

## **Integration of Natural and Social Sciences (IPAS) Education and Islamic Values in the Formation of Students' Ecological and Spiritual Character**

Munfarida<sup>1</sup>, Muhtarom<sup>2</sup>,

<sup>1,2</sup>Universitas Islam Negeri KH. Abdurrahman Wahid, Pekalongan, Indonesia

E-mail: [munfarida040802@gmail.com](mailto:munfarida040802@gmail.com)

### **Abstract**

This research is motivated by the increasing global environmental crisis and low ecological awareness among students, which demands a more meaningful and sustainable educational approach. Natural and Social Sciences (IPAS) education has great potential as a vehicle for fostering scientific understanding as well as moral values in preserving the environment. The purpose of this study is to analyze the forms and models of integration of IPAS with Islamic values, their implementation in learning, and their impact on the formation of student character. This study uses a qualitative approach with a literature study method through analysis of scientific literature, journals, and documents related to the integration of science education and Islamic values. Data were analyzed using content analysis techniques with the stages of reduction, categorization, and drawing conclusions. The results show that the implementation is evident in lesson plans (RPP), observation activities, and reflection on spiritual values. This integration has been proven to be able to foster ecological characters such as environmental care, energy conservation, and maintaining cleanliness, as well as spiritual characters such as gratitude, awareness of the greatness of God, and moral responsibility towards His creation. In conclusion, the integration of IPAS and Islamic values effectively fosters ecological and spiritual awareness in students and supports the realization of sustainable education based on Islamic values.

**Keywords:** integration of science, Islamic values, sustainable education, ecological character, spirituality

### **Introduction**

Currently, various problems such as global warming, water and air pollution, deforestation, and declining biodiversity are issues that continue to increase and have a wide impact (Santosa & Heriyanto, 2023). This crisis impacts not only ecological aspects, but also economic, social, and public health aspects. Environmental education in elementary schools is a crucial approach to fostering ecological awareness and fostering students' social responsibility for environmental sustainability (Ludiya, 2024). Environmental-based learning helps students understand the interconnectedness between humans and ecosystems and the importance of maintaining the balance of nature for survival (Saputra & Afriyadi, 2025).

Low ecological awareness is evident in daily behaviors that lack environmental awareness, such as excessive plastic use, indiscriminate waste disposal, and a lack of initiative in protecting the school environment (Lahabu et al., 2024). This situation reinforces the urgency of implementing sustainable education or Education for Sustainable Development (ESD) as an effort to instill sustainable values in the school curriculum (Vioreza et al., 2023). UNESCO emphasizes that ESD must be an integral part of education systems worldwide so that students

are able to understand and respond to global challenges critically and responsibly (Fatimah, 2024). Through this approach, schools serve not only as a place to transfer knowledge but also as a space to foster awareness, values, and skills in sustainable living.

In Indonesia, the concept of ESD has begun to be integrated into the Merdeka curriculum through various thematic and contextual subjects, including Natural and Social Sciences (IPAS) at the elementary school level (Fatimah, 2024). The subject plays a crucial role in building ecological awareness because it integrates two important dimensions: nature and society (Hayunanda et al., 2025). Through IPAS, students are encouraged to understand the interrelationship between humans and the environment as a whole. Connecting IPAS learning to the context of everyday life allows students to observe and analyze real-world problems in their environment, such as waste management, natural resource conservation, and disaster mitigation.

Science learning in elementary schools tends to focus on cognitive aspects and memorization of scientific concepts, thus providing little space for the development of ecological values, attitudes, and behavior (Utami & Utari, 2025). By incorporating Islamic values such as the mandate as a caliph on earth and the prohibition of causing damage as stated in QS. Al-A'raf [7]: 56 and Ar-Rum [30]: 41), it is hoped that students will understand that protecting the environment is part of practicing religious teachings. From an Islamic perspective, education has a strong theological foundation in instilling the values of balance and human responsibility towards nature. The Qur'an refers to humans as *khalifah fi al-ardh* (leaders on earth) who have the moral mandate to protect God's creation (Andini, 2021).

