

Building Spiritual and Scientific Literacy through Wali Pilgrimage and Maharani Zoo Cave

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Keywords

Literasi spiritual, literasi ilmiah, pembelajaran berbasis pengalaman, wisata edukatif

Abstract

Penelitian ini bertujuan untuk menganalisis pelaksanaan kegiatan ziarah wali dan kunjungan ke Goa Maharani Zoo sebagai media pembelajaran berbasis pengalaman dalam membangun literasi spiritual dan ilmiah peserta didik. Pendekatan penelitian yang digunakan adalah kualitatif deskriptif dengan teknik pengumpulan data melalui observasi, wawancara, dan dokumentasi. Hasil penelitian menunjukkan bahwa kegiatan ziarah wali memberikan kontribusi signifikan dalam penguatan literasi spiritual melalui pengalaman reflektif dan internalisasi nilai-nilai keagamaan. Sementara itu, kunjungan ke Goa Maharani Zoo berperan dalam pengembangan literasi ilmiah melalui observasi langsung terhadap fenomena alam dan keanekaragaman hayati. Integrasi kedua kegiatan tersebut menghasilkan pembelajaran yang holistik, seimbang antara aspek kognitif, afektif, dan psikomotorik.

Keywords

Spiritual literacy, scientific literacy, experiential learning, educational tourism.

Abstract

This study aims to analyze the implementation of the Wali pilgrimage and visit to the Maharani Zoo Cave as experiential learning media in building students' spiritual and scientific literacy. The research approach used is descriptive qualitative with data collection techniques through observation, interviews, and documentation. The results show that the Wali pilgrimage activity makes a significant contribution to strengthening spiritual literacy through reflective experiences and internalization of religious values. Meanwhile, the visit to the Maharani Zoo Cave plays a role in developing scientific literacy through direct observation of natural phenomena and biodiversity. The integration of these two activities results in holistic learning, balanced between cognitive, affective, and psychomotor aspects.

INTRODUCTION

Literacy is a fundamental skill essential to modern human life, encompassing not only reading and writing but also the ability to understand, analyze, and interpret various life phenomena (Goldman et al., 2016; Yi, 2021). In the context of education, literacy has evolved into various types, including spiritual literacy and scientific literacy. Spiritual literacy relates to the understanding of religious values, morals, and the meaning of life, while scientific literacy relates to the ability to rationally comprehend scientific concepts and natural phenomena (Chowdhury, 2018; Zidny et al., 2020). Both are crucial in

developing a holistic and balanced individual. The increasingly complex developments of the modern era demand the integration of spiritual and scientific aspects in the learning process (Nasucha et al., 2023; Putra et al., 2025; ST, 2025). Therefore, an innovative and contextual approach is needed to develop both types of literacy. One approach that can be used is through direct experience-based activities. Activities such as religious tourism and educational tourism are effective alternatives for building literacy holistically.

Pilgrimages to saints are a religious tradition with high spiritual value in Indonesian society, particularly within the context of Nusantara Islam (Hati et al., 2025; Uyuni et al., 2024). This activity is not only intended for prayer but also as a means of self-reflection and strengthening religious values. On the other hand, educational tours such as the Maharani Cave Zoo offer learning experiences based on an introduction to the natural environment, geology, and biodiversity. The combination of pilgrimages to saints and a visit to the Maharani Cave Zoo can be a unique and integrative learning medium. Participants gain not only a spiritual experience but also direct scientific knowledge. This aligns with the concept of contextual learning that connects theory with real-world practice (Aydin-Ceran, 2021; Budiarto et al., 2025). Thus, this activity has great potential for developing comprehensive literacy. This integration is also relevant to the needs of 21st-century education, which emphasizes meaningful learning experiences.

However, the reality on the ground shows that pilgrimages to saints are often understood as mere rituals without strengthening literacy aspects. Many participants join the pilgrimage without understanding the historical, philosophical, and educational value of the activity. Furthermore, visits to educational tourist attractions like the Maharani Cave Zoo are often not optimally utilized as a means of scientific learning. These activities tend to be merely recreational activities without directed educational support. The lack of integration between spiritual and scientific aspects in these activities is a major problem. Furthermore, the lack of learning designs that combine both aspects results in underdevelopment of literacy potential. This indicates a gap between potential and implementation in the field. Therefore, efforts are needed to optimize both activities within the framework of literacy development.

