



## **Preserving *Jamjaneng* Art through an Ethnoscience Approach: Educating about Cultural Harmony and Natural Sciences**

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### **Abstract**

**Background:** Traditional *Jamjaneng* art is increasingly marginalized amid globalization, reducing young people's engagement with local cultural heritage. Educational practices often separate culture from science, causing learning to feel abstract and disconnected from daily life. An ethnoscience approach offers a humanistic pathway to preserve *Jamjaneng* while contextualizing natural science concepts through culturally meaningful experiences.

**Aims:** This community service activity aimed to revitalize *Jamjaneng* art by integrating ethnoscience into educational and cultural practices, fostering cultural awareness, scientific literacy, and intergenerational engagement among the younger generation, educators, and local art practitioners.

**Methods:** The program employed a participatory ethnoscience-based approach consisting of identification, analysis, training, mentoring, and evaluation stages. Activities involved art practitioners, teachers, students, and community members through interviews, contextual science mapping, workshops, reflective mentoring, and participatory evaluation forums to ensure meaningful integration of *Jamjaneng* art and scientific learning.

**Result:** The results showed increased enthusiasm and participation among youths and artists, improved understanding of ethnoscience concepts, and stronger appreciation of *Jamjaneng* as a learning medium. Pre- and post-assessments indicated notable gains in scientific comprehension, while qualitative reflections revealed strengthened cultural identity and community commitment.

**Conclusion:** This activity demonstrates that ethnoscience effectively bridges culture and science, enabling sustainable *Jamjaneng* preservation and contextual education. The approach holds strong potential for replication, curriculum integration, and policy support, encouraging future initiatives to expand cultural-based science learning across diverse communities. Long-term collaboration between universities, cultural institutions, and communities is recommended to strengthen continuity, documentation, and broader educational impact for future generations and regions.

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### **INTRODUCTION**

Amid the rapid flow of globalisation and modernisation, traditional communities face major challenges in maintaining their regional cultural identity. Across various regions of Indonesia, the preservation of traditional arts has gradually declined, including *Jamjaneng* art (Ani et al., 2019), a cultural heritage with religious and social nuances that once became a tradition in Javanese community life, particularly in Kebumen Regency and its surrounding areas. Field conditions show that the younger generation is increasingly unfamiliar with local cultural symbols. The limited space for the actualisation of traditional arts within the education system and the lack of cultural

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integration in learning have caused local arts to no longer be considered relevant by the younger generation. *Jamjaneng* art is not merely entertainment, but a manifestation of values, history, and knowledge embodied in a living form. Gradually, the community has begun to feel concern over the loss of the younger generation's awareness of traditional arts. *Jamjaneng* artists experience a drastic decline in interest and difficulty in regenerating young performers (Hikmawati et al., 2024). At this point, this community service activity becomes an answer as a form of concern and moral calling to bridge generations with their cultural heritage. To address this need, an ethnoscience approach is an appropriate choice. Ethnoscience combines natural science with local wisdom values (Hamna & BK, 2024; Sudirman et al., 2025). Integrating local cultural values into science learning strengthens students' connection with their environment and increases engagement in science. Through an ethnoscience approach, *Jamjaneng* art can become a contextual and meaningful learning space for the younger generation.

This community service activity aims to bring the younger generation closer to local culture through an ethnoscience approach. The sound of the *rebana* in *Jamjaneng* art can be linked to the concept of sound waves, and the use of natural materials in musical instruments can be explored from the perspective of environmental science. Thus, this activity not only preserves traditional *Jamjaneng* art, but also strengthens the younger generation's understanding of science. In the learning context, integrating local culture such as *Jamjaneng* into science also encourages the creation of a more humanistic education model. Ethnoscience-based learning contributes significantly to students' cultural literacy and character development (Fitri et al., 2024; Sarwi et al., 2025). This community service activity becomes a means of strengthening character and cultural identity. The challenges of implementing ethnoscience are carried out through creative, collaborative, and participatory approaches so that *Jamjaneng* art is not only understood as cultural heritage, but also as a medium for active learning.

In this community service activity, we implemented an educationally based programme for the revitalisation of *Jamjaneng* art through an ethnoscience approach. By involving artists, educators, and the community, it is expected that a learning ecosystem integrated with culture can be established. More than just training, this activity becomes a shared space to create dialogue between science and culture. The preservation of *Jamjaneng* through an ethnoscience approach is expected to restore pride in local culture and provide new meaning to science learning, which has often been considered abstract and distant from community life. By upholding the principle of harmony between culture and science, this community service activity is directed at two main targets, cultural preservation and the strengthening of contextual education. It is hoped that this initiative can become an inspirational model in the development of education based on local wisdom and a real contribution to reviving culture that is nearly forgotten.

