



# Character Education in Science Learning Based on Islamic Civilization at Madrasah

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**Abstract:** This study explores the integration of character education in science (IPA) learning based on Islamic civilization at MAN 1 Ogan Komerang Ulu Selatan. The research aims to analyze how Islamic values and the legacy of Muslim scholars are embedded in science instruction to foster students' moral and intellectual development. Using a qualitative descriptive approach, data were collected through interviews with teachers, students, and school leaders, classroom observations, and document analysis. The findings reveal that the integration of ayat kauniyah, the contributions of Muslim scientists such as Al-Jazari and Banu Musa, and value-based practices effectively promote character traits including religiosity, honesty, responsibility, and environmental awareness. Teaching strategies such as storytelling, role modeling, and habituation support the internalization of Islamic values within the science curriculum. However, challenges persist, including limited teacher capacity, inadequate learning resources, insufficient facilities, and low parental involvement. The study concludes that a holistic, tawhid-based approach to science education can cultivate insan kamil—individuals who are both scientifically competent and morally upright.

**Keywords:** Character Education; Science Learning; Islamic Civilization; Madrasah; Value Integration

## Introduction

The rapid advancement of science and technology in the era of globalization has placed increasing demands on the educational system to produce individuals who are not only intellectually competent but also morally and spiritually grounded. In this context, science education—particularly *Ilmu Pengetahuan Alam* (IPA) in the Indonesian educational framework—faces the challenge of balancing cognitive mastery with the formation of strong moral character. While conventional science learning often emphasizes empirical knowledge and technical skills, there is a growing need to integrate ethical and spiritual values, especially in Islamic educational institutions such as madrasahs (Cao et al., 2025; Firoozi et al., 2025; Satchanawakul & Liangrueonrom, 2025).

These institutions, rooted in Islamic teachings, are uniquely positioned to bridge the gap between scientific inquiry and religious values by embedding character education within the fabric of science learning. The integration of Islamic civilization into science education offers a transformative approach, where natural phenomena are not merely studied as objects of scientific analysis but are also understood as manifestations of divine creation (*Ayat kauniyah*), fostering a sense of awe, gratitude, and responsibility among students (Haddou & Boughrara, 2025; Husamah et al., 2025; Sudirman et al., 2025).

Despite this potential, the implementation of character education in science learning within madrasahs often remains superficial, with values taught in isolation rather than being organically woven into the curriculum. Many science teachers in madrasahs still

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adopt a dualistic view of knowledge, separating religious and scientific domains, which undermines the holistic vision of Islamic education. This fragmentation is exacerbated by limited teacher training in integrating Islamic values with scientific content, a lack of appropriate teaching materials, and insufficient pedagogical models that effectively merge faith and reason (Barrett et al., 2025; Iqbal et al., 2025; Shabbir et al., 2024).

As a result, students may excel in scientific concepts but fail to internalize values such as honesty, responsibility, environmental stewardship, and reverence for creation—values deeply emphasized in the Qur'an and Sunnah. The absence of a coherent framework for embedding Islamic civilization in science learning thus represents a critical gap in contemporary Islamic education.

This study addresses the need for a more meaningful integration of character education within science learning by exploring how Islamic civilization can serve as a foundational framework in madrasahs. Drawing on the epistemological principle of tawhid—the oneness of God—which unifies all knowledge, the research examines how scientific concepts can be contextualized within the historical and ethical contributions of Muslim scholars such as Al-Jazari, Banu Musa, and Al-Razi. Their legacy exemplifies the harmonious relationship between scientific inquiry and spiritual devotion, offering a model for contemporary education. The Qur'anic emphasis on observing the natural world as a sign of divine wisdom (QS. Ali 'Imran:190–191) provides a theological basis for science as an act of worship, encouraging students to approach learning with humility, curiosity, and ethical responsibility.

Empirical observations at MAN 1 Ogan Komerung Ulu Selatan reveal that while some efforts are made to integrate Islamic values into science classrooms—such as referencing Qur'anic verses related to natural phenomena—these practices are often sporadic and lack systematic implementation. Teachers express a desire to deepen this integration but face challenges related to pedagogical skills, curriculum design, and institutional support. Furthermore, character development is frequently confined to extracurricular religious activities, rather than being reinforced through academic subjects like IPA. This disconnect limits the internalization of values and weakens the transformative potential of Islamic education.

