



TRANSFORMATION OF LOCAL WISDOM AS A LEARNING RESOURCE FOR ENVIRONMENTAL EDUCATION IN ELEMENTARY SCHOOLS THROUGH AN ETHNOPEDAGOGICAL APPROACH

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DOI: 10.15294/piwulang.v14i1.43298

Accepted: February 26th 2026 Approved: June 29th 2026 Published: June 30th 2026

Abstract

The transformation of local wisdom into a learning resource for environmental education is becoming increasingly urgent because environmental learning in elementary schools remains largely theoretical and insufficiently connected to students' socio-cultural realities. As a result, students often fail to relate environmental concepts to their daily lives and local contexts. This study analyzes how ecological values embedded in Ajibarang's local culture, particularly the prohibition against cutting trees on Mount Krikil and the belief in the sacredness of the Kali Manggeng water, are conceptually transformed into environmental learning through an ethnopedagogical approach. A qualitative method with an educational ethnography design was employed to collect data through in-depth interviews, observations, and documentation involving school principals, teachers, and community leaders. The findings reveal that Ajibarang's local culture embodies strong values of conservation, ecological ethics, and environmental spirituality that guide community behavior. Schools have begun to develop initial frameworks for integrating these values into classroom learning, school culture, and the Pancasila Student Profile Project. Teachers and community leaders serve as cultural mediators, translating local beliefs, narratives, and practices into meaningful learning activities. The study concludes that local wisdom holds strong potential as a foundation for more contextual, meaningful, and relevant environmental learning.

Keywords: local wisdom; environmental education; value transformation; elementary school

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P-ISSN 2252-6307 E-ISSN 2714-867X

INTRODUCTION

Local wisdom, often understood as the cultural knowledge and practices characteristic of a particular community, is an important asset in promoting sustainable development. It encompasses traditions, customs, and ecological knowledge that are passed down from generation to generation (Afrizon & Dewi, 2020). In rural communities whose livelihoods are highly dependent on the natural environment, this knowledge plays a crucial role in natural resource management and the maintenance of long-term environmental sustainability (Barton et al., 2021). Despite its significant value, local wisdom is still

rarely integrated into formal education systems, which tend to be oriented toward standardized curricula and are therefore often less aligned with local contexts (Insani & Tan, 2026).

In the Indonesian context, this condition is increasingly relevant under the implementation of the Kurikulum Merdeka, which encourages contextual and meaningful learning. Through the Project to Strengthen the Profile of Pancasila Students (P5), schools are expected to integrate local values, environmental awareness, and character education into learning practices. However, the integration of local wisdom as a structured learning resource within this

framework remains limited (Afrizal & Citraningrum, 2024).

In rural schools, where educational resources and facilities are frequently limited, transforming local wisdom into learning resources can serve as an effective, low-cost, and context-based approach to teaching sustainability (Eliza et al., 2024). In this study, the term “transformation” refers not to altering the substance or meaning of local wisdom, but to recontextualizing and pedagogically reconstructing it into structured learning resources, teaching strategies, and classroom activities. The use of local knowledge enables teachers to connect learning materials with students’ lived experiences and family backgrounds, making environmental education more relevant and meaningful (Biantara & Thohir, 2022). Numerous studies indicate that students are more likely to adopt sustainable practices when these values and practices are closely linked to local culture and their everyday activities. This suggests that transforming local cultural values into curriculum content can enhance the effectiveness of environmental education in rural areas (Fauziah et al., 2023).

Awareness of the importance of place-based education has been increasingly developing and is highly aligned with the approach of transforming local wisdom. Place-based education emphasizes learning that is rooted in students’ social and ecological environments. In the context of rural elementary schools, students tend to have strong relationships with land, natural resources, and local cultural practices that are actively maintained within their communities. Therefore, a place-based approach provides an ideal framework for teachers to transform local wisdom into ecological learning resources, such

as through direct observation, traditional stories, or customary conservation practices (Long, 2020). Local wisdom offers a rich foundation for this approach because it enables students to learn sustainability through concrete examples that are closely connected to their everyday lives (Nofrizal et al., 2024). This approach is also highly compatible with the P5 framework, particularly in themes such as sustainable lifestyle and environmental stewardship, where students are encouraged to engage in real-world, project-based learning grounded in local contexts.

