



Developing an Integrated Competency Framework for Madrasah Teachers: Bridging Scientific Literacy and Islamic Pedagogy

Received: 05-12-2025; Revised: 15-12-2025; Accepted: 16-12-2025

Elbina Mamla Saidah *)

STAI Hubbulwathan Duri, Indonesia

E-mail: elbina1987@gmail.com

Azam Ghazali

Sultan Ismail Petra International Islamic College University, Malaysia

E-mail: azamghazali03@gmail.com

Mohd. Rafi Riyawi

STAI Hubbulwathan Duri, Indonesia

E-mail: rafiriyawi@staihw.duri.ac.id

Hamdi Pranata

Institut Sains Quran Syeikh Ibrahim, Indonesia

E-mail: hamdipranata10@gmail.com

**) Corresponding Author*

Abstract: Although the importance of madrasah teachers in bridging the gap between scientific and Islamic pedagogy is on the increase, the gap between the two fields still exists, as there is no well-organized framework of competences that can guide the teachers in their effective integration of the two domains in their classroom activities. This study aims to develop a competency framework for madrasah teachers that integrates scientific knowledge and Islamic pedagogy. Using the ADDIE model, the research was conducted up to the development stage, which included a needs analysis, conceptual design, and expert validation. Data were collected through interviews, observations, and documentation from madrasah teachers in Mandau Subdistrict, Bengkalis Regency, Riau Province. The resulting framework consists of four core components: Pedagogical Competence, Scientific Literacy, Integration of Islamic Pedagogy, and Professionalism & Spiritual Integrity. Expert validation involving five specialists in Islamic education, language, and visual design confirmed the framework's relevance, clarity, and practicality, with validation scores ranging from "Fairly Appropriate" to "Highly Appropriate." This study contributes to the growing discourse on integrated teacher development in Islamic education by offering a framework that balances spiritual values with contemporary educational demands. The framework is expected to serve as a reference for professional training programs in madrasahs and Islamic teacher education institutions.

Abstrak: Meskipun pentingnya peran guru madrasah dalam menjembatani kesenjangan antara pedagogi ilmiah dan pedagogi Islam semakin meningkat, kesenjangan antara kedua bidang tersebut masih tetap ada karena belum tersedianya kerangka kompetensi yang terorganisasi dengan baik untuk membimbing guru dalam mengintegrasikan kedua domain tersebut secara efektif dalam kegiatan pembelajaran di kelas. Penelitian ini bertujuan untuk mengembangkan kerangka kompetensi bagi guru

madrasah yang mengintegrasikan pengetahuan ilmiah dan pedagogi Islam. Dengan menggunakan model ADDIE, penelitian ini dilaksanakan hingga tahap pengembangan, yang mencakup analisis kebutuhan, perancangan konseptual, dan validasi ahli. Data dikumpulkan melalui wawancara, observasi, dan dokumentasi dari guru-guru madrasah di Kecamatan Mandau, Kabupaten Bengkalis, Provinsi Riau. Kerangka kompetensi yang dihasilkan terdiri dari empat komponen inti, yaitu: Kompetensi Pedagogik, Literasi Sains, Integrasi Pedagogi Islam, serta Profesionalisme dan Integritas Spiritual. Validasi ahli yang melibatkan lima pakar di bidang pendidikan Islam, bahasa, dan desain visual menunjukkan bahwa kerangka ini memiliki tingkat relevansi, kejelasan, dan kepraktisan yang baik, dengan skor validasi berkisar antara "Cukup Layak" hingga "Sangat Layak". Penelitian ini berkontribusi terhadap wacana pengembangan guru terintegrasi dalam pendidikan Islam dengan menawarkan sebuah kerangka yang menyeimbangkan nilai-nilai spiritual dengan tuntutan pendidikan kontemporer. Kerangka ini diharapkan dapat menjadi acuan bagi program pelatihan profesional di madrasah maupun lembaga pendidikan guru Islam.