Referring to the literature discussed, there are three main foundations of this research: (1) the global and national need for education to respond to the environmental crisis (2) the strategic role of science subjects as a medium for developing ecological awareness through strengthening scientific and social competencies; and (3) the relevance of Islamic values as an ethical and spiritual framework that can strengthen the internalization of ecological character in students. However, there is still a lack of research related to the integration of science and Islamic values at the elementary school level with systematic models and instruments—therefore, this research is here to fill this gap and offer theoretical and practical contributions.

The main objective of this research is to develop and analyze a model for integrating science and natural science learning with Islamic values to shape the ecological character and scientific spirituality of elementary school students. Specifically, this research aims to: (1) identify the extent to which current science and natural science learning reflects ESD and Islamic values; (2) design an Islamic-value-based science and natural science learning model to increase ecological awareness; and (3) evaluate the effectiveness of the model in shaping students' ecological and spiritual character.

Thus, the results of this study are expected to not only produce theoretical findings regarding the integration of science and Islamic values, but also provide practical contributions in the form of learning guidelines relevant to the elementary school context, which are able to shape students who think scientifically, behave ecologically, and have a spiritual awareness of the responsibility to preserve the earth. This research is also expected to be a strategic step in supporting the implementation of Education for Sustainable Development (ESD) in Indonesia through a contextual, religious approach, and rooted in the local culture of Islamic education.

## **Methods**

### **Research Design**

In this study, the authors employed a qualitative literature study method. Furthermore, the research sample included scientific works such as journals, books, research findings, policy reports, and curriculum documents addressing the integration of science education, Islamic education, and continuing education. These sources were selected using purposive sampling, considering their relevance, novelty, and academic validity (Ramadani et al., 2025).

### **Participants**

The subjects of this research are elementary school students, particularly those at the level that has received science subjects as part of the Independent Curriculum, as students at this stage are in the process of forming values, attitudes, and habits, which are still very flexible and easily guided. Furthermore, indirect subjects include teachers and Islamic elementary education institutions, who are expected to gain new insights into the application of an integrative approach to science learning.

### **Research Procedures**

The research procedure was carried out through four main stages, namely: (1) identification of problems and focus of the study, by exploring issues related to the low ecological awareness of students and the urgency of integrating Islamic values in science learning; (2) collection of library sources, which include primary literature (research journals and scientific books) and secondary literature (UNESCO policy reports, curriculum documents, and conceptual articles); (3) organization and classification of data, by grouping sources based on main themes such as sustainable education, integration of science and Islam, and ecological character formation; and (4) analysis and interpretation of data, by examining the relationships between concepts and finding relevant thematic patterns to answer the formulation of the research problem.

### **Data Collection Techniques**

Data collection techniques were conducted through documentation, namely searching written sources from national and international scientific journals, books, and official institutional websites such as UNESCO and the Ministry of Education using the publish & perish method. This procedure follows literature review guidelines that emphasize the importance of critical reading, note-taking, and organizing literature based on topical relevance (Rizki, 2024).

### **Data analysis**

The collected data was then analyzed using content analysis techniques to identify meanings, relationships, and theoretical trends emerging in the literature. The analysis process was carried out systematically through the stages of data reduction, data presentation, and conclusion drawing, as outlined by Miles, Huberman, and Saldaña (Qomaruddin & Sa'diyah, 2024).

Through this approach, the research yields a deep and comprehensive understanding of how the integration of science and Islamic values can be an effective strategy in shaping students' ecological character. Thus, the results of this literature review not only strengthen the theoretical foundation of the research but also provide a conceptual contribution to the development of sustainable learning practices in elementary schools based on Islamic values.

## Results

### The Potential of Science Learning as a Medium for Forming Ecological Awareness

Several studies have demonstrated the importance of integrating science education with Islamic values in shaping students' ecological character. (Rosita & Prabowo, 2025) found that a science learning model based on Islamic values can increase students' concern for the environment and strengthen their spiritual awareness of God's creation. Conceptually, science combines the natural and social domains, thus helping students understand the reciprocal relationship between humans and the ecosystem as a whole (Ibrahimi, 2025). The integration of science with Islamic values in learning practices is realized through the development of a Learning Implementation Plan (RPP) that combines scientific competencies with religious principles. In the process, teachers act as facilitators who link science concepts with Islamic teachings through exploratory activities, simple experiments, and spiritual reflection. The learning activities implemented include field observations, thematic discussions, gratitude journal writing, and concrete actions such as planting trees or maintaining a clean school environment (Ningsih, 2025).