Therefore, this research focuses on how character education can be effectively embedded in science learning through a civilization-based approach that highlights the historical, ethical, and spiritual dimensions of Islamic scientific contributions. The

primary objective is to analyze the strategies, challenges, and impacts of implementing such an approach in madrasah settings. Specifically, the study seeks to understand how the integration of Islamic civilization in IPA learning influences students' character development, including their religiosity, critical thinking, environmental awareness, and social responsibility. By examining real classroom practices through observation, interviews, and document analysis, the research aims to develop a model of holistic science education that aligns with the vision of insan kamil—human beings who are intellectually advanced and spiritually refined.

The findings of this study are expected to contribute both theoretically and practically. Theoretically, it enriches the discourse on Islamic epistemology in science education by demonstrating how tawhidic principles can inform pedagogy. Practically, it offers actionable strategies for educators and policymakers to design integrated curricula, enhance teacher training, and foster school-family-community collaboration in character building. Ultimately, this research underscores the madrasah's role not only as a center of religious instruction but as a dynamic institution capable of producing generations who are scientifically literate, ethically grounded, and committed to the betterment of society in line with the noble legacy of Islamic civilization.

## Method

This study employs a qualitative research design with a descriptive approach, aiming to explore and understand the phenomenon of character education in science (IPA) learning based on Islamic civilization at Madrasah Aliyah Negeri (MAN) 1 Ogan Komerung Ulu Selatan. The research is grounded in a naturalistic paradigm, where data are collected in real-life settings to provide an in-depth, comprehensive, and holistic understanding of how Islamic values and the legacy of Islamic civilization are integrated into science education to foster students' moral and intellectual development.

The research method is structured around three primary data collection techniques: in-depth interviews, participant observation, and document analysis. In-depth interviews were conducted with key informants, including science teachers, students, and the deputy head of the madrasah for student affairs. These interviews were designed to explore participants' perceptions, experiences, and challenges regarding the integration of Islamic civilization-based character education in IPA learning. Open-ended questions focused on the conceptual understanding of character education, its implementation strategies, supporting

factors, and existing obstacles within the school environment.

Participant observation was carried out during IPA lessons to directly observe the teaching and learning process, including how teachers contextualize scientific concepts with references to Islamic scholars (such as Al-Jazari, Banu Musa, and Al-Razi), Qur'anic verses (ayat kauniyah), and moral values such as gratitude, responsibility, and environmental stewardship. This technique allowed the researcher to capture the dynamics of classroom interactions and the practical application of character education in real time.

In addition, document analysis was used to examine relevant educational materials such as lesson plans (RPP), student worksheets, school regulations, and extracurricular activity records. This analysis helped to triangulate the data obtained from interviews and observations, ensuring validity and reliability in understanding how character education is formally and informally embedded in the curriculum.

All collected data were analyzed thematically using a qualitative approach. The analysis process involved data reduction, data display, and conclusion drawing, following the Miles and Huberman model. Themes were developed based on recurring patterns related to the integration of Islamic civilization in science learning, teaching strategies, student responses, and institutional support. This methodological framework enables a comprehensive exploration of how madrasahs can serve as transformative educational institutions that harmonize scientific knowledge with Islamic values, ultimately contributing to the formation of students who are not only academically competent but also characterized by strong moral integrity and spiritual awareness.

## Result and Discussion

### *Integration of Islamic Civilization in Science (IPA) Learning*

The implementation of character education in science (IPA) learning based on Islamic civilization at MAN 1 Ogan Komering Ulu Selatan demonstrates a meaningful effort to harmonize scientific knowledge with Islamic values. Teachers actively integrate the concept of tawhid (the oneness of God) by linking natural phenomena to ayat kauniyah (Qur'anic verses about the universe). For example, during lessons on human anatomy or ecosystems, teachers reference verses such as QS. Al-Mu'minun: 78 to emphasize gratitude and awe toward divine creation. This approach transforms science learning from a purely cognitive activity into a spiritually enriching experience, fostering students' religious awareness and moral

reflection (Ferdiansyah et al., 2021; Gao et al., 2024; Mehta & Shah, 2024).

### *Role of Muslim Scientists as Moral and Intellectual Role Models*

A key component of the curriculum is the inclusion of historical contributions from Muslim scholars such as Al-Jazari, Banu Musa, and Al-Razi. Their scientific achievements are not only presented as academic content but also as examples of ethical and devout inquiry. For instance, when discussing mechanics or simple machines, teachers introduce Al-Jazari's engineering innovations as expressions of 'ibadah (worship) through intellectual effort. This narrative strengthens students' sense of identity and pride in Islamic scientific heritage, while simultaneously inspiring values such as curiosity, perseverance, and responsibility (Kamla, 2015; Sabic-El-Rayess, 2020; Yani et al., 2022).

