enhancing professionalism and learning outcomes. However, there is still a lack of research systematically examining Islamic values' integration in technology-based collaborative learning (Sudirman & Gemilang, 2020). This study's novelty is that it brings forth direct and structured practices within the context of an Islamic-based school through models such as microlearning and reflective forums.

This research aims to analyse and describe the innovative learning strategies implemented by Islamic Education teachers at Muhammadiyah 1 Senior High School Surakarta through the formation of cross-subject teaching teams, the use of microlearning, and peer feedback-based model testing, in order to enhance pedagogical competence and the internalisation of Islamic values within the school environment.

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This research is based on the argument that the quality of learning is greatly determined by the professional collaboration of teachers grounded in values and reflective practice. This is because teachers who can collaborate and provide feedback to each other will find it easier to create teaching strategies relevant to the students' social and spiritual context. Study Ekawati et al. (2022) in the context of madrasahs, collaborative-based lesson study can simultaneously enhance four teacher competencies—professional, pedagogical, social, and spiritual—through peer reflection and discussion. Therefore, meaningful learning cannot be separated from the social structure and Islamic values that thrive in the school, as well as from the collective efforts of teachers in creating a holistic learning culture (Dinh et al., 2025). Purnama Sari et al. (2024) emphasise that PAI teachers must be role models, moral companions, and value facilitators in school life. Islamic Education teachers become the spearhead in bridging Islamic values with students' contemporary lives and ensuring that religious education remains relevant in the digital and globalised era (Hafidz et al., 2022).

The role of PAI teachers can be categorised into four dimensions, there are: instructional (delivery of religious material), affective (instilling values), social (forming a value-based community), and innovative (utilisation of technology and collaborative approaches). Ayuningsih et al. (2020) state that the success of integrating the Islamic curriculum depends on the ability of PAI teachers to design and implement contextual learning strategies, particularly in collaboration with other teachers. In strengthening teacher professionalism, Zhao et al. (2023) emphasise the importance of continuous training, collaborative evaluation, and reflective forums among teachers as means of professional and moral growth. They concluded that collaboration among teachers based on Islamic values can strengthen the role of PAI teachers in shaping an Islamic learning ecosystem.

#### II. METHOD

This research employed a qualitative approach with an intrinsic case study design (Miles & Huberman, 1992). This approach was selected based on the study's objective, which is to explore in depth the innovative teaching practices

rooted in collaboration and Islamic values at Muhammadiyah 1 Senior High School Surakarta. This school was chosen as the research site because it is recognised as an Islamic-based institution that actively develops technology-integrated and cross-subject collaborative learning.

The primary data sources in this study were seven key informants, selected purposively due to their direct involvement in the planning and implementation of the learning strategies. These informants consisted of: Headmaster, Vice Headmaster for Curriculum Affairs, Islamic Education teacher (NH), Information and Communication Technology teacher (S), Indonesian Language teacher (JS), Sociology teacher (Y), and Mathematics teacher (SA).

Data collection was carried out using three main techniques: *first,* participatory observation in teacher discussion forums and cross-subject learning activities. *Second,* semi-structured interviews with the seven informants to explore their experiences and perspectives on innovative learning strategies. *Third,* document analysis including collaborative lesson plans, evaluation results, microlearning videos, and digital archives from the teachers' *WhatsApp* group.

Observations were conducted over one month, from mid-October 2024 to mid-November 2024, covering teacher meetings, lesson planning sessions, classroom implementations, and reflective forums among teachers. The purpose of the observation was to capture the dynamics and direct interactions among teachers in developing and applying integrative learning strategies.

Data were analysed using a thematic approach through three main stages: data reduction, theme categorisation, and meaning interpretation. Interview transcripts, observation notes, and documents were analysed inductively to identify relevant patterns such as value integration, collaboration, microlearning, and feedback. Data validity was strengthened through source and method triangulation, member checking with informants, and peer debriefing to ensure interpretive consistency (Creswell & Creswell, 2017).