Several previous studies have examined the importance of literacy in various learning contexts. Research on spiritual literacy shows that religious activities can

increase students' moral awareness and religious values. Meanwhile, research on scientific literacy highlights the importance of experiential learning in enhancing understanding of scientific concepts. Several studies have also examined educational tourism as an effective learning medium for increasing learning interest. Furthermore, there is research linking religious tourism activities with character development. However, most of this research has been conducted separately between the spiritual and scientific aspects. The integration of these two aspects into a single learning activity has rarely been studied in depth. This suggests there is still room for more comprehensive research.

Based on this study, it can be seen that there is still a research gap in integrating spiritual literacy and scientific literacy through contextual activities. This study offers a new approach by combining a pilgrimage to a saint and a visit to the Maharani Cave Zoo as an integrated learning medium. The uniqueness of this research lies in its effort to construct a learning experience that does not only focus on one aspect, but integrates two dimensions of literacy simultaneously. Furthermore, this study also emphasizes direct experience as the basis for meaningful learning. This approach is expected to provide new contributions to the development of learning models based on educational and religious tourism. Thus, this research has novel value in the context of literacy integration. This also differentiates it from previous studies that tend to be partial.

Based on the above description, this study aims to examine how the pilgrimage to the saints and the visit to the Maharani Cave Zoo can be used as a medium for developing spiritual and scientific literacy. This study also attempts to describe the process of integrating these two types of literacy in experiential learning activities. Furthermore, this study aims to identify the benefits obtained by participants from these activities. The main argument in this study is that the integration of spiritual and scientific aspects can produce more holistic and meaningful learning. With the right approach, this activity can become an innovative model for literacy development. This research is also expected to contribute to the world of education, particularly in the development of contextual learning methods. Furthermore, the results of this study can serve as a reference for educational practitioners in designing similar activities. Thus, this study has strong theoretical and practical relevance.

METHOD

This study uses a qualitative approach with a descriptive type of research, which aims to understand in depth the process of developing spiritual and scientific literacy through the activities of pilgrimages and visits to the Maharani Cave Zoo (Aspers & Corte, 2019). This approach was chosen because it is able to describe the phenomenon contextually and naturally according to the conditions in the field. The research subjects consisted of participants, facilitators, and management parties involved in the implementation of the activity. Data collection techniques were carried out through participatory observation, in-depth interviews, and documentation. Observations were conducted to directly observe the activities of participants during the activity. Interviews were used to explore the experiences, understanding, and perceptions of participants regarding the literacy acquired (Maher & Dertadian, 2018). Documentation in the form of photographs, activity notes, and supporting materials were used to complement the data. The data obtained were then collected systematically for further analysis.

Data analysis was conducted using interactive analysis techniques, including data reduction, data presentation, and conclusion drawing. Data reduction was performed by selecting and focusing data relevant to the research objectives. The data was then presented in descriptive narrative form for easy understanding and explanation. The conclusion-drawing process was carried out in stages, taking into account patterns and relationships between data (Wickham, 2016). To maintain data validity, this study employed source and method triangulation techniques. Furthermore, the researcher conducted member checks with informants to ensure data accuracy. The research process was conducted systematically and continuously, from data collection to analysis. Thus, the research results are expected to have high validity and credibility and be able to provide a comprehensive picture of the phenomenon being studied.

RESULTS AND DISCUSSION

Results

Implementation of pilgrimage activities and visits to the Maharani Cave Zoo as an experience-based learning medium

The implementation of the pilgrimage to the saints and the visit to the Maharani Cave Zoo as an experiential learning medium is a form of innovation in the world of education that prioritizes direct student involvement. Learning takes place not only in the classroom but also outside the classroom through real interactions with the social, cultural, and natural environment. This activity is designed to provide an authentic learning experience so that students are able to learn theory through direct practice. In this context, experiential learning becomes highly relevant because it can increase deeper understanding. Students do not only receive information passively, but actively participate in the learning process. This aligns with the concept of experiential learning, which emphasizes experience as the primary source of learning. Thus, this activity serves as an alternative strategy in developing student competencies holistically. The implementation of this activity also takes into account aspects of planning, implementation, and evaluation systematically.

The planning stage is a crucial initial step in implementing this activity. Teachers and school officials develop an activity plan that includes learning objectives, materials to be delivered, and methods to be used. Planning also involves identifying pilgrimage sites for saints with strong historical and spiritual significance. Furthermore, a visit to the Maharani Cave Zoo is designed to support scientific learning related to the environment and biodiversity. During this stage, teachers also prepare learning instruments such as observation sheets and reflection guides. Students are briefed before the activity to ensure they understand the objectives. Thorough planning will determine the success of the activity in the field. Therefore, coordination between teachers, students, and relevant parties is crucial. With good planning, activities can run effectively and efficiently.