Keywords: Competency framework; Islamic pedagogy; Madrasah teachers; Scientific literacy; Teacher professional development

INTRODUCTION

Professional competence in Islamic education involves not only pedagogical expertise and subject mastery but also ethical awareness and spiritual orientation that inform teachers' professional judgment and instructional practice (Sahin, 2018). Professional competence in Islamic education integrates intellectual, pedagogical, ethical, and spiritual dimensions that reflect both national teaching standards and Islamic moral responsibility. However, the competence of many madrasah teachers in Indonesia remains inconsistent, particularly in relation to pedagogical innovation and instructional quality (Alwi & Safitri, 2025; Budirahayu & Saud, 2023)

In the face of rapid scientific and technological advancement, madrasahs face the dual challenge of maintaining Islamic identity while equipping students with relevant scientific knowledge and skills (Handoko et al., 2024; Milatunnisa' et al., 2024). This requires teachers to adopt an integrative approach that harmonizes scientific concepts with Islamic worldview (Shofwan, 2025). Yet, research indicates that many madrasah teachers lack the training, resources, and pedagogical models needed to implement such integration effectively in the classroom.

Although curriculum integration initiatives—such as interdisciplinary and thematic approaches—have been widely implemented, research indicates that such efforts do not automatically translate into enhanced teacher competence. Studies on

teacher professional development suggest that many programs remain fragmented and insufficiently responsive to teachers' contextual needs, limiting their capacity to support the integration of pedagogical effectiveness, ethical formation, and scientific literacy, particularly in value-oriented educational settings (Darling-Hammond, 2017)(Darling-Hammond et al., 2017; Avalos, 2011; OECD, 2019).

Internationally, teacher competency frameworks have been widely discussed through models such as TPACK (Mishra & Koehler), professional standards frameworks (Darling-Hammond), and transformative pedagogy approaches emphasizing reflective and ethical teaching (Mezirow; Sahin). Studies from Australia and Europe highlight that teacher competence today must integrate disciplinary knowledge, pedagogical innovation, ethical responsibility, and contextual sensitivity (Darling-Hammond, 2017; OECD, 2019b). However, these models rarely address the spiritual and moral dimensions that are central to Islamic education, creating a conceptual gap when applied to madrasah contexts.

Therefore, there is a clear need for a structured and contextually grounded competency framework that not only delineates essential teacher competencies but also systematically integrates scientific knowledge with an Islamic pedagogical worldview. This study aims to develop a competency development framework for madrasah teachers that bridges scientific literacy and Islamic pedagogy. The proposed framework is intended to strengthen teacher professionalism in madrasah contexts and contribute to the broader international

discourse on integrated and values-based teacher education.

Accordingly, this study aims to: (1) identify the competency needs of madrasah teachers in integrating scientific knowledge and Islamic pedagogy; (2) design an integrated competency development framework based on these needs; and (3) validate the framework through expert judgment to assess its relevance, clarity, and feasibility.

METHOD

This research employed research and development (R&D) design (Govindasamy et al., 2023; Md. Aris et al., 2024) based on the ADDIE model (Chantan, 2024; Ding & Toran, 2025; Suherti & Sadiyah, 2023), which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. However, this study was limited to the first three stages only which are Phase 1: Analysis, Phase 2: Design, and phase 3: Development. The three phases have been emphasized due to their focus on model development and validation. Phase 4: Implementation and Phase 5: Evaluation phases are planned for future research, once the framework has been further refined and field-tested. The ADDIE model was selected because it provides a systematic yet flexible structure for developing educational frameworks that require iterative refinement and expert validation. Compared to other R&D models, ADDIE allows clear separation between needs analysis, conceptual design, and validation phases, which aligns with the primary objective of this study—to develop and validate a competency framework rather than implement a full intervention. Moreover, The ADDIE model was chosen for

its structured and iterative approach, which is widely used in educational research to develop learning models, teaching frameworks, and training programs. By limiting the study to the early stages, the researcher aimed to ensure that the conceptual integrity and expert

validation of the framework were thoroughly established before classroom application. *The Implementation and Evaluation stages were not conducted in this study and will be pursued in future research.*

Table 1. Summary of ADDIE-Based Research Stages (Analysis–Design–Development)

STAGES	MAIN ACTIVITIES	OUTCOMES/OUTPUTS
Analysis	Preliminary data were collected through interviews, classroom observations, and documentation review to identify challenges in teacher competence, especially in integrating scientific concepts with Islamic pedagogical values.	<ul style="list-style-type: none"> - Mapping of teacher training needs - Identification of competency gaps in science-Islam integration
Design	Based on the analysis, a conceptual framework was formulated. It included key components such as teacher competency domains, instructional strategies, integration principles, and learning support systems tailored for madrasah settings	A structured framework for developing teacher competencies in integrating science and Islamic values
Development	The draft framework was developed into structured documentation, including professional development modules, competency indicators, and guidelines. These materials were then validated by a panel of experts , consisting of education specialists, Islamic pedagogues, and curriculum developers. The expert validation process used both qualitative and quantitative tools, including Likert-scale assessment and open feedback forms.	<ul style="list-style-type: none"> - Professional development modules - Teacher competency indicators - Implementation guidelines - Expert validation (Likert scale & feedback)