### *Character Internalization through Practice and Habituation*

Character education is reinforced through structured practices and daily habits within the science classroom and school environment. Teachers emphasize values such as honesty during experiments, discipline in following procedures, and environmental stewardship in topics related to pollution and conservation. Students are encouraged to apply these values through real-life actions, such as waste segregation, recycling campaigns, and participation in the "Green Madrasah" program. These activities are integrated into both curricular and extracurricular contexts, promoting the internalization of moral values beyond theoretical instruction (Axon et al., 2023; Ekelin et al., 2016; Tepetaş Cengiz & Bal, 2025).

### *Teaching Strategies and Pedagogical Approaches*

Teachers employ a variety of Islamic character education methods, including storytelling (*qashas*), role modeling (*uswatun hasanah*), habituation (*ta'budh*), and moral guidance (*mau'idhah hasanah*). Interactive discussions, project-based learning, and contextual examples from Islamic history are used to make science lessons more engaging and value-oriented. The integration is implemented through three main approaches: curriculum integration, instructional integration, and the Islamization of science (*taislīm al-'ilm*), creating a holistic educational model that aligns with Islamic epistemology (Liao et al., 2025; Radclyffe-Thomas et al., 2025; Ruark & Biazzin, 2025).

### *Positive Impact on Students' Character Development*

Observations and interviews indicate a noticeable improvement in students' attitudes and behaviors. Students demonstrate increased religiosity, responsibility, environmental awareness, and academic

motivation. They express a deeper appreciation for science as a means to understand God's creation, rather than as a secular or value-neutral discipline. Teachers and school leaders report that students are more reflective, disciplined, and empathetic, showing alignment with the ideal of *insan kamil* (the complete human being) who excels both intellectually and spiritually (Cao et al., 2025; Chen et al., 2024; Yuan et al., 2025).

#### *Challenges in Implementation*

Despite the positive outcomes, several challenges hinder the full realization of this educational model. These include: limited teacher capacity: Many teachers lack sufficient training in integrating Islamic values with science content; inadequate teaching materials: There is a scarcity of textbooks and learning resources that systematically combine Islamic civilization with the IPA curriculum; insufficient facilities: Laboratories and libraries are under-resourced, limiting hands-on and inquiry-based learning; low parental involvement: Families often do not reinforce the values taught at school, creating a disconnect between school and home environments; and fragmented integration: In some cases, the inclusion of Islamic elements remains superficial or sporadic rather than being deeply embedded in lesson planning and assessment.

#### *Institutional Support and Cross-Curricular Collaboration*

The madrasah has made efforts to support character education through structured programs such as communal prayers, hadith memorization, and moral counseling. Leadership commitment is evident in school policies that promote a values-based environment. Furthermore, there is an attempt to integrate character education across subjects and co-curricular activities, indicating a move toward a holistic educational ecosystem. However, this integration requires more systematic coordination and professional development for teachers (Haddade et al., 2024; Hastasari et al., 2022; Isser et al., 2024).

In summary, the results show that science learning based on Islamic civilization has a strong potential to cultivate both scientific literacy and moral integrity. When implemented effectively, it fosters a generation of students who are not only knowledgeable but also ethically grounded and spiritually aware. However, sustained improvement depends on addressing existing challenges through comprehensive teacher training, resource development, and stronger school-family-community collaboration.

The findings of this study reveal that the integration of character education in science (IPA) learning based on Islamic civilization at MAN 1 Ogan Komering Ulu

Selatan is not merely an educational strategy but a transformative pedagogical paradigm. By anchoring science instruction in the principles of *tawhid*, the legacy of Muslim scientists, and value-based practices, the madrasah fosters a holistic learning environment where scientific inquiry and moral development are mutually reinforcing. This approach aligns with the Islamic epistemological framework, which views knowledge (*'ilm*) as a sacred trust and a means to understand divine unity in creation (Tahqiq, 2003). The observed integration of *ayat kauniyah* into science lessons exemplifies how religious and scientific domains can coexist harmoniously, transforming the classroom into a space of both intellectual and spiritual reflection.