However, global and national education policies related to sustainability often do not fully take into account the specific characteristics of rural communities. Overly standardized curricula may overlook local ecological potential and the environmental challenges that students face on a daily basis (Suastra et al., 2024). The mismatch between global educational frameworks and local realities can reduce student engagement and eliminate opportunities to develop authentic environmental awareness (Purnomo, 2023). The transformation of local wisdom into learning resources offers a solution to this gap, as it enables schools to develop environmental education that is inclusive, contextual, and culturally grounded (Dewi et al., 2022). Within the Kurikulum Merdeka, such transformation becomes even more strategic, as it supports flexible curriculum implementation and encourages teachers to design learning experiences that are relevant to students’ socio-cultural environment.

Within the discourse of sustainable development, innovation and adaptability are often emphasized as key priorities (Hasan et al., 2024). Nevertheless, traditional knowledge systems such as local wisdom are frequently

marginalized in these discussions. In fact, in rural contexts, cultural values and traditional ecological practices serve as crucial foundations for environmental conservation. Transforming local wisdom into the environmental education curriculum at the elementary school level can bridge modern scientific knowledge with the community's cultural value systems. This approach ensures that education for sustainability is not only future oriented but also deeply rooted in the identity, culture, and local ecology where students grow and learn (Olsen et al., 2020). Thus, transformation in this study also implies a shift in the mode of delivery from informal, community-based transmission to formal, structured, and pedagogically guided learning without losing its original cultural essence.

Ajibarang District in Central Java is one of the regions experiencing ecological pressure due to cement mining activities. The resulting impacts include declining water quality, loss of vegetation, increased risks of landslides, and reduced biodiversity. These degraded ecological conditions demand educational strategies that go beyond knowledge transfer and instead foster early ecological awareness among students through approaches that are relevant to their environmental context.

The gap between the potential of local values and actual classroom practices indicates the need for a model capable of bridging local culture with the demands of modern education. One relevant approach is ethnopedagogy, which views culture as a source of values, methods, and knowledge that can be transformed into learning processes.

On the other hand, the Ajibarang community possesses various forms of local wisdom that embody strong ecological values.

For example, the prohibition against cutting trees in the Mount Krikil area and the belief that the water of Kali Manggeng is sacred and must be protected. These values reflect a harmonious relationship between humans and nature and function as social control systems to maintain ecological balance. However, such local wisdom has not yet been fully utilized as a learning resource within formal education, particularly in environmental education at the elementary school level. Integrating these values into P5-based projects provides a concrete opportunity for students to internalize ecological ethics through experiential learning activities.

Environmental education in elementary schools plays a vital role in shaping ecological character from an early age. Through an ethnopedagogical approach, learning can be connected to local cultural values that are actively practiced within the community (Putu et al., 2025). This approach allows students to learn about environmental conservation while also understanding the cultural meanings that instill responsibility toward nature. Thus, ethnopedagogy-based environmental education not only conveys scientific knowledge but also cultivates ecological values, attitudes, and behaviors rooted in students' real-life experiences (Istiawati, 2016).

Previous studies indicate that environmental education in Indonesia is still predominantly dominated by scientific approaches that emphasize cognitive aspects while paying limited attention to the socio-cultural contexts of learners (Prayogo et al., 2024). Research that specifically examines how local wisdom values are transformed into learning resources for environmental education in elementary schools particularly within

communities with strong ecological traditions such as Ajibarang remains very limited. This gap highlights the need for a learning model that systematically connects local cultural values with environmental education through an ethnopedagogical framework (Lestari, 2024; Muzakkir 2021).

Based on these conditions, this study offers novelty in three main aspects. First, conceptually, this research proposes a model for transforming local wisdom into environmental education learning resources through an ethnopedagogical approach. This transformation explicitly involves pedagogical reconstruction (how values are taught) rather than modification of cultural content (what values are taught). This model integrates local cultural values with pedagogical practices to build students' ecological awareness in a contextual and meaningful way. Second, contextually, this study is conducted in Ajibarang District, Banyumas Regency, which possesses a wealth of cultural values such as prohibitions against tree cutting, respect for water, and traditions of mutual cooperation that have long taught ecological principles across generations. This context provides a new contribution to ethnopedagogical studies, as limited research has explored the transformation of Ajibarang's local values into environmental learning at the elementary school level. Third, practically, this study positions local wisdom as a learning resource that teachers can adapt in instructional activities, whether through cultural narratives, project-based activities, or environment based observations grounded in local traditions.