This research was conducted at Madrasah Aliyah Hubbulwathan, located in Kecamatan Mandau, Bengkalis Regency, Riau Province. MA Hubbulwathan was purposively selected as the research site due to its distinguished status as the oldest madrasah aliyah in the region and its accreditation level of “A” from the National Accreditation Board for Schools (BAN-S/M). These qualifications indicate both institutional maturity and high-

quality standards in instructional and administrative performance, making it an ideal setting for piloting a competency development framework. The selection of a single madrasah was intentional to allow in-depth contextual analysis. However, this also represents a limitation of the study, as the findings may not fully capture variations across different madrasah contexts. The participants in this study consisted of teachers from various subject backgrounds, including Islamic studies, science, and general education, all of

whom were actively involved in the school's professional development initiatives.

Qualitative data from interviews and classroom observations were analyzed using thematic analysis, involving data reduction, coding, and theme generation. Quantitative data obtained from expert validation were analyzed using descriptive statistics, including mean scores and percentage ratings, to determine the feasibility level of the proposed competency framework. Instruments used in this study included Interview guides for teachers and school leaders, Observation checklists for classroom practice, Document analysis rubrics for teaching materials, Expert validation forms combining Likert scale and open-ended comments. Data were analyzed through qualitative thematic analysis for narrative responses and descriptive statistics (mean scores, standard deviations) to summarize expert evaluations. The feedback informed minor revisions to the framework to enhance clarity, feasibility, and relevance.

RESULTS AND DISCUSSION

Needs Analysis of Teacher Competencies (Analysis)

The needs analysis was conducted through interviews, Google Forms, and document review involving teachers of various subjects in Islamic secondary schools. Although this research article focuses on Madrasah Aliyah Hubbulwathan, the findings are relevant due to the shared Islamic educational values and professional challenges across madrasahs in the region.

The results indicated that many teachers face challenges in integrating Islamic

values with scientific knowledge in classroom instruction. While the majority of teachers showed strong religious commitment, they often lacked strategies to connect scientific materials with Islamic worldview, especially in designing integrated lesson plans (RPP). The lesson plans reviewed revealed a dominance of conventional instruction, with limited critical engagement or contextualized learning.

Teachers also expressed difficulties in understanding the concept and scope of integrative teaching, applying interdisciplinary methods, using learning resources that bridge science and Islamic perspectives, designing student-centered instruction while upholding Islamic educational values. This mismatch was attributed to limited access to training, absence of structured guidance materials, and lack of collaborative professional development platforms. Some teachers were not confident in using modern pedagogical approaches such as project-based learning or inquiry-based instruction, especially within a religious framework. Furthermore, the research uncovered several key competency gaps, including:

- (1) Low awareness of Islamic philosophical foundations of science,
- (2) Inadequate ability to reflect scientific phenomena through Islamic teachings (e.g., using Qur'anic verses),
- (3) Weak integration between cognitive and affective domains in teaching.

The interviews and observation data confirmed that while teachers demonstrate dedication to their profession, their current professional capacity does not yet support deep integrative instruction. This highlights an

urgent need for systematic and contextualized professional development tailored to the needs of madrasah teachers. A study by Elbina Mamla Saidah, Murhayati, & Edison found that teachers in Bengkalis demonstrate willingness and understanding toward integrating science and religion, though they face practical constraints (Saidah et al., 2023). This supports the need for a framework component addressing Scientific Literacy and Integration of Islamic Pedagogy.

Design of the Competency Development Framework (Design)

Following the needs analysis, a **conceptual framework** was designed to address the identified gaps in madrasah teachers' professional competence, particularly in integrating scientific knowledge and Islamic pedagogy. The design phase followed the **Design** stage of the ADDIE model and was grounded in both empirical findings and theoretical constructs from Islamic education and teacher development literature.