Several previous studies have shown a significant link between the application of Islamic values—such as the concept of a caliph on earth, responsibility for God's creation, and the prohibition against environmental damage—and increased ecological awareness in students. Analysis also shows that sustainability education integrated into the school curriculum can broaden students' understanding of the relationship between humans and the environment in a more holistic manner (Wulandari, 2024). Science (IPAS) holds a strategic position as a subject that can connect scientific, social, and spiritual aspects in learning (Viqri et al., 2024).

Integrating Natural and Social Sciences (IPAS) with Islamic values can be an effective strategy for shaping the ecological character of elementary school students (Saputra & Afriyadi, 2025). This integration views environmental protection as not merely a social obligation but also a form of worship and moral responsibility to God (Mumtazah et al., 2025). IPAS holds great potential for instilling ecological awareness because it directly examines the interrelationship between humans and the environment through scientific approaches, observations, and experiential activities. When Islamic values are integrated into IPAS learning, a spiritual and moral dimension emerges that strengthens the meaning of the learning. Students not only understand natural phenomena scientifically but also realize that protecting nature is part of their mandate as caliphs on earth, as stated in Surah Al-A'raf verse 56 and Ar-Rum verse 41 of the Qur'an (Purwanti, 2021). This understanding makes students see the environment not just as an object of study, but as God's creation that must be respected, protected, and used wisely (Siregar et al., 2025).

From a theological perspective, (Habibah et al., 2025) explains that the principle of sustainability in Islam is derived from the teachings of the Qur'an which emphasizes balance (*balance*), responsibility (*trust*), and the prohibition of causing damage (*facade*). Therefore, the integration of science and natural sciences with Islamic values has strong conceptual relevance as a form of implementing sustainable education rooted in religious values. The integration of science and natural sciences and Islamic values is also in line with the principles of *Education for Sustainable Development* (ESD) campaigned by UNESCO (Fatimah, 2024). ESD emphasizes the importance of education that not only teaches environmental knowledge but also fosters awareness, values, and skills to achieve a sustainable lifestyle.

Islamic education offers a highly relevant ethical and spiritual framework to complement the dimensions of science and technology. Islamic teachings emphasize the role of humans as *khalifah fi al-ardh* (leader on earth) who has a moral responsibility to protect nature, as stated in QS. Al-A'raf [7]:56 and QS. Ar-Rum [30]:41. These two verses remind us that human behavior that damages the environment is the main cause of damage to the earth, while also emphasizing the moral and spiritual responsibility of humans to protect the earth as a trust from Allah, and reminding us that behavior that damages nature not only impacts life on earth, but is also a form of violation of divine values.

### **Experience-Based Learning Strategies for Strengthening Ecological Character**

This integration has been shown to positively influence the development of students' ecological awareness. Islamic-based science and education learning fosters environmental awareness, responsibility for cleanliness, and concern for environmental sustainability among elementary school students (Putri & Zenien, 2022). Students become more aware of the impact of their behavior on the environment, such as excessive plastic use, waste management, and water and energy conservation. This occurs because Islamic values, such as trustworthiness, gratitude, and the prohibition of causing harm, act as internal drivers that foster moral and spiritual awareness of the importance of maintaining the balance of nature.

Furthermore, science learning integrated with Islamic values encourages contextual and meaningful learning (Rosita & Prabowo, 2025). The role of teachers is crucial to the success of this integration. Teachers need a deep understanding of science concepts as well as relevant Islamic values to be able to design interdisciplinary and meaningful learning (Nelly, 2025). Teachers can link scientific concepts to Islamic teachings, for example, explaining the water cycle as a manifestation of God's greatness in regulating life, or discussing the energy cycle while instilling the values of efficiency and responsibility in the use of natural resources. This approach facilitates students' holistic understanding of the relationship between science and religious teachings, enabling them to learn to think scientifically while behaving religiously in their daily lives. This contextual learning also strengthens the relevance of the Merdeka curriculum, which emphasizes authentic learning experiences and focuses on character development.