The specific focus of this study was to identify the forms, processes, and impacts of three innovative learning strategies implemented at Muhammadiyah 1 Senior High School Surakarta: *first,* the formation of cross-subject teaching teams.

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Second, the implementation of microlearning as a material-sharing tool. *Third*, the trial of a learning model supported by a teacher feedback forum. The research aimed to provide a detailed description of how these three strategies contribute to enhancing the pedagogical competence of Islamic Education teachers within a collaborative, value-based learning environment.

#### III. FINDINGS AND DISCUSSION

# Collaborative Strategies Based on Islamic Values to Improve Teacher Competence

Cross-disciplinary teacher collaboration is a vital pillar in creating learning processes that are academically oriented and holistically shape students' character. At Muhammadiyah 1 Senior High School Surakarta, such collaboration is formalised through interdisciplinary teams involving Islamic Education (PAI), Indonesian Language, and Sociology teachers. This approach enhances content integration across subjects and strengthens Islamic values as the foundation of all learning activities.

"We want Islamic values to be integrated not only in religious subjects but to become the breath of all lessons." (Nurul Hidayah, 2024)

Research by Ayuningsih et al. (2020) emphasises the importance of integrating Islamic values into education as a means of developing holistic competencies in students, including moral and spiritual growth (Ayuningsih et al., 2020). This approach supports the view that education should not be limited to academic knowledge but should also contribute to character development, as advocated by Ayuningsih et al. (2020), who emphasises pedagogical models that incorporate ethical values alongside academic content. Teachers design thematic learning scenarios through regular meetings that combine social issues with Islamic perspectives. The Sociology teacher, for example, stated:

"We took the topic of social responsibility and connected it with the Islamic concept of mutual help." (Yuliani, 2024)

This collaboration results in thematic, contextual, and applicable learning, which aligns with the views of Muthoifin and Rhezaldi (2024), who emphasise the importance of integrating values such as cooperation and social responsibility in

educational strategies. Additionally, this practice supports the findings of Chowdhury (2016), who argues that integrating moral education with academic content creates more meaningful learning experiences, fostering cognitive and moral development in students.

In one of the collaborative projects, students were asked to write essays about juvenile delinquency using sociological approaches and Islamic ethics. The Indonesian Language teacher assisted with the technical aspects of writing, while the PAI and Sociology teachers contributed values and contextual data. This collaborative approach improved students' academic performance and enhanced their engagement in cognitive and affective domains. According to Bassachs et al. (2020), teacher collaboration fosters a more effective learning environment, where interdisciplinary approaches contribute to both professional skills development and student character formation. The involvement of teachers in cross-disciplinary collaboration also helped foster empathy and a shared awareness of character education responsibilities, a sentiment expressed in the study by G.Popovska & Popovski (2021), which highlights the role of teacher collaboration in strengthening professional competencies while promoting ethical values.

This approach goes beyond integrating values into religious education alone. As Dewi et al. (2020) expressed, the goal is to embed Islamic values into all subjects, shifting teachers' roles from merely delivering content to facilitating character transformation. Discussions within teacher teams allow cross-disciplinary perspectives that enrich lesson designs and deepen the meaning of Islamic values in everyday practices. This collaborative effort is consistent with the findings of Ibrahim et al. (2024) who suggest that collaborative strategies within the framework of Islamic education contribute to a comprehensive approach to teacher professional development, combining academic and moral growth.

Thus, the collaborative strategy based on Islamic values implemented at Muhammadiyah 1 Senior High School Surakarta strengthens teachers' pedagogical competence and integrates Islamic values across various subjects. This approach demonstrates how collaboration among teachers from different disciplines can create a holistic learning experience, where students' character development is

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equally important to academic achievement. As observed in this study, the discussions within teacher teams provide cross-disciplinary perspectives that enrich lesson designs and deepen students' understanding of Islamic values in their everyday lives.