The development of this competency framework is anchored in four foundational principles: Tawhidic worldview, professional integrity, contextual relevance, and transformative pedagogy. The *Tawhidic paradigm* reflects the Islamic understanding that all knowledge—both revealed and acquired—is unified and must be directed toward the recognition of divine truth and human betterment (Al-Attas, 1995). To ensure

practicality within specific educational settings, the framework also upholds contextual relevance, meaning it is designed to align with pedagogical realities, cultural environments, and the broader contextual influences on teaching and learning practices (Jukes et al., 2021). Research in diverse educational contexts has shown that failure to adapt pedagogical reform and professional development efforts to local cultural and classroom contexts can hinder effective implementation of instructional practices (Jukes et al., 2021). Lastly, the framework embraces a transformative pedagogical orientation that encourages teachers to adopt student-centered, reflective, and integrative approaches. Through this orientation, Islamic values are positioned as an ethical foundation that supports the development of critical and creative thinking within the learning process. Together, these principles shape a holistic model for enhancing teacher competence, preparing educators not only to teach effectively but also to nurture spiritually and intellectually balanced learners.

The Competency Development Framework Design consists of **four integrated domains**, each with specific indicators of teacher performance:

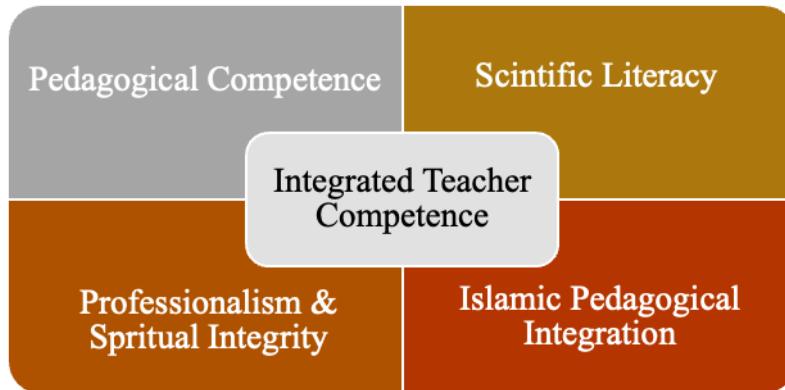


Figure 1. Framework of Competency Development for Madrasah Teachers

1. *Pedagogical Competence*

Pedagogical competence includes teachers' ability to plan, deliver, and evaluate instruction effectively. In madrasah settings, this competence must reflect not only mastery of instructional strategies but also the integration of Islamic values in the learning process. Teachers are expected to apply active learning models (such as collaborative, inquiry-based, or contextual learning) while embodying Islamic adab in classroom interactions. Reflective practice is widely recognized as a key component in strengthening pedagogical competence, enabling teachers to critically evaluate their instructional strategies, professional responsibilities, and ethical commitments. In value-oriented educational contexts such as madrasahs, teaching is understood not only as a technical profession but also as a moral responsibility, requiring educators to implement diverse pedagogical approaches—including cooperative learning, inquiry-based learning, and contextual teaching—while maintaining ethical coherence within the learning process (Korthagen, 2017; Darling-Hammond, 2017; Halstead, 2004).

2. *Scientific Literacy*

Scientific literacy refers to the teacher's ability to understand and explain scientific concepts and processes relevant to the school curriculum. However, in Islamic education, it extends further to include the ability to connect scientific phenomena with the Qur'anic worldview, fostering a sense of Tawhid and reflection on the signs of Allah in the universe. Emphasize that scientific literacy in an Islamic framework should not only promote functional knowledge but also inspire students' faith and environmental consciousness through interdisciplinary connections. Within Islamic educational philosophy, knowledge is viewed as an integrated and meaningful whole rather than fragmented disciplinary domains. This perspective encourages educators to guide learners toward critical reflection that connects scientific inquiry with ethical and spiritual understanding, reinforcing a unified view of knowledge grounded in Islamic epistemology (Halstead, 2004).

3. *Integration of Islamic Pedagogy*

This component addresses the deliberate embedding of Islamic teachings and values into instructional content, processes, and assessment. It goes beyond "Islamization

of content" by cultivating learning experiences that are spiritually meaningful and theologically sound. Integrative Islamic pedagogy involves designing learning experiences that connect the Islamic worldview, reflective inquiry, and contemporary knowledge, enabling students to perceive the unity of truth across disciplines. Teachers are expected to draw upon Islamic sources such as the Qur'an, Hadith, and classical scholarly traditions when designing lessons, promote values of justice, compassion, and stewardship, and create classroom environments in which Islamic ethics shape student interactions and learning processes.