During the implementation phase, the pilgrimage to the saints involves visiting sites of significant religious and historical significance. Students are encouraged to understand the meaning of the pilgrimage, not just as a ritual, but also as a means of

spiritual learning. They are provided with explanations of the saints' histories, exemplary values, and the relevance of these teachings to everyday life. Throughout the activity, students are also encouraged to reflect on their experiences. Direct interaction with the religious environment provides a profound emotional experience. This is one of the advantages of experiential learning. Students can experience firsthand the spiritual atmosphere, a feeling unattainable in the classroom. This makes the learning process more meaningful.

A visit to the Maharani Cave Zoo provides a unique yet complementary learning experience. Students are invited to directly observe natural phenomena, cave structures, and the various animals found within. This activity provides an opportunity for students to develop scientific literacy through observation and exploration. The teacher acts as a facilitator, guiding students in understanding scientific concepts. Students are also given the task of recording observations as part of the learning process. Interaction with the natural environment helps foster curiosity and critical thinking skills. Furthermore, this activity raises awareness of the importance of environmental protection, thus making learning more contextual and relevant.

The integration of the pilgrimage to the saints and the visit to the Maharani Cave Zoo is a key strength of this learning experience. Both activities provide complementary experiences, combining spiritual and scientific aspects. Students not only learn about religious values but also understand natural phenomena scientifically. This integration creates a balanced learning experience between cognitive, affective, and psychomotor aspects. Teachers play a crucial role in connecting these two experiences to form a coherent whole. The integration process is carried out through discussion and joint reflection after the activity. Students are encouraged to relate their spiritual experiences with scientific understanding. This helps them build a more comprehensive understanding, thus making learning more meaningful and memorable.



Figure 1 Pilgrimage of the Saints

Activity evaluation is conducted to determine the extent to which learning objectives have been achieved. Teachers assess observation results, reflection notes, and student participation during the activity. Evaluation focuses not only on cognitive aspects but also includes affective and psychomotor aspects. Students are also given the opportunity to share their experiences and impressions of the activity. This is an essential part of experiential learning. Student feedback is used to improve future implementation of the activity. A comprehensive evaluation will provide a clear picture of the activity's effectiveness. This way, the activity can be continuously developed and improved.

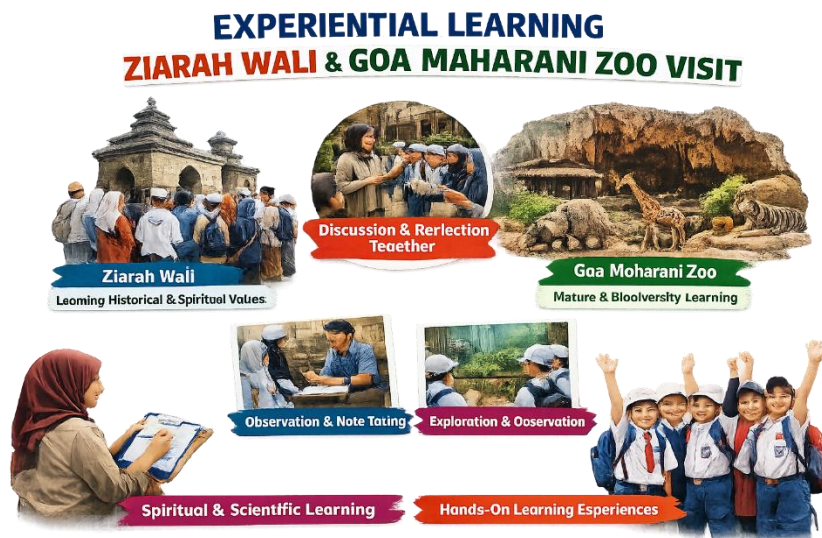
Experiential learning through this activity also has a positive impact on students' motivation. They become more enthusiastic and active in participating in the learning process. The hands-on experience gained makes learning more engaging and less boring. Furthermore, students also understand the material more easily because it is linked to real-life experiences. This demonstrates that learning doesn't always have to take place in the classroom. The surrounding environment can be utilized as an effective learning resource. With this approach, students become more independent and creative in their learning. This positive impact is one indicator of the activity's success.