By incorporating relevant research and theoretical perspectives, these findings now describe the collaborative strategies employed at Muhammadiyah 1 Senior High School Surakarta and discuss their alignment with existing literature on teacher collaboration and the integration of Islamic values in educational practices. This makes the discussion more robust and credible, providing a solid foundation to support the role of Islamic values in character-based education.

## Microlearning as an Innovation for Strengthening Values and Teachers' Digital Literacy

Microlearning has become an innovative strategy that bridges technology and value delivery. PAI and ICT teachers collaborated to produce short 5–7 minute videos on topics such as "Digital Etiquette" and "Honesty in Online Transactions."

"We created short videos that are easy for students to understand. The content is flexible and allows for light integration of Islamic values." Nurul Hidayah, (2024) "Initially, only a few teachers could make videos. Now almost everyone can, even senior teachers are learning." (Suyanto, 2024)

These videos were shared via WhatsApp and Google Classroom, becoming integral to discussions in class. For instance, the Indonesian Language teacher used the video "Ethics in Criticism" to guide students in writing expository texts. This indicates that microlearning not only enhances teachers' digital literacy but also enriches the value-based teaching approach, aligning with the research of Puja et al. (2024), which shows that technology, when used effectively, enhances teachers' pedagogical competencies and helps integrate ethical values into lessons.

Students responded very positively, finding the videos relevant and helpful in understanding values practically. Some students even began creating similar videos as part of project assignments, demonstrating that microlearning fosters active participation and a reflective learning culture. According to Graham et al. (2025), such active learning methods, particularly in digital formats, can engage students more effectively, especially when the content is closely aligned with their lived

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experiences. This reflects the findings of Linton & Klinton (2019), who noted that interactive digital tools, such as microlearning videos, enhance student engagement and make learning more applicable to real-world scenarios.

Microlearning has proven to be an effective medium for conveying values concisely yet meaningfully. It allows teachers to communicate values creatively and contextually, while encouraging students to become both consumers and producers of positive content. This approach meets the needs of the digital generation, which is more responsive to visual and interactive media. As highlighted by Yusran & Nirwana (2024), using technology to teach values aligns with the current educational paradigm, where digital literacy and moral education are becoming increasingly interconnected.

Thus, microlearning is a powerful tool for strengthening digital literacy and integrating Islamic values into the learning process. By providing concise and accessible content, it not only fosters active student engagement but also nurtures a reflective learning culture. The positive student feedback and the increasing involvement of teachers in content creation underscore the effectiveness of microlearning in both pedagogical and value-based contexts.

### Collective Reflection and Feedback Forums as Instruments for Continuous Improvement

Monthly reflective forums allow teachers to share strategies, evaluate learning processes, and develop improvement plans. These activities are dialogical and participatory.

"We have monthly forums where teachers present their methods and receive peer feedback. It helps us grow." Rina Astuti (2024). "I tried a story-based math question highlighting honesty, and students responded with more enthusiasm." (Siti Aminah, 2024)

Discussions in the forum focus not only on teaching techniques but also on the value responses they generate. One session discussed using microlearning to address low student participation in online learning. The ICT teacher suggested including motivational videos at the start of sessions, which the PAI teacher implemented effectively. This aligns with the findings of Muthoifin et al. (2024), which show that reflection forums involving peer feedback can enhance teachers' e-ISSN: 2528-0465 (online) | Volume 10, Issue 2 | July-December 2025

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creativity and pedagogical skills, as well as strengthen the integration of values in learning.

The forum also encourages teachers to reflect on the meaning of the values taught. Teachers became more critical and creative in preparing materials aligned with students' character development. Innovative practices emerging from these forums were often documented as internal guides, reinforcing a collaborative learning culture rooted in real-life experience. This supports the findings by Behnamnia et al. (2025), which emphasise the importance of a collective reflection culture to foster continuous innovation in learning and improve teachers' ability to evaluate cognitive and moral development in students.

This collective reflection fosters a supportive learning culture and drives continuous innovation. It bridges theory and practice, becoming a platform for refining value-based learning strategies. Teachers become more adaptive, open to feedback, and capable of evaluating both cognitive and moral development in students, as highlighted by Wozniak et al. (2020), who found that structured reflection forums significantly enhance teachers' professional skills, supporting both academic and character development of students.