The learning strategies used should be oriented towards direct experiences, such as environmental projects, nature observations, and socio-religious activities (e.g., community service or Islamic-based green campaigns). Through these activities, students can internalize ecological and religious values naturally through concrete actions. This process helps students not only understand the importance of environmental protection but also practice it in their daily lives as a form of worship and gratitude to God. Sustainable education is crucial as a means of building a generation that is environmentally conscious and responsible for the future of the earth.

This concept is implemented through learning that is oriented towards solving real-world problems, such as natural resource management, disaster mitigation, and waste recycling (Bhavani & Ghosh, 2025). The alignment between scientific principles and Islamic values, such as responsibility (*caliph*), gratitude for God's creation, and the prohibition of causing damage are in line with scientific principles in maintaining ecosystem balance. This confirms that science and religion are not two separate domains, but can synergize in forming a complete ecological awareness. Ecological character is not only formed through scientific knowledge, but also through the habituation of spiritual attitudes and values. Students who understand

Islamic values tend to have greater empathy for the environment, because they view nature as a trust from God that must be protected. Thus, the integration of science and religion and Islamic values can strengthen the cognitive, affective, and spiritual dimensions in basic education.

From the results of the thematic analysis, it was found that Islamic values-based science and education learning contributes to three important aspects: (1) strengthening ecological awareness through a scientific understanding of the relationship between humans and the environment; (2) instilling scientific spiritual values that view environmental protection as worship; and (3) fostering social responsibility for the sustainability of the surrounding environment. The integration of science and education with Islamic values is not only theoretically relevant but also supports the direction of national education policy towards sustainable development. This approach creates a contextual, religious, and scientific learning model—capable of bridging the gap between scientific knowledge and moral values. Thus, education based on the integration of science and education with Islam can be a conceptual solution for building a generation with ecological, spiritual, and responsible character towards the earth.

### **The Impact of Integration on Students' Ecological Awareness**

This integration has a positive impact on the development of students' ecological and spiritual character. The ecological character that develops includes an attitude of concern for the environment, energy-saving habits, and awareness of maintaining cleanliness. Meanwhile, spiritual character is reflected in an increased awareness of God's greatness, gratitude for the blessings of nature, and a moral responsibility to avoid damaging His creation. Several empirical studies, such as those presented by (Mardiyah, 2024) and (Fatimah, 2024), show that students who participate in integrative learning demonstrate significant improvements in environmentally friendly behavior and spiritual awareness compared to conventional science learning. This proves that the combination of science and Islamic values can shape a spiritual scientific attitude, namely a scientific attitude framed within religious values.

From a critical analysis perspective, the integration of science and Islamic values with Islamic values offers several advantages and challenges. Its strength lies in its ability to balance cognitive, affective, and spiritual aspects, making learning more meaningful and contextual. Furthermore, this approach supports the goals of Education for Sustainable Development (ESD) by linking science with moral responsibility towards the environment.

### **Challenges in Implementing the Integration of Science and Islamic Values**

However, the main challenges faced are the limited competence of teachers in understanding the concept of integrating science and religion in depth, as well as the lack of teaching materials and evaluation instruments capable of assessing the spiritual and ecological dimensions simultaneously (Sari et al., 2025). (ZALMI, 2024) stated that science teachers' low understanding of the concept of integration, lack of training and professional development for teachers. Theoretically, this integrative approach is in line with the idea of reconciling science and revelation as put forward by Al-Attas, who emphasized that true knowledge must lead humans to knowledge of God (Wali, 2019).