Figure 2 Maharani Zoo Visit

Based on interviews with one of the teachers and the principal, it was found that this activity provided significant benefits for students. The teacher stated that students understood the material more easily because they learned through direct experience. Meanwhile, the principal added that this activity effectively integrated spiritual and scientific values. They also assessed that learning became more lively and meaningful. Furthermore, this activity also improved students' character and attitudes. The teacher and principal agreed that activities like this need to be further developed. This demonstrates the positive impact of experiential learning. Therefore, this activity is worthy of being used as an innovative learning model.

The implementation of the pilgrimage to the saints and the visit to the Maharani Cave Zoo as a medium for experiential learning has shown positive results. This activity is able to integrate spiritual and scientific aspects into a complete learning series. Students gain meaningful and contextual learning experiences. In addition, this activity also increases student motivation and participation in learning. The role of the teacher as a facilitator is key to the success of this activity. With good planning, implementation, and evaluation, this activity can become an effective learning model. Therefore, experiential learning needs to be continuously developed in the world of education. This is in line with the demands of 21st-century education, which emphasizes innovative and meaningful learning.



Integration of spiritual and scientific literacy in pilgrimage activities and educational tourism

The integration of spiritual and scientific literacy is a learning approach that promotes a balance between religious values and rational knowledge within a unified learning process. In the context of modern education, this approach is crucial for developing individuals who are not only intellectually intelligent but also possess spiritual depth. Spiritual literacy helps students understand the meaning of life, moral values, and the relationship between humans and God. Meanwhile, scientific literacy provides the ability to understand natural phenomena in a logical, systematic, and evidence-based manner. These two types of literacy are often taught separately, creating a dichotomy in students' thinking. Therefore, integrating the two is a solution to create a more complete and holistic learning experience. One form of implementation of this integration is through pilgrimages to saints and educational tourism. This approach allows students to learn through meaningful, hands-on experiences.

The pilgrimage to the saints holds great potential for developing students' spiritual literacy. In this activity, students not only engage in ritual activities but also study the history, exemplary behavior, and values of the saints' struggles in spreading Islamic teachings. This process encourages self-reflection and a deeper understanding of life's values. Furthermore, the pilgrimage to the saints provides emotional and spiritual

experiences not readily available through classroom learning. Students are invited to experience a religious atmosphere that can strengthen their faith and piety. In the context of literacy, this experience helps students interpret spiritual values more concretely. Thus, spiritual literacy is not merely theoretical but also applicable. This serves as an important foundation for character development in students.

On the other hand, educational tours such as a visit to the Maharani Cave Zoo significantly contribute to the development of scientific literacy. Participants are invited to directly observe various natural phenomena, such as the cave's geological structure, ecosystems, and biodiversity. This observation process encourages students to think critically and analytically. They not only observe but also try to understand the cause-and-effect relationships of the observed phenomena. Teachers participate by guiding students so they can convey these experiences using the scientific concepts they have learned. Furthermore, these activities also foster curiosity and interest in science. Scientific literacy developed through direct experience tends to be easier to understand and remember. Thus, educational tours are an effective tool for science learning.

The integration of spiritual and scientific literacy occurs when students are able to connect their pilgrimage experiences with the scientific understanding gained during educational tours. For example, students can understand that the beauty and order of nature they observe are signs of God's greatness. This process helps students develop integrative thinking, combining aspects of faith and science. They no longer view science and religion as contradictory, but as complementary. This integration also encourages students to develop a broader perspective on life. Thus, learning becomes more meaningful and contextual. This integration process is usually carried out through discussion, reflection, and directed assignments. Teachers play a crucial role in facilitating this process.

The role of teachers in integrating spiritual and scientific literacy is crucial. Teachers serve not only as transmitters of material but also as facilitators who guide students' learning experiences. During pilgrimages to sacred shrines, teachers help students understand the spiritual values inherent in each activity. Meanwhile, during educational tours, teachers guide students in interpreting natural phenomena scientifically. Teachers are also tasked with connecting the two experiences to create a coherent whole. This requires strong pedagogical skills and creativity in designing

learning. Furthermore, teachers need to provide space for students to discuss and reflect. This ensures the integration process can proceed optimally. The role of teachers is key to the success of this learning process.

The integration of spiritual and scientific literacy also has a positive impact on students' character development. They not only become more intellectually intelligent but also develop wiser and more ethical attitudes. Spiritual experiences help foster humility, empathy, and self-awareness. Meanwhile, scientific experiences train logical and systematic thinking skills. The combination of the two produces individuals with a balanced heart and mind. Furthermore, students become more concerned with the environment and others. This demonstrates that learning is not solely oriented toward knowledge but also toward character development. Thus, integrated literacy provides broad benefits for students.