## METHOD

This community service activity was designed as a response to public concern regarding the lack of enthusiasm for *Jamjaneng* art, particularly among the younger generation. Each stage implemented in this community service activity represents a form of concern grounded in dialogue, understanding of the socio-cultural context, and academic commitment to bringing about meaningful change. The community service team acted as partners who were present to listen, understand, and jointly formulate solutions through an ethnoscience approach. The following are several steps undertaken in this community service activity:

### *Identification*

The first step carried out in this activity was the identification of needs and mapping of local potential. The identification of needs and mapping of local potential function to design programmes that are appropriate, relevant, and based on the strengths of the local community (McNeish et al., 2022; Santana de Lima et al., 2023). This stage was conducted through participatory observation and in-depth interviews with *Jamjaneng* art practitioners, community leaders, the younger generation, as well as the Tourism and Culture Office of Kebumen Regency. This process helped the community service team to fully understand the real conditions behind the decline in young people's enthusiasm, the lack of performance spaces, and the absence of integration between art and the education sector. In this process, concern became the key to listening to the anxieties of the local community while simultaneously analysing them scientifically in order to build a relevant and applicable framework.

### *Analysis*

The next stage was the analysis of the integration of *Jamjaneng* art using an ethnoscience approach. Ethnoscience is used to connect scientific knowledge with local cultural practices such as community arts and traditions (Rizki et al., 2025; Sari et al., 2023). A multidisciplinary team from the fields of science education and culture conducted mapping of basic science competencies that could be contextualised with practices in *Jamjaneng* art. For example, the concept of sound waves was linked to the sound of the *rebana*, while the selection of natural materials for musical instruments was used as an entry point to understand material properties and their environmental impacts. This analysis became the basis for building functional and meaningful integration between culture and science.

### *Training*

After the analysis stage was completed, the next stage involved training workshops and capacity building that engaged the younger generation and art practitioners. These workshops became spaces for interaction between the world of education and the world of art in an atmosphere of mutual learning and mutual respect. The younger generation was equipped with an understanding of the ethnoscience approach, while art practitioners were given space to share the values and meanings behind *Jamjaneng* art. The ethnoscience approach was used as a reconstruction of local knowledge integrated with science to strengthen cultural context in education (Nur Hikmah et al., 2025). This activity did not only serve as a transfer of knowledge, but also as a means of building emotional connections among partners to create a humanistic and contextual educational ecosystem. The younger generation actively explored *Jamjaneng* art while learning scientific concepts. This learning process was able to create learning experiences that were integrated with daily life. In this atmosphere, the younger generation appeared more enthusiastic, felt closer to science material, and began to understand that science is not always distant from their world.

### *Mentoring*

During the implementation, the community service team conducted intensive and reflective mentoring for the younger generation and art practitioners. This mentoring did not only function as technical monitoring, but also became a forum for dialogue to foster self-confidence, a sense of ownership, and a spirit of collaboration. Every piece of feedback was recorded and used as evaluation material for the development of modules and approaches in the future.

### *Evaluation*

As a form of comprehensive assessment, a participatory reflection and evaluation forum was conducted, bringing together all partners including art practitioners, the younger generation, village officials, and the community service team. In this forum, all parties were invited to openly reflect on the course of the activity, explore what was successful, what was not, and formulate steps for sustainability. The evaluation was conducted qualitatively, focusing on changes in attitudes, understanding, and participant involvement in cultural preservation as well as scientific understanding. At the end of the activity, the community service team handed over visual documentation and development recommendations to the community and local art groups. These materials serve not only as final outputs, but also as a foundation for continuing preservation efforts independently. In addition, continued cooperation with relevant government agencies was pursued so that this approach could be replicated in other areas with similar cultural potential.

With this approach, the method of implementing community service not only addressed technical issues of art preservation, but also represented the real presence of higher education institutions in reconnecting culture, education, and the younger generation. Each stage was the result of dialogue and collective thinking with partners, with the hope that the younger generation would not only recognise *Jamjaneng* art as heritage, but also experience it as part of their identity and as knowledge relevant to their lives. The ethnoscience approach affirms that the integration of local culture into ethnoscience learning is able to produce a younger generation that is proud of and emotionally connected to the cultural heritage of their nation (Muliadi et al., 2025).