Thus, this research expands the meaning of ethnopedagogy not only as an approach to cultural preservation but also as a pedagogical

strategy for fostering ecological character through the transformation of local values into students' learning experiences.

Based on the background and novelty described above, this study seeks to address the following main research questions: (1) how can the local wisdom values of the Ajibarang community be transformed into learning resources for environmental education through an ethnopedagogical approach in elementary schools, and (2) how does this value transformation contribute to the development of students' ecological awareness.

Accordingly, the objectives of this study are to describe forms of Ajibarang local wisdom that are relevant to environmental conservation, to explain the process of transforming these values into environmental learning, and to analyze their contribution to the formation of students' ecological awareness.

This study is expected to provide both theoretical and practical contributions. Theoretically, the findings enrich discussions on the transformation of ethnopedagogical values in environmental education and contribute to the development of contextual, local wisdom-based learning paradigms (Fa'idah et al., 2024). Practically, this research can serve as a reference for elementary schools in developing meaningful environmental learning rooted in local culture (Iswatiningsih, 2019). In addition, the findings are expected to inform policymakers in designing sustainable environmental education programs grounded in the cultural values of Indonesian society.

METHODS

This study adopts a qualitative approach with an educational ethnographic design to deeply

examine how local wisdom values are transformed into environmental learning in elementary schools. This design is appropriate as it enables the exploration of cultural meanings, ecological practices, and social interactions embedded within the Ajibarang community.

Participants were selected using purposive sampling and consisted of one school principal, one classroom teacher, and two community leaders. Although the number of participants was limited, this study employed a theoretical sampling approach, in which participants were deliberately chosen based on their depth of knowledge, roles, and direct involvement in environmental education and the preservation of local ecological wisdom. The selection prioritized information-rich cases rather than representativeness. Data collection was conducted iteratively, and the process continued until information redundancy was achieved, indicated by the repetition of similar themes and the absence of new emerging insights. Therefore, these four participants were considered sufficient to provide comprehensive and in-depth data relevant to the research objectives.

Data were collected through semi-structured, in-depth interviews focusing on cultural norms related to nature (e.g., prohibitions against cutting trees, beliefs about the sacredness of water sources), cultural practices that can serve as learning resources, teachers' perceptions of value transformation, as well as the challenges and opportunities in implementing these values in classroom practices. Additional data were obtained through document analysis, including school profiles, curriculum documents, and community cultural records.

Data analysis followed the Miles and Huberman interactive model, involving data reduction, data display, and ongoing conclusion drawing. Transcribed data were coded through open, axial, and selective coding to identify core themes related to ecological values, teacher roles, and school readiness in integrating local wisdom. Credibility of the findings was ensured through source triangulation, member checking, and maintaining an audit trail to preserve consistency and trustworthiness of the interpretations.

Table 1. Data Collection Process

No	Type of Information / Data	Data Source	Initials / Age	Key Interview Questions	Focus of Inquiry
1	Local cultural values and ecological traditions	Community Leaders (CL)	WT (65), RS (45)	• What local wisdom values relate to environmental conservation?• What traditional norms or prohibitions exist regarding nature (e.g., Gunung Krikil, Kali Manggeng)?• How have cultural values changed due to industrial activities?	Exploring cultural meanings and the community's role in preserving ecological values
2	Environmental learning policies and practices	School Principal (SP)	SM (55)	• What school policies support environmental education?• How does the school integrate local cultural values into the curriculum?	Understanding school policies and vision for culturally based environmental education
3	Classroom-level environmental	Teacher (T)	IW (40)	• What strategies are used in environmental learning?• How are local values (folklore, traditions,	Describing practical implementation of ethnopedagogical value

l learning practices	communal work) transformed into learning activities?• What challenges arise in implementation?	transformation in environmental learning
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RESULTS AND DISCUSSION

Results

This section presents the research findings obtained through thematic analysis of interview data, contextual observations, and school documents. The results are organized according to the research focus, namely how the local wisdom values of the Ajibarang community are conceptually transformed into learning resources for environmental education in elementary schools. The findings are structured based on the main categories that emerged through the processes of open coding, axial coding, and selective coding, which include: (1) ecological values embedded in Ajibarang local culture, (2) school perceptions and readiness to transform these values, and (3) the role of teachers and community leaders as cultural mediators.