Despite its numerous benefits, the implementation of the integration of spiritual and scientific literacy still faces various challenges. One of these is teachers' lack of understanding in effectively combining these two aspects. Furthermore, limited time and facilities also hinder the implementation of experience-based activities. Not all schools have the opportunity to conduct such out-of-class activities. Furthermore, careful planning is required to ensure that activities run in accordance with learning objectives. Another challenge is ensuring that students truly understand and internalize the experiences they gain. Therefore, appropriate strategies are needed to overcome these various obstacles. Support from various parties is also essential.

The communication of spiritual and scientific literacy through pilgrimages and educational tourism is an innovative and relevant approach to current educational needs. This approach overcomes the dichotomy between science and religion and creates a more holistic learning experience. Students gain not only knowledge but also meaningful experiences. This integration also contributes to the formation of balanced character and personality. With teacher support and a conducive environment, these activities can be implemented effectively. Therefore, integrated literacy needs to be continuously developed in various learning contexts. This aligns with the goal of education, which is not only to educate but also to humanize people. Thus, learning becomes more relevant and has a long-term impact.

Discussion

The results of the study on the implementation of the pilgrimage of saints and visits to the Maharani Cave Zoo as media for experiential learning show a strong connection with modern literacy theory. From the perspective of Literacy Studies, literacy is no longer understood narrowly as the ability to read and write, but has evolved into the ability to understand, interpret, and make sense of various experiences in social and cultural contexts. This is in line with research findings that show that students gain understanding through direct experience. Literacy in this context is contextual and experience-based. Students not only read texts, but also "read reality" through interactions with the environment. Thus, the results of this study support the contemporary multidimensional literacy paradigm. This shows that the experiential learning approach is relevant to the development of current literacy theory.

When linked to the Experiential Learning theory proposed by David A. Kolb, the results of this study indicate significant well-being. This theory emphasizes that learning occurs through a cycle of concrete experience, reflection, conceptualization, and active experimentation. During pilgrimages and educational tours, students experience the experience directly (real experience), then reflect, understand the meaning, and teach it using the concepts learned. This process is clearly visible in the discussion and reflection activities after the visit. Thus, this study not only supports the experiential learning theory but also provides empirical evidence in the context of religious-based education and educational tours. This reinforces the fact that direct experience is an effective learning resource.

In the context of spiritual literacy, the results of this study also align with the concept of Spiritual Literacy, which emphasizes an individual's ability to understand the meaning of life, moral values, and relationship with God. Visiting saints has been shown to increase students' spiritual awareness through emotional and reflective experiences. Students not only understand religious teachings theoretically but also experience them directly. This aligns with the view that spiritual literacy develops through experience, not just memorization. Thus, this study supports the theory that spiritual literacy is transformative. The learning process not only produces knowledge but also changes attitudes and values.

Meanwhile, in terms of scientific literacy, the findings of this study align with the concept of Scientific Literacy, which emphasizes the ability to understand natural

phenomena logically and evidence-based. A visit to the Maharani Cave Zoo provided hands-on experience that enabled students to observe, analyze, and draw conclusions. This aligns with the constructivist approach to science learning. Students construct knowledge through interactions with their environment. Therefore, this study reinforces the theory that scientific literacy is more effectively developed through contextual learning. Direct experience has been shown to enhance deeper conceptual understanding.

Interestingly, this study also demonstrates the integration of spiritual and scientific literacy, which in many theories are still dichotomously separated. From an Integrated Education perspective, this integration is a crucial approach to creating holistic learning. The results show that students are able to understand natural phenomena with religious values. This demonstrates that science and religion do not have to be at odds. Instead, they can complement each other in forming a holistic understanding. These findings strengthen the integration of science in modern education.

However, this study also provides new findings that enrich literacy theory. Literacy is often understood in a classroom or text-based context. This research demonstrates that literacy can be developed effectively through experiential, out-of-class activities. This demonstrates the expansion of the meaning of literacy to be more contextual and applicable. Furthermore, the integration of spiritual and scientific literacy within a single activity has rarely been studied in depth. Therefore, this research makes a new contribution to the development of experiential literacy theory.