## RESULTS AND DISCUSSION

### Results

In the era of globalisation, characterised by rapid developments in technology and information, traditional arts are often marginalised within formal educational spaces. This situation causes a disconnection between the younger generation and their local cultural heritage. In fact, traditional arts are not merely aesthetic expressions, but are also rich in educational and scientific values that can be utilised in learning. One promising approach to bridging this gap is ethnoscience, namely the integration of science and local culture. Through this approach, learning becomes not only more contextual and engaging, but also rebuilds emotional connections between learners and local wisdom. Based on this perspective, the following community service activity was designed to explore the potential of ethnoscience in meaningfully and sustainably integrating traditional *Jamjaneng* art with science learning.

The community service activities conducted indicate that the ethnoscience approach has strong potential in bridging traditional arts with the world of science education. From the initial identification stage, community enthusiasm for involvement was evident, particularly among art practitioners who felt they were given space for *Jamjaneng* artistic activities among the younger generation, who tend to view traditional arts as no longer attractive to them. Interview results showed that more than 80% of art practitioners felt that this art form was no longer recognised by the younger generation consisting of primary and secondary school students. Field observations revealed that the younger generation tends to perceive traditional arts as something outdated and separate from the modern world. However, when it was explained that *Jamjaneng* art has connections with science, particularly in aspects of sound and materials, new interest emerged that had not previously been observed. This indicates that an integrative approach is able to open new perspectives for learners. The ethnoscience approach is able to connect students with the local cultural context and make learning more socially and emotionally relevant. At the stage of integration analysis using the ethnoscience approach, the community service team successfully mapped basic competencies in science learning that could be directly linked to elements within *Jamjaneng* art. Sound waves from the *rebana* were associated with frequency and resonance, while materials used in musical instrument construction such as leather and wood were linked to the physical and chemical properties of natural materials. This learning was structured contextually and derived from local cultural practices. The introduction of *Jamjaneng* art to the younger generation is presented in [Figure 1](#).



**Figure 1.** Introduction of *Jamjaneng* art to the younger generation

From the training activities conducted, 25 participants consisting of the younger generation, art practitioners, and teachers experienced an increase in their understanding of ethnoscience

concepts. Simple pre-tests and post-tests administered showed that 76% of participants experienced an increase in scores of more than 20 points. This serves as evidence that cultural and scientific dialogue can be integrated within contextual educational practice. The integration of culture and science in learning activities not only enhances scientific literacy, but also strengthens character values through contextual experiences. Detailed data on the improvement in understanding are presented in [Table 1](#).

**Table 1.** Data on increased understanding of ethnoscience concepts

Category	Number	Pre-test	Post-test	Description
Younger Generation	12	55	78	10 out of 12 participants (83%) experienced an increase of > 20% points; indicating high interest after cultural practice
Art Practitioners	7	50	73	5 out of 7 participants (71%) experienced a significant improvement; perceived scientific concepts as more relevant
General Participants	6	60	82	All general participants (100%) increased by > 20 points; indicating readiness to integrate into learning
Total/Average	25	55,3	77,6	76% of participants experienced an increase in scores

Active participation of the younger generation in the training became a new finding. Several young participants began to actively ask questions, try playing *Jamjaneng* musical instruments, and independently map scientific concepts from these experiences. Science is not merely theory but can be experienced through artistic practices commonly performed by local communities. This indicates a deeper internalisation of concepts through cultural experiences. Activities based on local culture allow students to build scientific understanding naturally and form strong emotional engagement. From the perspective of art practitioners, the training provided renewed enthusiasm. Art practitioners felt that *Jamjaneng* gained new opportunities because it was not only preserved as a performance, but also recognised as a learning medium within the educational sphere. Some of them expressed willingness to serve as resource persons in nearby schools. Community participation in the preservation of *Jamjaneng* art is presented in [Figure 2](#).



**Figure 2.** Community participation in the preservation of *Jamjaneng* art

## Discussions

The implementation of ethnoscience-based learning in schools and studios took place over two months. The activities involved teachers, art practitioners, and groups of young participants from elementary school students. In this process, students were given tasks to observe and discuss the relationship between *Jamjaneng* musical instruments and scientific concepts. Observation results

showed that this approach increased their engagement and understanding. Ethnoscience-based science learning has been proven to increase learning motivation and make students more active in the learning process (Herayanti et al., 2025). During the implementation process, teachers perceived an increase in students' learning interest. One teacher stated that students who were previously passive became more expressive when invited to learn outside the classroom while listening to *Jamjaneng* performances. Ethnoscience-based learning can strengthen students' cultural literacy and character (Sari et al., 2025).