4. Professionalism and Spiritual Integrity

A teacher's professionalism in an Islamic context is inseparable from spiritual integrity. It includes adherence to professional ethics, lifelong learning, sincerity (*ikhlas*), and a strong internal motivation to serve for the sake of Allah (*niyyah*). Teachers are viewed as *murabbi*—guides for both academic and spiritual growth. Islamic teacher professionalism requires not only technical expertise but also spiritual resilience, humility,

and a strong sense of moral accountability. This includes lifelong learning, active participation in school improvement, and ethical leadership in the classroom. In line with that spiritual professionalism means going beyond technical competence to embrace humility, moral accountability, and dedication to student development in line with Islamic ethics. This domain also includes reflective practices such as self-evaluation (*muhasabah*), continuous professional development, and active participation in collaborative learning communities grounded in Islamic values.

To support the implementation of this framework, one of the development activities that can be made is a Workshop. Workshop participants were given a module containing a framework leading to the Integrated Teacher Competence. This workshop module is designed as a practical guide for training madrasah teachers based on four core components of professional competence. Each chapter reflects a key domain from the framework, aiming to foster an integrated teacher identity rooted in Islamic values and contemporary pedagogical demands.

Table 2. Workshop Module Structure

Chapter	Objective	Core Topics	Workshop Activities	Participant Output
1	To enhance teachers' ability to design and deliver active, ethical, and learner-centered instruction.	1. Understanding pedagogical competence in madrasah context, 2. Active learning strategies: PBL, inquiry-based, cooperative learning 3. Ethical classroom management grounded in Islamic values 4. Principles of holistic student assessment	Microteaching sessions, Lesson plan analysis, Madrasah-based teaching case studies	A lesson plan that integrates active pedagogy and Islamic values
2	To improve	1. The essence and urgency of Qur'anic verse A		science-based

	teachers' scientific literacy and their ability to relate scientific concepts with Qur'anic insights.	scientific literacy in Islamic education 2. Reflecting on <i>ayah</i> in learning 3. Fostering curiosity and adab toward nature 4. Islamic ethical perspectives on science and knowledge.	study related to science, Ethical debates in science, and Writing lesson activities with integrated Islamic-scientific content	lesson plan incorporating Islamic principles
3	To build teachers' capacity in designing learning that conceptually and methodologically integrates knowledge with Islamic values.	1. Epistemology of knowledge integration in Islam 2. Integration models: thematic, conceptual, and applied 3. Practical examples in madrasah curriculum 4. Teacher as <i>murabbi</i> (educator and spiritual guide)	Designing integrated instructional scenarios, Curriculum analysis, and Peer review of integrative learning plans	A sample integrated lesson design combining Islamic and scientific themes
4	To cultivate teachers' identity as professionals grounded in Islamic spirituality and ethics.	1. Sincerity (<i>ikhlas</i>), trust (<i>amanah</i>), and self-evaluation (<i>muhasabah</i>) in teacher identity 2. Islamic code of ethics for educators 3. Spiritual reflection as a tool for professional growth 4. Strategies for sustainable teacher development	Guided self-reflection, Discussions on values in teaching, Role model studies from Islamic educational history	A reflective journal and personal professional development roadmap

Expert Validation of the Framework (Development)

The validation process of the competency development framework was carried out during the Development phase using expert judgment from five professionals in relevant fields. The validation focused on three main aspects: content validity, linguistic accuracy, and visual design clarity.

Three experts validated the content of the framework are Prof. Dr. A.M, MA (Professor of Islamic Education), Dr. S.M, M.Ag (Senior Lecturer in Islamic Pedagogy), Dr. K, MA (Specialist in Science and Religion Integration) are content validation experts. The language validation was conducted by Dr. NS, M.Pd, Head of the

Department of Indonesian Language Education at UIN Sultan Syarif Kasim Riau, while the graphic and visual layout was assessed by Dr. H, M.Pd, Dean of the Faculty of Science and Technology at the same university.

Each validator completed a structured assessment form and provided both quantitative ratings (on a 5-point Likert scale) and qualitative suggestions. The validation focused on four key components of the framework: Pedagogical Competence, Scientific Literacy, Islamic Pedagogical Integration, and Professionalism & Spiritual Integrity. The results indicated that the framework is "feasible and appropriate for implementation", with most validators rating it within the "appropriate" or "highly appropriate" category.