Another interesting finding is the teacher's role as a facilitator in the literacy integration process. In constructivist theory, teachers act as guides who help students construct knowledge. The results of this study indicate that the success of literacy integration depends heavily on the teacher's ability to guide reflection and discussion. This suggests that literacy depends not only on methods but also on educator competence. Thus, this study strengthens the theory of the teacher's role in active learning.

Overall, the results of this study not only support existing literacy theories but also offer new perspectives on their development. The integration of spiritual and scientific literacy through experiential learning is an innovation relevant to the needs of 21st-century education. This research demonstrates that literacy can be developed more effectively through a contextual and holistic approach. Therefore, it can be concluded that

the results of this study both support and enrich literacy theories. These findings open up opportunities for the development of more integrative learning models in the future.

CONCLUSION

The implementation of the pilgrimage to the saints and a visit to the Maharani Cave Zoo as an experiential learning medium has proven effective in building the integration of spiritual and scientific literacy in students. This activity not only improves cognitive understanding but also strengthens the affective aspect and character formation through meaningful direct experiences. The results of the study indicate that this approach is in line with modern literacy theory and Experiential Learning, while also providing a new contribution in the form of integrating two dimensions of literacy in one contextual learning model. With systematic planning, implementation, and evaluation, this activity can increase learning motivation, critical thinking skills, and spiritual awareness in students. Therefore, this learning model is worthy of being developed as an educational innovation that is relevant to the demands of the 21st century.

REFERENCE

- Aspers, P., & Corte, U. (2019). What is qualitative in qualitative research. *Qualitative Sociology*, 42(2), 139–160.
- Aydin-Ceran, S. (2021). Contextual learning and teaching approach in 21st century science education. *Current Studies in Social Sciences*, 160–173.
- Budiarto, M. K., Nahrowi, N., Alim, R. F., Santoso, A. R. W., & Aini, I. Q. (2025). Bridging Theory and Practice: The Implementation of Case-Based Contextual Teaching and Learning in Higher Education. *Epistema*, 31–43.
- Chowdhury, M. (2018). Emphasizing morals, values, ethics, and character education in science education and science teaching. *MOJES: Malaysian Online Journal of Educational Sciences*, 4(2), 1–16.
- Goldman, S. R., Britt, M. A., Brown, W., Cribb, G., George, M., Greenleaf, C., Lee, C. D., Shanahan, C., & READi, P. (2016). Disciplinary literacies and learning to read for understanding: A conceptual framework for disciplinary literacy. *Educational Psychologist*, 51(2), 219–246.
- Hati, L. P., Indra, F., Sikumbang, A. T., Sitompul, A., & others. (2025). Between Cult and Spirituality: A Theological Interpretation of Pilgrimage Practices at Sacred Sites in the Nusantara. *Pharos Journal of Theology*, 106(4).

- Maher, L., & Dertadian, G. (2018). Qualitative research. *Addiction*, *113*(1), 167–172.
- Nasucha, M. R., Khozin, K., & Thoifah, I. (2023). Synergizing islamic religious education and scientific learning in the 21st century: A systematic review of literature. *Jurnal Pendidikan Agama Islam (Journal of Islamic Education Studies)*, *11*(1), 109–130.
- Putra, F. H., Maharani, N. F., Bodori, S., & others. (2025). Synergy between spiritual education and quality management in the modern era. *Journal of Quality Assurance in Islamic Education (JQAIE)*, *5*(1), 1–10.
- ST, I. S. (2025). Integration of Interdisciplinary and Multidisciplinary Paradigms in Islamic Education: Efforts to Build Synergy between Religious Sciences, Social Sciences, and Modern Science to Answer the Challenges of Civilization. *Proceeding of International Conference on Islamic and Interdisciplinary Studies*, *4*, 198–202.
- Uyuni, B., Arief, K. M., Adnan, M., Hamid, A., & Sutiono. (2024). Exploration of wali-songo (nine saints) ziyarat in Indonesia from religious tourism (pilgrimage) perspective. *Cogent Arts & Humanities*, *11*(1), 2395110.
- Wickham, H. (2016). Data analysis. In *Ggplot2: Elegant graphics for data analysis* (pp. 189–201). Springer.
- Yi, Y. (2021). Establishing the concept of AI literacy. *Jahr–European Journal of Bioethics*, *12*(2), 353–368.
- Zidny, R., Sjöström, J., & Eilks, I. (2020). A multi-perspective reflection on how indigenous knowledge and related ideas can improve science education for sustainability. *Science & Education*, *29*(1), 145–185.