In the evaluation forum, the majority of participants stated that this activity provided a new experience that was both enjoyable and enlightening. As many as 90% of respondents suggested that this activity should be continued and made a regular school agenda. Qualitatively, this community service activity showed changes in participants' attitudes, from previously being less interested in local arts to becoming more appreciative and feeling a sense of ownership. This change was not only cognitive, but also affective and social. Ethnoscience-based learning is able to facilitate changes in students' attitudes toward local culture and increase their sense of ownership of cultural heritage (Rayis et al., 2023). Dialogue between art practitioners and educators became a meeting point that enriched the perspectives of both parties.

The mentoring carried out during the activities allowed the service team to dynamically adapt the approach. Feedback from participants was used to improve the activity process and simplify scientific terminology so that it was easier for students to understand. Documentation results show that learning activities using the ethnoscience approach also created valuable moments for participants. Many participants felt that this activity awakened a sense of pride in their own culture. Values such as mutual cooperation and togetherness were strongly felt in the learning atmosphere. One major success of this programme was the emergence of a small learning community consisting of young participants who wished to continue preserving *Jamjaneng*. The ethnoscience approach encourages the growth of independent learning communities that play an active role in cultural preservation as well as strengthening science learning (Hikmawati et al., 2020; Rifa'i et al., 2025). This community is committed to holding monthly performances as well as educational sessions related to culture and science, showing that the results of the community service were able to initiate sustainability from the grassroots.

Collaboration with the Department of Tourism and Culture also showed positive prospects. The department expressed interest in adopting this approach in the revitalisation programmes of other traditional arts in Kebumen. This opens opportunities for expanding the impact of community service in the future. When linked to constructivist theory, this activity aligns with the principle that knowledge is built from direct and contextual experiences. Learning through *Jamjaneng* art becomes a strong medium of meaning construction because it involves cultural elements that are close to the lives of the younger generation. Ethnoscience can serve as a bridge between scientific concepts and students' local life experiences, in accordance with constructivist principles (Devia et al., 2025). Within the framework of scientific literacy, this approach successfully broadens the meaning of literacy from merely understanding concepts to skills in critical thinking, communication, and appreciation of local values. This reinforces the idea that scientific literacy does not always have to originate from textbooks, but can also emerge from tradition.



**Figure 3.** Audience meeting with the Department of Tourism and Culture of Kebumen Regency

This community service activity also shows that the ethnoscience approach has potential as a character education strategy. Values such as responsibility, respect, spirituality, and togetherness naturally emerge in every learning process involving traditional arts. In terms of challenges, several technical constraints such as limited documentation equipment and differences in initial perceptions among partners emerged. However, these issues were addressed through intensive communication and flexible as well as humanistic approaches. As a conclusion, this activity proves that synergy between culture and science is not impossible. With social sensitivity, the ethnoscience approach is able to become a bridge between education and cultural preservation and open pathways toward rooted and meaningful education.

#### *Implications*

The findings of this community service activity imply that the ethnoscience approach can serve as an effective and contextually meaningful strategy for preserving traditional arts while simultaneously strengthening science education. Integrating *Jamjaneng* art with scientific concepts enables learners to perceive science as closely connected to their cultural environment, thereby reducing the abstraction often associated with science learning. These implications suggest that culture-based learning models can enhance student engagement, cultural awareness, and scientific literacy, particularly in communities where local wisdom remains a living part of daily life. Moreover, this approach supports educational harmony by positioning culture and science not as separate domains, but as complementary sources of knowledge.

#### *Contribution of Community Service*

This community service activity contributes significantly to cultural preservation and educational innovation by revitalising *Jamjaneng* art through an ethnoscience-based framework. The program empowered art practitioners, educators, and the younger generation to collaboratively reinterpret *Jamjaneng* as both cultural heritage and a learning resource. Beyond preserving artistic practice, this activity fostered intergenerational dialogue, strengthened community ownership of local culture, and provided a replicable model for integrating local wisdom into science education. As such, the program reinforces the role of higher education institutions as facilitators of cultural continuity, community empowerment, and context-based learning.