In the context of modern education, this is also in line with the concept of Education for Sustainable Development (ESD), which emphasizes a balance between environmental, social, economic, and spiritual dimensions. Thus, the integration of science and Islamic values serves not only as a pedagogical strategy but also as a philosophical and moral approach that affirms the role of education as a means of shaping a generation that is knowledgeable, moral, and

responsible for the sustainability of the earth. Therefore, the results of this study open up opportunities for the development of a curriculum that is more integrative between science and Islamic values. Going forward, teacher training and the development of Islamic values-based science and Islamic learning modules are needed so that the implementation of this integration is not symbolic, but rather conceptual and applicable. Further research can focus on evaluating the effectiveness of this model in diverse school contexts, so that the integration of science and Islam can truly become the foundation of sustainable education at the elementary level.

### Conclusion

This approach fosters a balance between scientific knowledge and spiritual awareness, while simultaneously strengthening human responsibility as caliphs on earth. In addition to enriching the theory of sustainable education, the results of this study also provide a practical contribution in the form of recommendations for an Islamic-value-oriented, social studies learning model *Education for Sustainable Development (ESD)*. This model emphasizes the integration of science, values, and ecological practices that are contextualized within the lives of students. Thus, the results of this literature review not only broaden theoretical insights into the integration of science and Islamic education but also support the implementation of sustainable education that is relevant to the culture and spirituality of Indonesian society.

Based on these findings, several strategic recommendations are provided to strengthen the integration of science and Islamic values in the context of primary and secondary education. First, it is necessary to develop an Islamic science and Islamic education module based on eco-spiritual education that combines scientific concepts with the values of the Qur'an and Hadith. Second, teacher training and mentoring are urgently needed to ensure they have adequate pedagogical and religious skills to implement integrative learning. Teachers must be able to explain scientific concepts from an Islamic perspective, while simultaneously fostering a sense of love and responsibility for the environment. Third, support from educational policies is essential for this integration to be systematically implemented in the national curriculum. The authors express their appreciation to the researchers and academics whose work served as the primary foundation for compiling this literature review. Thanks are also extended to those who provided support in the form of suggestions, references, and conceptual reinforcement during the completion of this research.

### References

- Bhavani, K. S., & Ghosh, D. (2025). Case Studies of Work-Integrated Learning: Pedagogical Practices and Assessment Strategies in School Mathematics Beyond the Classroom. *Lecture Notes in Networks and Systems*, 1206 LNNS, 319–330. [https://doi.org/10.1007/978-981-96-0201-8\\_18](https://doi.org/10.1007/978-981-96-0201-8_18)
- Andini, R. (2021). Rekonstruksi Makna Khalīfatullāh fī al-Ardh dalam alQur'an Sebuah Tawaran dari Teori Ekoteologi Islam Studi Tafsir Tematik. *Mauizhah: Jurnal Kajian Keislaman*, 11(2), 1–35.
- Falah, M. N., Jamali, J., & Iwan, I. (2024). Interkoneksi Agama, Budaya, dan Peradaban dalam Pendidikan Islam: Perspektif Filosofis untuk Menghadapi Tantangan Global. *Indonesian Journal of Action Research*, 3(1), 33–41.
- Fatimah, S. (2024). *Pembelajaran IPA SD/MI Inovatif & Kontekstual Berorientasi Education For Sustainable Development*. CV Pajang Putra Wijaya.