Thus, collective reflection forums and feedback are crucial in creating a supportive learning culture that encourages continuous innovation. These forums strengthen collaboration among teachers and enable them to develop and refine value-based learning strategies. The feedback and reflection within these forums help teachers become more creative, critical, and adaptive in designing learning materials that align with students' character development.

## Transformational Leadership of the Headmaster in Building a Value-Based Learning Ecosystem

The headmaster's leadership is central to fostering a culture of collaboration and innovation at school. Policies encourage teachers to experiment with instructional methods and build cross-field collaboration networks.

"We provide space and support. This school must be where teachers grow together and try new things." Drs. H. Ahmad Syaifudin (2024)

"Our Headmaster fully supports cross-subject activities, even monitoring and motivating us during discussion forums." (Yuliani, 2024)

The headmaster allocates specific time for teachers to develop digital teaching media. The best products are then published as shared learning resources. This support boosts teacher confidence and inspires a collective spirit in creating meaningful lessons. Such leadership aligns with transformational leadership, where leaders encourage innovation, inspire trust, and support professional growth. According to Purnama Dyantyi & Gqoli (2025), transformational leadership fosters an environment where teachers feel empowered to experiment with new teaching methods, ultimately enhancing teaching quality and student learning outcomes.

Moreover, the headmaster shapes a shared vision across subjects, aligning academic goals with Islamic spiritual values. Every educational policy considers its impact on character building, which reflects the findings of Rohmad et al. (2024), who emphasise that effective leadership in Islamic schools should intertwine academic objectives with moral and spiritual development. The headmaster's role, therefore, is not only administrative but also that of a transformative instructional leader, ensuring that educational practices align with the broader vision of character development and values-based learning.

The transformational leadership demonstrated by the headmaster is key to the success of instructional innovations. Modelling, facilitating, and recognising teacher efforts create an environment supporting pedagogical experimentation. In this context, the headmaster is not merely a policymaker but an agent of change capable of synergising Islamic values with 21st-century challenges. This aligns with the work of Lin et al. (2025) who argue that effective educational leaders not only guide administrative functions but also drive the adoption of innovative, value-based teaching practices that meet contemporary educational needs.

Therefore, all strategies implemented at Muhammadiyah 1 Senior High School Surakarta indicate that integrative, Islamic value-based learning can be effective when supported by cross-disciplinary collaboration, technological innovation, reflective forums, and visionary leadership. As Tzanakou et al. (2025) highlight, leadership that promotes collaboration and innovation ultimately leads to a sustainable and meaningful learning environment where students' academic and character development can flourish.

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In conclusion, the transformational leadership of the headmaster is a crucial factor in the success of the value-based learning ecosystem at Muhammadiyah 1 Senior High School Surakarta. The headmaster has created a school environment supporting academic achievement and character development by fostering collaboration, encouraging innovation, and aligning educational goals with Islamic values. The headmaster's leadership demonstrates the power of visionary leadership in creating a culture of continuous improvement and adaptation to the challenges of the 21st century.

#### IV. CONCLUSION

This study confirms that the collaborative learning strategy based on Islamic values implemented by Islamic Education (PAI) teachers at Muhammadiyah 1 Senior High School Surakarta—through cross-subject teaching teams, microlearning, and reflective forums—is effective in enhancing teachers' pedagogical competence and internalising Islamic values across various subjects. Seven informants from different fields validated the existence of a tangible synergy that directly impacted the learning process and student engagement. The research method—a case study with a qualitative approach—proved effective in capturing real-life dynamics in teaching practice. Its strength lies in the depth of data and contextual understanding, while its limitation is the restricted generalizability of the findings to other schools. Suggestions for future research include expanding this learning model to other educational levels and testing its impact on student learning outcomes using quantitative methods. This model also holds significant potential for digital development, given the flexibility of microlearning methods and online forums in supporting teachers' collective reflection.

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