Table 3. Summary of Expert Ratings

Validator	Expertise Area	Total Score	Percentage	Assessment Category
Prof. Dr. A.M, MA	Content (Islamic Ed.)	50	100%	Highly Appropriate
Dr. S.M, M.Ag	Content (Pedagogy)	40	80%	Appropriate
Dr. K, MA	Content (Integration)	40	80%	Appropriate
Dr. NS, M.Pd	Language	24	92.3%	Appropriate
Dr. H, M.Pd	Graphic/Layout	43	71.6%	Fairly Appropriate

The feedback from experts was used to revise and improve the framework design, particularly in areas related to terminology consistency, layout clarity, and examples of integration. As a result, the final version of the framework reflects both theoretical soundness and contextual applicability for madrasah teachers. The findings of this paper suggest that the development of an effective competency framework of madrasah

teachers, based on the combination of scientific knowledge with Islamic education, is not only possible but also relevant to the situation. The validation process by five expert reviewers demonstrated a strong consensus on the framework's relevance and applicability across four core components: pedagogical competence, scientific literacy, Islamic pedagogical integration, and professionalism with spiritual integrity.

These findings align with existing literature emphasizing the necessity of context-sensitive professional development in Islamic education. The expert validation not only confirmed the conceptual soundness of each domain but also highlighted the practical urgency for such a model, particularly in environments where teachers must navigate dual responsibilities: upholding Islamic values while engaging with contemporary scientific discourse.

In particular, the high ratings for *Islamic pedagogical integration* reflect an increasing demand for faith-based yet interdisciplinary teaching models in madrasahs. This perspective emphasizes that the integration of an Islamic worldview into the curriculum must go beyond symbolic representation; it should meaningfully shape pedagogical approaches, learning objectives, and classroom dynamics. The proposed framework addresses this need by offering practical modules and reflection-based tools, allowing teachers to internalize and implement integrative teaching. Recent studies have similarly found that madrasah teachers' motivation for continuous improvement is strongly tied to their sense of professional and spiritual calling (Tambak & Sukenti, 2024), and that problem-based learning methods can significantly enhance social competence among madrasah teachers (Tambak et al., 2023). Furthermore, professional development efforts aimed at strengthening scientific process skills and creativity show positive outcomes for teacher competence (Muhammad Sholahuddin Amrulloh & Galushasti, 2023). In addition, digital competencies are increasingly recognized as essential in the Islamic Religious Education context, demanding integration into teacher development frameworks (Arif, 2024). Furthermore, the

emphasis on professionalism and spiritual integrity addresses a crucial dimension of Islamic education often neglected in conventional training models. Professional competence in madrasah settings cannot be reduced to pedagogical technique alone; it must encompass personal character, sincerity (*ikhlas*), and ethical leadership grounded in religious consciousness. This study affirms that embedding spiritual integrity as a formal part of professional development is both needed and welcomed by stakeholders.

Despite the positive validation, some experts provided feedback regarding clarity of terminology and implementation guidance. This reflects a broader challenge in translating integrative concepts into operational tools, which future studies should address through field-testing and iterative refinement. Ultimately, this study contributes to the growing body of research seeking to bridge the gap between Islamic pedagogical philosophy and modern educational practice. By designing a framework that is both spiritually grounded and pedagogically robust, the research responds to the unique professional development needs of madrasah teachers in Indonesia and potentially across the Muslim world.

From a global perspective, the proposed framework resonates with international discussions on teacher professionalism that emphasize ethical responsibility, reflective practice, and contextual responsiveness (Darling-Hammond, 2017; OECD, 2019a). Global policy discourses further highlight that teachers are increasingly expected to act as moral and ethical agents who contribute to social cohesion and culturally responsive education (UNESCO, 2021). Research on teacher professionalism in Australia and

Europe highlights that contemporary professionalism extends beyond technical competence to include professional identity formation, reflective judgment, and values-based decision-making (Sachs, 2016). However, most international competency frameworks remain grounded in secular paradigms and provide limited guidance on the role of spirituality in shaping professional practice. In contrast, studies in Islamic education emphasize spirituality as an integral dimension of pedagogy, ethics, and teacher professionalism (Sahin, 2018). International policy reports underline that contemporary teachers are expected to function not merely as transmitters of knowledge but as reflective professionals who continuously develop their competencies in response to contextual, cultural, and moral demands (OECD, 2019a;).

Beyond Indonesia, this framework can inform teacher training programs in other Muslim-majority contexts and faith-based educational institutions seeking to balance religious identity with modern educational demands.

However, while these international frameworks strongly emphasize professional learning and ethical responsibility, they largely remain grounded in secular paradigms. In contrast, the present framework extends global discussions by explicitly positioning spirituality as an integral dimension of teacher professionalism, thereby offering a culturally and faith-responsive alternative for religious-based education systems.