One of the most significant interpretations of the results is that students' engagement and motivation in IPA increase when scientific concepts are contextualized within a meaningful worldview. This supports the argument by (Alkouatli et al., 2023; Bavlı & Özdemir, 2025; Hadiyanto et al., 2025) that integrating Qur'anic perspectives into science education enhances students' faith and deepens their understanding of natural phenomena as signs of divine wisdom. When students learn about the human circulatory system not only as a biological mechanism but also as a manifestation of Allah's mercy and design, they are more likely to develop gratitude, humility, and responsibility – values central to Islamic character (*akhlaq*). This experiential and reflective learning model moves beyond rote memorization, fostering a form of scientific literacy that is ethically grounded and spiritually aware.

Furthermore, the use of Muslim scholars such as Al-Jazari and Banu Musa as role models provides students with culturally relevant and morally inspiring figures, countering the often-Western-centric narrative in science education. This finding corroborates that incorporating the achievements of Islamic scientists into the curriculum restores historical balance and strengthens students' Islamic identity. It also challenges the secular dichotomy between religion and science by demonstrating that Muslim scholars historically pursued scientific knowledge as an act of worship (*'ibadah*) and service to humanity. The students' increased interest in innovation and ethical responsibility during project-based learning suggests that these historical narratives are not just informative but also formative in shaping character.

The observed impact on students' behavior – such as honesty in experiments, environmental stewardship, and discipline – confirms that character education can be effectively internalized through consistent practice and modeling. This aligns with the methods emphasized in Islamic pedagogy, including *uswatun hasanah* (good example), *ta'budh* (habituation), and *mau'idhah hasanah*

(good advice). The integration of values through structured activities like the “Green Madrasah” program reflects a constructivist approach where learning is not passive but participatory and value-laden (Mardiana, 2018). However, the limited parental involvement and inconsistent application across subjects indicate that character development remains partially confined to the school environment, weakening its long-term internalization.

When compared to other studies, the findings are consistent with (Hadiyanto et al., 2025), who found that holistic Islamic character education in madrasahs positively influences students’ moral and academic development. However, this study adds a critical dimension by demonstrating that science subjects – often perceived as value-neutral – can become powerful vehicles for character formation when taught through an Islamic civilization lens. This challenges the assumption that character education is best delivered through religious subjects alone and supports the argument by (Haddade et al., 2024) that integration must be cross-curricular to be effective.

Despite the positive outcomes, the challenges identified – such as limited teacher capacity, inadequate resources, and fragmented curriculum integration – echo concerns raised by previous researchers. These barriers suggest that while the vision of integrating Islamic civilization into science education is sound, its implementation requires systemic support. The researcher hypothesizes that without institutionalized teacher training programs and standardized curricular frameworks, the integration of Islamic values in IPA will remain inconsistent and dependent on individual teacher initiative. This hypothesis is grounded in the observation that teachers who received prior exposure to Islamic science pedagogy were more confident and creative in delivering value-integrated lessons.

Moreover, the lack of holistic assessment tools that measure both cognitive and affective domains limits the accountability of character education. As suggested by (Haddou & Boughrara, 2025), a combination of cognitive tests and behavioral observation is essential for evaluating character development. Therefore, it is imperative to develop assessment models that capture not only what students know but also how they apply values in real-life contexts.

The implications of these findings are both practical and philosophical. Practically, madrasahs should invest in professional development for teachers, develop context-specific teaching materials, and strengthen school-family-community collaboration through structured programs such as parenting classes and community service projects. Philosophically, this study reinforces the vision of *insan kamil* – the complete human

being—as the ultimate goal of Islamic education. Science, when taught through the lens of tawhid and historical Islamic contributions, becomes a means to cultivate individuals who are not only scientifically literate but also ethically responsible and spiritually conscious.

## Conclusion

Character education in science learning based on Islamic civilization in madrasahs is a strategic effort to integrate Islamic values with science, in order to shape a generation that is not only academically intelligent but also noble and pious. Through an approach rooted in the principle of tawhid, science education is linked to verses about the universe and the contributions of Muslim scientists such as Al-Jazari and Banu Musa, so that science is understood as a form of worship and a reflection of Allah's greatness. A study at MAN 1 Ogan Komerung Ulu Selatan shows that this integration can enhance students' religiosity, honesty, discipline, and environmental awareness through storytelling, modeling, and habit formation. However, its implementation still faces challenges such as a shortage of trained teachers, limited integrated teaching materials, inadequate facilities, and low parental involvement. Therefore, sustainable strategies are needed, including teacher training, the development of a curriculum based on Islamic civilization, holistic evaluation, and strengthening school-family-community collaboration to achieve holistic education that produces a generation of complete human beings.