#### *Limitations*

Despite its positive outcomes, this activity faced several limitations. The scope of implementation was limited to a specific community and a relatively small number of participants, which may restrict broader generalisation. In addition, the evaluation relied primarily on qualitative observations and short-term pre- and post-tests, limiting the ability to measure long-term impacts on cultural engagement and scientific understanding. Technical constraints, such as limited documentation tools and varying initial perceptions among participants, also influenced the depth of

data collection. These limitations indicate that the results should be interpreted within their specific contextual boundaries.

### *Suggestions*

Based on these limitations, future community service and research initiatives are recommended to expand the ethnoscience approach to a wider range of schools and cultural settings, allowing for comparative and longitudinal analysis. The development of structured learning modules and assessment instruments would support more systematic evaluation of learning outcomes. It is also suggested that stronger collaboration be established with local governments and cultural institutions to ensure sustainability and policy integration. By strengthening documentation, evaluation, and institutional support, the preservation of *Jamjaneng* art through ethnoscience can evolve into a sustainable educational model that bridges cultural heritage and science learning more broadly.

### **CONCLUSION**

This community service activity proves that the ethnoscience approach is an effective strategy for integrating local cultural preservation with contextual and meaningful science learning. Through dialogue between art practitioners, educators, and the younger generation, *Jamjaneng* art is not only maintained as a form of cultural expression, but also reinterpreted as a learning resource that strengthens character, scientific literacy, and cultural identity. Changes in attitudes, increased understanding, and the formation of learning communities serve as indicators that this activity has a positive impact cognitively, affectively, and socially. This success demonstrates that cultural preservation does not have to be exclusive, but can instead become an inclusive space that unites traditional values and scientific knowledge. Through reflective and participatory direct experiences, this activity opens new hope for the sustainability of *Jamjaneng* preservation and locally grounded education models in the future.

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### **AUTHOR CONTRIBUTION STATEMENT**

RZ conceptualized the community service program, led the ethnoscience framework design, coordinated field activities, and drafted the original manuscript. RM and IC contributed to data collection, cultural analysis, and integration of *Jamjaneng* art with scientific concepts. KZ and TA assisted in community engagement, training facilitation, and documentation of activities. WM supported data interpretation and refinement of the educational approach. AK contributed to methodological review, critical revision of the manuscript, and validation of cultural and educational perspectives. All authors reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

### **REFERENCES**

Ani, K., Pujiasih, A., & Kusnadi, K. (2019). The Opportunity Spaces in *Jamjaneng* Cultures as the Basis of Creating Works do Janeng Mas Dance. Proceedings of the International Conference on Art and Arts Education (ICAAE 2018). <https://doi.org/10.2991/icaae-18.2019.20>