CONCLUSION

This study developed a competency development framework for madrasah

teachers that integrates scientific knowledge with Islamic pedagogy within a unified and contextually grounded structure. The key finding of this research indicates that teacher professionalism in madrasah settings is multidimensional and cannot be sufficiently addressed through pedagogical and content knowledge alone. Instead, professionalism emerges from the integration of scientific competence, pedagogical skills, ethical responsibility, and spiritual orientation. The expert validation process confirms that the proposed framework is conceptually coherent, contextually relevant, and feasible for application in madrasah environments, particularly in supporting teachers' professional identity and instructional clarity.

From a practical perspective, the proposed framework offers concrete implications for teacher development and institutional practice. It can serve as a reference for designing professional development programs that balance instructional competence with moral and spiritual formation. For madrasah leaders and policymakers, the framework provides structured guidance for aligning teacher competency standards with the philosophical foundations of Islamic education. Additionally, the framework may assist teacher educators in developing training modules that integrate scientific literacy and Islamic values in a systematic and practical manner, thereby strengthening the overall quality of teaching and learning in madrasah contexts.

Despite its contributions, this study has several limitations that open avenues for future research. The framework was developed and validated within a limited institutional scope, relying primarily on expert judgment and qualitative inquiry.

Future studies are encouraged to examine the implementation of the framework across diverse madrasah settings and educational levels. Further research may also investigate its impact on teachers' instructional practices, professional attitudes, and student learning outcomes through empirical and longitudinal designs. Moreover, comparative studies between faith-based and secular teacher competency models could enrich understanding of how values and spirituality shape professional practice. Overall, this study provides a foundational model that can be refined and expanded through continued scholarly inquiry and practical application.

ACKNOWLEDGMENTS

The author would like to express sincere gratitude to all individuals and institutions who contributed to the completion of this study. Special appreciation is extended to the experts and practitioners who provided valuable insights and feedback during the framework validation process. The author also acknowledges the support of colleagues at STAI Hubbulwathan Duri for their constructive discussions and academic encouragement throughout the research process. Any remaining limitations of this study are the sole responsibility of the author.

AI DECLARATION

The author acknowledges the use of artificial intelligence tools to assist in language development, organization of ideas, and refinement of academic writing. All research design, data collection, expert validation, analysis, and conclusions are the sole responsibility of the author.

REFERENCES

Al-Attas, S. M. N. (1995). *Prolegomena to*

the Metaphysics of Islam. ISTAC.

Alwi, M., & Safitri, N. (2025). Teacher Competence, Innovation, and Commitment in Improving the Quality of Language Learning in the Independent Curriculum Era. *Journal La Edusci*, 6(5 SE-Articles), 919–931. <https://doi.org/10.37899/journallaedusci.v6i5.2717>

Arif. (2024). A recent study on Islamic Religious Education teachers' competencies in the digital age: a systematic literature review. *EduLearn*, 19(2). <https://doi.org/https://doi.org/10.11591/edulearn.v19i2.21311>

Budirahayu, T., & Saud, M. (2023). Pedagogical innovation and teacher collaborations in supporting student learning success in Indonesia. *Cogent Education*, 10(2), 2271713. <https://doi.org/10.1080/2331186X.2023.2271713>

Chantan, P. (2024). The Development of Learning Management Using the ADDIE Model to Enhance Strong Citizen Capacity Through a Capacity Curriculum in Lower Secondary School Students (S3) Under the Office of the Basic Education Commission. *Journal of Education Studies, Chulalongkorn University*, 52(1 SE-Research Articles), EDUCU5201015. <https://doi.org/10.14456/edu.2024.15>

Darling-Hammond, L. (2017). *Teaching Quality and Student Achievement: A Review of State Policy Evidence*. Stanford Center for Opportunity Policy in Education.