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## References

- Alkoutli, C., Memon, N., Chown, D., & Sai, Y. (2023). Something more beautiful: Educational and epistemic integrations beyond inequities in Muslim-minority contexts. *Journal for Multicultural Education*, 17(4), 406–418. <https://doi.org/10.1108/JME-05-2022-0062>
- Axon, S., Lent, T., & Njoku, A. (2023). Shifting sustainable lifestyle practices and behaviour during

- times of pandemic disruptive change: Implications for on-going socio-technical transitions. *Energy Research & Social Science*, 102, 103188. <https://doi.org/10.1016/j.erss.2023.103188>
- Barrett, A., Ke, F., Zhang, N., & Sokolikj, Z. (2025). Implementation fidelity of an evidence-centered maker education intervention in a virtual world for neurodiverse adolescents. *Computers & Education: X Reality*, 7, 100106. <https://doi.org/10.1016/j.cexr.2025.100106>
- Bavlı, B., & Özdemir, K. (2025). The conceptualization and enactment of critical thinking across diverse curricula in higher education. *Thinking Skills and Creativity*, 58, 101914. <https://doi.org/10.1016/j.tsc.2025.101914>
- Cao, Z., Chu, C., Liu, J., Su, X., Zhong, X., & Behrens, P. (2025). Closing the global sand circularity gap needs a systems approach. *One Earth*, 8(2), 101199. <https://doi.org/10.1016/j.oneear.2025.101199>
- Chen, W., Wang, M., Gao, Y., Fang, M., Liu, Y., Tao, Y., Ma, Y., & Wang, W. (2024). The effects of Chinese calligraphic handwriting education on positive mental characters and academic emotions in Chinese primary school students. *Acta Psychologica*, 250, 104533. <https://doi.org/10.1016/j.actpsy.2024.104533>
- Ekelin, M., Kvist, L. J., & Persson, E. K. (2016). Midwifery competence: Content in midwifery students' daily written reflections on clinical practice. *Midwifery*, 32, 7-13. <https://doi.org/10.1016/j.midw.2015.10.004>
- Ferdiansyah, S., Winarno, A., & Ardhita, Z. (2021). Service learning in Indonesia: Developing undergraduate students' leadership during COVID-19 pandemic. *Higher Education, Skills and Work-based Learning*, 12(5), 884-899. <https://doi.org/10.1108/HESWBL-06-2021-0123>
- Firoozi, A. A., Firoozi, A. A., & Maghami, M. R. (2025). Harnessing photovoltaic innovation: Advancements, challenges, and strategic pathways for sustainable global development. *Energy Conversion and Management: X*, 27, 101058. <https://doi.org/10.1016/j.ecmx.2025.101058>
- Gao, J., Peng, P., Lu, F., Claramunt, C., Qiu, P., & Xu, Y. (2024). Mining tourist preferences and decision support via tourism-oriented knowledge graph. *Information Processing & Management*, 61(1), 103523. <https://doi.org/10.1016/j.ipm.2023.103523>
- Haddade, H., Nur, A., Achruh, A., Rasyid, M. N. A., & Ibrahim, A. (2024). Madrasah management strategies through Madrasah Reform program: An evidence from Indonesia. *International Journal of Educational Management*, 38(5), 1289-1304. <https://doi.org/10.1108/IJEM-05-2023-0236>
- Haddou, S., & Boughrara, A. (2025). How diversification shapes full-fledged Islamic bank Stability? A causal inference approach. *International Review of Economics & Finance*, 102, 104367. <https://doi.org/10.1016/j.iref.2025.104367>
- Hadiyanto, A., Putri, K. Y. S., & Fazli, L. (2025). Religious moderation in Instagram: An Islamic interpretation perspective. *Heliyon*, 11(4), e42816. <https://doi.org/10.1016/j.heliyon.2025.e42816>
- Hastasari, C., Setiawan, B., & Aw, S. (2022). Students' communication patterns of islamic boarding schools: The case of Students in Muallimin Muhammadiyah Yogyakarta. *Heliyon*, 8(1), e08824. <https://doi.org/10.1016/j.heliyon.2022.e08824>
- Husamah, Rahardjanto, A., Permana, T. I., & Lestari, N. (2025). Islam and sustainability issues, how far has the relationship progressed? A bibliometric analysis. *Social Sciences & Humanities Open*, 12, 101703. <https://doi.org/10.1016/j.ssaho.2025.101703>
- Iqbal, M., Singh, K., Khan, S., Osho, O., Sidnam-Mauch, E., Bannister, N., Caine, K., & Knijnenburg, B. (2025). Teaching AI awareness in middle school classrooms: Design, implementation and evaluation of two education modules on algorithmic bias and filter bubbles. *Computers and Education: Artificial Intelligence*, 8, 100425. <https://doi.org/10.1016/j.caeai.2025.100425>
- Isser, S. S., Raj, N., Tomar, M., Marwaha, S. S., & Shastri, S. (2024). Value-based education in NEP 2020: Fostering ethical and moral growth through Dharma. *Asian Education and Development Studies*, 13(5), 579-597. <https://doi.org/10.1108/AEDS-06-2024-0121>
- Kamla, R. (2015). Critical Muslim intellectuals' thought: Possible contributions to the development of emancipatory accounting thought. *Critical Perspectives on Accounting*, 31, 64-74. <https://doi.org/10.1016/j.cpa.2015.01.014>
- Liao, L., Wu, J., & Zhou, X. (2025). How does teaching pedagogy affect students' non-cognitive skills. *Journal of Asian Economics*, 100, 101986. <https://doi.org/10.1016/j.asieco.2025.101986>
- Mehta, R., & Shah, A. (2024). An Insight into Real Time Vehicle Detection and Classification Methods using ML/DL based Approach. *Procedia Computer Science*, 235, 598-605. <https://doi.org/10.1016/j.procs.2024.04.059>
- Radclyffe-Thomas, N., Schmitz, M., Breitbarth, T., Miandar, T., Pietrzak, M., Sebhatu, S. P., & Simaens, A. (2025). "A great adventure in both teaching and learning" - Teacher identity and innovative responsible management education pedagogies in Business Schools. *The International Journal of*