- Devia, Tika, I. N., & Artawan, P. (2025). The Effect of Ethnoscience-Based Problem-Based Learning on Energy Literacy and Learning Outcomes in High School. *Jurnal Penelitian Pendidikan IPA*, 11(8), 353–361. <https://doi.org/10.29303/jppipa.v11i8.12330>
- Fitri, C. N., Saminan, Safitri, R., Ramadhan, T. M. H., Evendi, & Safrida S. (2024). Ethnoscience-Based Inquiry Learning to Increase Students' Critical Thinking Skills and Collaboration Skills. *Jurnal Penelitian Pendidikan IPA*, 10(11), 8810–8818. <https://doi.org/10.29303/jppipa.v10i11.9736>
- Hamna, & BK, Muh. K. U. (2024). The Effectiveness of Ethnoscience Learning Based on Local Wisdom Values in Elementary Schools. *Madako Elementary School*, 3(2), 165–183. <https://doi.org/10.56630/mes.v3i2.274>
- Herayanti, L., Fuaddunnazmi, F., & Sukroyanti, B. A. (2025). Development of Ethnoscience-Based Teaching Materials to Improve Students' Scientific Literacy. *Jurnal Kependidikan: Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan, Pengajaran Dan Pembelajaran*, 11(1), 365. <https://doi.org/10.33394/jk.v11i1.13429>
- Hikmawati, H., Suastra, I. W., & Pujani, N. M. (2020). Ethnoscience-Based Science Learning Model to Develop Critical Thinking Ability and Local Cultural Concern for Junior High School Students in Lombok. *Jurnal Penelitian Pendidikan IPA*, 7(1), 60–66. <https://doi.org/10.29303/jppipa.v7i1.530>
- Hikmawati, R., Khatin, L. S., Pratama, R. H., & Buana, L. T. (2024). Pendampingan Dokumentasi Cetak dan Digital: Upaya Peningkatan Kapasitas Preservasi Seni Syair Islam Tradisional Kebumen (Jam Janeng) melalui Pendekatan ABCD. *LOKOMOTIF ABDIMAS: Jurnal Pengabdian Kepada Masyarakat*, 2(2). <https://doi.org/10.30631/lokomotifabdimas.v2i2.2695>
- McNeish, R., Albizu-Jacob, A., & Memmoli, C. (2022). Engaging the Community to Effectively Plan and Implement Community-Based Mental Health Programs. *The Journal of Behavioral Health Services & Research*, 49(2), 149–161. <https://doi.org/10.1007/s11414-021-09767-z>
- Muliadi, A., Rokhmat, J., & Sukarso, AA. (2025). Ethnoscience integrated project-based learning model for enhancing students' creative thinking skills and cultural literacy: Expert perspectives and preliminary testing. *International Journal of Innovative Research and Scientific Studies*, 8(3), 3676–3685. <https://doi.org/10.53894/ijirss.v8i3.7376>
- Nur Hikmah, Yohandri, Fitri Arsih, Minda Azhar, & Abdul Razak. (2025). Uncovering the Potential of Ethnoscience in Science Learning to Improve Students' Literacy: A Systematic-Literature Review (2014–2024). *Jurnal Pendidikan IPA Indonesia*, 14(3). <https://doi.org/10.15294/jpii.v14i3.19591>
- Rayis, W. P. A., Herayanti, L., Prayogi, S., & Kurnia, N. (2023). Integration of Ethnoscience in Science Learning: An Ethnoscience Study on the Palm Sugar Production Process. *Lensa: Jurnal Kependidikan Fisika*, 11(2), 97. <https://doi.org/10.33394/j-lkf.v11i2.14455>
- Rifa'i, M., Taufik, L. M., & Novianawati, N. (2025). The Ethnoscience-Based Project Based Learning Model on Learning Outcomes and Scientific Literacy. *ETDC: Indonesian Journal of Research and Educational Review*, 4(4), 1533–1546. <https://doi.org/10.51574/ijrer.v4i4.3843>
- Rizki, I. A., Mirsa, F. R., Islamiyah, A. N., Saputri, A. D., Ramadani, R., & Habibulloh, M. (2025). Ethnoscience-enhanced physics virtual simulation and augmented reality with inquiry learning: Impact on students' creativity and motivation. *Thinking Skills and Creativity*, 57, 101846. <https://doi.org/10.1016/j.tsc.2025.101846>
- Santana de Lima, E., Preece, C., Potter, K., Goddard, E., Edbrooke-Childs, J., Hobbs, T., & Fonagy, P. (2023). A community-based approach to identifying and prioritising young people's mental health needs in their local communities. *Research Involvement and Engagement*, 9(1), 104. <https://doi.org/10.1186/s40900-023-00510-w>
- Sari, F. P., Maryati, M., & Wilujeng, I. (2023). Ethnoscience Studies Analysis and Their Integration in Science Learning: Literature Review. *Jurnal Penelitian Pendidikan IPA*, 9(3), 1135–1142. <https://doi.org/10.29303/jppipa.v9i3.2044>
- Sari, M. K., Suastra, I. W., Tika, I. N., & Redhana, I. W. (2025). Tinjauan Sistematis Efektivitas Pembelajaran Berbasis Etnosains dalam Meningkatkan Literasi Sains pada Pendidikan Dasar dan Menengah. *Jurnal Penelitian Pendidikan IPA*, 11(10), 72–82. <https://doi.org/10.29303/jppipa.v11i10.12092>
- Sarwi, S., Ahmadi, F., Winarto, W., Fathonah, S., & Malasari, M. (2025). The Application of Ethnoscience-Based Thematic-Integrated Book to Enhance Students' Concept Learning

Outcomes and Comprehension of Culture. *European Journal of Education and Pedagogy*, 6(2), 126–132. <https://doi.org/10.24018/ejedu.2025.6.2.923>

Sudirman, S., Sutikno, S., Indriyanti, D. R., Sumarni, W., & Rahayuningsi, M. (2025). Integration of Ethnoscience in Natural Science learning: Literacy Study. *Jurnal Penelitian Pendidikan IPA*, 11(6), 68–77. <https://doi.org/10.29303/jppipa.v11i6.9980>