- Habibah, W., Sofa, A. R., Aziz, A., Bukhori, I., & Islam, M. H. (2025). Integrasi Nilai-Nilai Al-Qur'an dan Hadits dalam Pendidikan untuk Membangun Tanggung Jawab Konservasi Alam di Madrasah Ibtidaiyah Ihyaul Islam Pakuniran. *Jurnal Budi Pekerti Agama Islam*, 3(1), 36–52.
- Harifah, N., & Sofa, A. R. (2025). Penguatan tradisi keislaman di Ma'had Putri Nurul Hasan MAN 2 Probolinggo: Implementasi pengajian kitab, amalan harian, dan ritual kolektif dalam pembentukan karakter santri. *Akhlaq: Jurnal Pendidikan Agama Islam Dan Filsafat*, 2(1), 218–239.
- Hayunanda, V., Permatasari, I. S., Pusparani, S., & Setiyoko, D. T. (2025). Peran Pembelajaran IPAS pada Siswa Kelas V SDN Klampis 02 untuk Menciptakan Generasi Peduli Lingkungan. *AL-MUADDIB: Jurnal Kajian Ilmu Kependidikan*, 7(1), 228–238.
- Ibrahimi, R. (2025). Peran Media Ekosistem Lokal Berbasis Kearifan Lokal dalam Penguatan Pendidikan IPS di Sekolah Dasar. *Jurnal Pendidikan Multidisiplin*, 1(2), 87–95.
- Labobar, J., & Kapojos, S. (2023). Literasi Ekologis Literasi Ekologis: Implementasi Pendidikan Lingkungan Hidup bagi Siswa SMP Negeri Se-Distrik Sentani. *Civics Education and Social Science Journal (CESSJ)*, 5(2), 94–109.
- Lahabu, Y. D., Prasetyo, S., Abroto, A., & Anuli, W. Y. (2024). Pengurangan Dan Pelestarian Limbah Plastik Di Lingkungan Sekolah Untuk Membentuk Kesadaran Siswa Terhadap Kebersihan Lingkungan. *Journal of Elementary Educational Research*, 4(1), 69–78.
- Ludiya, L. F. (2024). Pentingnya Membangun Kesadaran Lingkungan Melalui Pembelajaran PKN di Sekolah Dasar Guna Membentuk Karakter Peduli Lingkungan pada Siswa. *Jurnal Pendidikan Guru Sekolah Dasar*, 1(3), 11. <https://doi.org/10.47134/pgsd.v1i3.529>
- Mardiyah. (2024). Integrasi Nilai Fiqh dalam Pembelajaran IPA : Strategi Membangun Kesadaran Lingkungan pada Siswa Madrasah Ibtidaiyah Integration of Fiqh Values in Science Education : A Strategy to Foster Environmental Awareness in Madrasah Ibtidaiyah Students. *Jurnal Pendidikan Matematika Dan Ilmu Pengetahuan Alam*, 2(3), 172–181.
- Mumtazah, M. N., Pambayun, K. A. P., Rohmatic, Z. A., & Al-Faruqi, M. Z. (2025). Integrasi Tafsir Tarbawi dan Sains Dalam Mewujudkan Lingkungan Pendidikan yang Islami dan Berkelanjutan. *Nawasena: Journal of Mathematics, Science and Technology Education*, 1(02), 15–22.
- Mutiara, S. (2025). Urgensi pendidikan Islam dan kesadaran ekologis: menumbuhkan kepedulian lingkungan melalui nilai-nilai Al-Qur'an. *UNISAN JURNAL*, 4(3), 30–40.
- Nelly, N. (2025). Strategi Pembelajaran Interdisipliner Sains Dan Pendidikan Islam di Sekolah: Penelitian. *Jurnal Pengabdian Masyarakat Dan Riset Pendidikan*, 4(2), 9524–9535.
- Ningsih, W. (2025). Metode dan Strategi Pembelajaran PAI (Pendidikan Agama Islam) Dilengkapi 100 + Metode dan Strategi Pembelajaran yang Cocok Diterapkan dalam Pembelajaran PAI. In *Pt Mafy Media Literasi Indonesia* (Issue June).
- Purwanti, E. Y. (2021). Implementation of environmental education value in islamic education (analysis of tafsir al qur'an surah al-a'raf ayat 56-58). *Lisyabab: Jurnal Studi Islam Dan Sosial*, 2(2), 161–172.
- Putri, S. E., & Zenien, S. S. (2022). Penguatan Sikap Peduli Lingkungan Melalui Integrasi Nilai Nilai Islam Dalam Mata Pelajaran IPA Materi Keseimbangan Ekosistem Kelas 6 Sekolah Dasar. *Jurnal Pendidikan Dan Pembelajaran IPA Indonesia*, 12(2), 81–87.
- Qomaruddin, Q., & Sa'diyah, H. (2024). Kajian teoritis tentang teknik analisis data dalam