Ding, Y., & Toran, H. (2025). Application of ADDIE as an Instructional Design Model in the Teaching and Rehabilitation of Children with Autism: A Review. *International Journal of*

Learning, Teaching and Educational Research, 24(1), 87–115. <https://doi.org/10.26803/ijlter.24.1.5>

Govindasamy, P., Abdullah, N., & Ibrahim, R. (2023). Employing modified Design and Development Research (DDR) approach to develop creativity clay module to teach special educational needs (SEN) students with learning disabilities. *International Journal of Academic Research in Business and Social Sciences*, 13(3), 424–438. <https://doi.org/10.46886/IJARBSS/v13-i3/10011>

Halstead, M. (2004). An Islamic concept of education. *Comparative Education*, 40(4), 517–529. <https://doi.org/10.1080/0305006042000284510>

Handoko, A., Febtiana, D., Hidayah, N., Haka, N. B., Mazalena, M., & Darmayanti, H. (2024). An Analysis of the Integration of Islamic Values in Science Learning at State Islamic Junior High School. *BIOSFER: JURNAL TADRIS BIOLOGI*, 15(2), 193–203. <https://doi.org/10.24042/biosfer.v15i2.4453>

Jukes, M. C. H., Sitabkhan, Y., & Tibenda, J. J. (2021). *Cultural Context* (Issue September). <https://doi.org/DOI: 10.3768/rtipress.2021.op.0070.2109>

Korthagen, F. (2017). Inconvenient truths about teacher learning: towards professional development 3.0. *Teachers and Teaching*, 23(4), 387–405. <https://doi.org/10.1080/13540602.2016.1211523>

Md. Aris, N., Ibrahim, N. H., & Abd. Halim, N. D. (2024). Innovate to Educate: The Development and Validation of the Design Thinking Chemistry Module. *International Journal of Academic Research in Progressive Education and Development*, 13(1), 2379–2389. <https://doi.org/10.6007/ijarped/v13-i1/21103>

Milatunnisa', Ikvina Hammal Ida, & Anik Ma'rifat. (2024). Integration of Science Education Through The TPACK Approach With PPRA Cultivation in Madrasah Ibtidaiyah. *Islamic Studies Journal for Social Transformation*, 8(2 SE-Artikel), 93–109. <https://doi.org/10.28918/isjoust.v8i2.11571>

Muhammad Sholahuddin Amrulloh, & Galushasti, A. (2023). Professional development teacher to improve skills of science process and creativity of learners. *EduLearn*, 16(3), 299–307. <https://doi.org/https://doi.org/10.11591/edulearn.v16i3.20404>

OECD. (2019a). *TALIS 2018 results (Volume I): Teachers and school leaders as lifelong learners*. OECD Publishing. <https://doi.org/10.1787/1d0bc92a-en>

OECD. (2019b). *Teachers and School Leaders as Lifelong Learners*. OECD Publishing.

Sachs, J. (2016). Teacher professionalism: Why are we still talking about it? *Teachers and Teaching: Theory and Practice*, 22(4), 413–425. <https://doi.org/10.1080/13540602.2015.1082732>

Sahin, A. (2018). Critical Issues in Islamic Education Studies: Rethinking Islamic and Western Liberal Secular Values of Education. *Religions*, 9, 335. <https://doi.org/10.3390/rel9110335>

Saidah, E. M., Sri, M., & Edison, E. (2023). Scrutinizing Middle School Teachers' Knowledge and Perception on the Integration of Science and Religion. *Al-Ishlah: Jurnal Pendidikan*, 15(2), 1194–

1203.
<https://doi.org/https://doi.org/10.35445/alishlah.v15i2.3312>

Shofwan, A. M. (2025). Discussing holistic-integrative Islamic science in higher education in the postmodern era. *Journal of Modern Islamic Studies and Civilization*, 3(2), 152–162. <https://doi.org/10.59653/jmisc.v3i02.1543>

Suherti, H., & Sadiah, A. (2023). Implementation Of Addie Instructional Design Using The Discovery. *JournalNX-A Multidisciplinary Peer ReviewedJournal*, 9(3), 375–381. <https://doi.org/https://doi.org/10.17605/OSF.IO/UYWR5>

Tambak, S., Marwiyah, S., Sukenti, D., Husti, I., & Zamsiswaya, Z. (2023). Problem-based learning methods: Is it effective for developing madrasa teacher social competence in teaching? *EduLearn*, 17(3), 342–353. <https://doi.org/https://doi.org/10.11591/edulearn.v17i3.20796>

Tambak, S., & Sukenti, D. (2024). Islamic professional madrasa teachers and motivation for continuous development: a phenomenological approach. *EduLearn*, 19(1), 81–90. <https://doi.org/https://doi.org/10.11591/edulearn.v19i1.21301>

UNESCO. (2021). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing.

Yusof, N. N., & Hashim, R. (2020). Philosophy of Knowledge Integration in Islamic Education. *Journal of Islamic Thought*, 15(1), 45–59.