- Management Education*, 23(3), 101142.  
<https://doi.org/10.1016/j.ijme.2025.101142>
- Ruark, T. I., & Biazzin, C. (2025). Teaching project management with generative AI: A pedagogical model for responsible and sustainable practice. *The International Journal of Management Education*, 23(3), 101232.  
<https://doi.org/10.1016/j.ijme.2025.101232>
- Sabic-El-Rayess, A. (2020). Epistemological shifts in knowledge and education in Islam: A new perspective on the emergence of radicalization amongst Muslims. *International Journal of Educational Development*, 73, 102148.  
<https://doi.org/10.1016/j.ijedudev.2019.102148>
- Satchanawakul, N., & Liangruenrom, N. (2025). The historical evolution of liberal arts education: A systematic scoping review with global perspectives and future recommendations. *International Journal of Educational Research Open*, 9, 100482.  
<https://doi.org/10.1016/j.ijedro.2025.100482>
- Shabbir, A., Rizvi, S., Alam, M. M., & Su'ud, M. M. (2024). Beyond boundaries: Navigating the positive potential of ChatGPT, empowering education in underdeveloped corners of the world. *Heliyon*, 10(16), e35845.  
<https://doi.org/10.1016/j.heliyon.2024.e35845>
- Sudirman, S., Ramadhita, R., Bachri, S., & Whindari, Y. (2025). The transformation of state islamic higher education institutions into World-Class University: From globalisation to institutional values. *Social Sciences & Humanities Open*, 12, 101705.  
<https://doi.org/10.1016/j.ssaho.2025.101705>
- Tepetaş Cengiz, G. Ş., & Bal, M. (2025). Evaluation of the coaching practice with teachers in the implementation of retelling activities in preschool period. *Teaching and Teacher Education*, 165, 105134.  
<https://doi.org/10.1016/j.tate.2025.105134>
- Yani, M. T., Mahfud, C., Ranga Sa'adillah, S. A. P., Bustami, M. R., Maskuri, & Taufiq, A. (2022). Advancing the discourse of Muslim politics in Indonesia: A study on political orientation of Kiai as religious elites in Nahdlatul Ulama. *Heliyon*, 8(12), e12218.  
<https://doi.org/10.1016/j.heliyon.2022.e12218>
- Yuan, M., MacDonnell, M., Poliakova, P., Hatchimonji, D. R., Linsky, A. C. V., Selby, E. A., & Elias, M. J. (2025). Testing the Social-Emotional and Character Development (SECD) approach with student mental health and academic outcomes. *Social and Emotional Learning: Research, Practice, and Policy*, 5, 100105. <https://doi.org/10.1016/j.sel.2025.100105>