- penelitian kualitatif: Perspektif Spradley, Miles dan Huberman. *Journal of Management, Accounting, and Administration*, 1(2), 77–84.
- Ramadani, U. P., Muthmainnah, R., Ulhilma, N., Wazabirah, A., Hidayatullah, R., & Harmonedi, H. (2025). Strategi Penentuan Populasi dan Sampel dalam Penelitian Pendidikan: Antara Validitas dan Representativitas. *QOSIM: Jurnal Pendidikan Sosial & Humaniora*, 3(2), 574–585.
- Rizki, N. (2024). Analisis Strategi Pembelajaran dalam Meningkatkan Kemampuan Berpikir Kritis: Studi Perpustakaan dan Sumber Referensi. *Al-Ijtima'i: Jurnal Pengabdian Masyarakat*, 1(2), 58–82.
- Rosita, D., & Prabowo, F. (2025). Integrasi Nilai-nilai Islam dalam Pembentukan Karakter Siswa Melalui Pembelajaran IPA di Madrasah Ibtidaiyah. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(02), 284–298.
- Santosa, I., & Heriyanto, H. (2023). Pemahaman Tradisional mengenai Alam Menurut SeyyedHossein Nasr Dalam Upaya Mengatasi Krisis Lingkungan. *Jurnal Peradaban*, 2(1). <https://doi.org/10.51353/jpb.v2i1.659>
- Saputra, T. A., & Afriyadi, M. M. (2025). Menumbuhkan Kesadaran Ekologis Siswa Sejak Dini: Menjadikan Lingkungan Sebagai Sekolah Kehidupan. *Muallimun: Jurnal Kajian Pendidikan Dan Keguruan*, 5(1), 1–21.
- Sari, R. W., Syahsiami, L., & Subagyo, A. (2025). Tinjauan teoritis integrasi agama dan sains dalam pendidikan. *Realita: Jurnal Penelitian Dan Kebudayaan Islam*, 23(1), 19–36.
- Siregar, I. R., Albina, M., Islam, U., & Sumatera, N. (2025). Inklusi : Penelitian Pendidikan Islam Dan Filsafat Yayasan Salmiah Education Global International ( YSEGI ) Hakikat Lingkungan dalam Filsafat Pendidikan Islam. *Jurnal Pendidikan Islam Dan Filsafat*, 1(02), 1–13.
- Utami, U., & Utari, U. (2025). Menciptakan Generasi Peduli Lingkungan melalui Pembelajaran IPAS yang Berdampak di Sekolah Dasar. *Journal of Integrative Elementary Education*, 1(1), 16–23.
- Vioreza, N., Hilyati, W., & Lasminingsih, M. (2023). Education for Sustainable Development: Bagaimana Urgensi dan Peluang Penerapannya pada Kurikulum Merdeka? *PUSAKA: Journal of Educational Review*, 1(1), 34–48.
- Viqri, D., Gesta, L., Rozi, M. F., Syafitri, A., Falah, A. M., Khoirunnisa, K., & Risdalina, R. (2024). Problematika Pembelajaran IPAS dalam Kurikulum Merdeka. *Jurnal Inovasi, Evaluasi Dan Pengembangan Pembelajaran (JIEPP)*, 4(2), 310–315.
- Wali, A. (2019). *Multikulturalisme dalam Pendidikan Agama Islam: Analisis Pemikiran Dosen PAI di Perguruan Tinggi Umum*. Penerbit A-Empat.
- Wulandari, C. E. (2024). Integrasi Prinsip Pembangunan Berkelanjutan Dalam Kurikulum Pendidikan Islam: Sebuah Tinjauan Literatur: Model Integrasi Pembangunan Berkelanjutan Dalam Kurikulum Pendidikan Islam Dan Tantangan Dan Peluang Dalam Implementasi Integrasi Pembangunan Berkelan. *TarbiyahMU*, 4(2), 22–29.
- ZALMI, F. (2024). *Model Integrasi IPA dan Islam pada Kurikulum Merdeka di Sekolah Menengah Pertama Negeri Kota Pekanbaru*. Universitas Islam Negeri Sultan Syarif Kasim Riau