Ecological Values in Ajibarang Local Wisdom

The initial analysis indicates that the Ajibarang community possesses a value system that has traditionally functioned to maintain environmental balance. Community leaders emphasized that the prohibition against cutting trees on Mount Krikil is not merely a traditional belief, but rather a mechanism for forest conservation:

“In the past, there was a prohibition against cutting large trees on Mount Krikil. It was not just a myth, but a way to keep the forest preserved.” (CL)

This quotation illustrates how local traditions function as traditional ecological norms that regulate community behavior toward nature. The ecological values operate on two levels of

meaning: **manifest**, in the form of customary prohibitions aimed at preserving large trees; and **latent**, reflecting the community’s spiritual and moral relationship with the forest.

In addition, beliefs regarding the sacredness of water in Kali Manggeng also contain profound ecological values. A community leader stated:

“The water of Kali Manggeng has been considered sacred since long ago. Elders always said that we must not pollute the water carelessly.” (CL)

This statement underscores the community’s perception of water as a sacred element that must be protected. Such traditions serve as forms of ecological ethics that instill responsibility for water resources. These ecological values indicate that Mount Krikil and Kali Manggeng are not merely geographical spaces, but *living classrooms* that contain ecological knowledge and environmental spirituality as foundational capital for ecological education.

School Perceptions and Readiness to Transform Local Values

School principals revealed that schools have begun to develop curricular frameworks that integrate local cultural values as environmental learning resources:

“We are currently designing learning concepts that incorporate local cultural values so that students can learn from their own environment.” (SP)

This statement reflects an emerging awareness that learning should be more contextual and closely connected to students’

everyday lives. However, several teachers acknowledged that the implementation stage has not yet been fully realized:

"We are still in the stage of designing learning plans based on local wisdom; implementation has not yet taken place." (T)

Teachers perceive that value transformation requires time, collaboration, and the preparation of appropriate instructional tools. Within the context of the *Projek Penguatan Profil Pelajar Pancasila* (P5), a project-based learning teacher explained concrete plans to integrate local values:

"In the next P5 project, we want to raise the theme of Sustainable Lifestyles by linking it to stories about Mount Krikil." (T-PBL)

This quotation indicates that teachers have begun to connect local cultural values with environmental learning through an ethnopedagogical approach, particularly under the Sustainable Lifestyles theme.

To clarify the "how" of this transformation, the study proposes a conceptual transformation model that illustrates a systematic flow from local belief → educational value → classroom activity, showing how abstract cultural meanings are translated into concrete pedagogical practices.

For example: (1) Local belief: prohibition of cutting trees → (2) Educational value: conservation ethics and ecological responsibility → (3) Classroom activity: tree-planting projects, storytelling, and reflective discussion; and (1) Local belief: sacredness of water → (2) Educational value: water conservation and environmental stewardship → (3) Classroom activity: water observation, poster campaigns, and school-based conservation projects.

The Role of Teachers and Community Leaders as Cultural Mediators

Teachers and community leaders play key roles as connectors in the value transformation process. Teachers function as cultural mediators who translate cultural values into pedagogical forms:

"We want education not to be purely theoretical, but also to instill values that live within the community." (SP)

This perspective reflects the view that environmental education in schools should integrate scientific knowledge with local cultural contexts. Cultural leaders provide legitimacy to school initiatives aimed at transforming ancestral values:

"If these values can be taught in schools, children will understand that caring for nature is part of our ancestral teachings." (CE)

Such support strengthens the position of schools as active agents in the transmission of cultural and ecological values, rather than merely as formal instructional institutions.

Overall, the transformation mechanism identified in this study demonstrates that ethnopedagogy operates through a structured process of reinterpretation, contextualization, and pedagogical actualization, ensuring that local wisdom is not only preserved but also functionally integrated into formal education.

Overall, the findings show that Mount Krikil and Kali Manggeng are not only geographical spaces within the lives of the Ajibarang community, but also cultural spaces that contain ecological and spiritual values functioning as moral systems and social controls. These values hold strong potential to be transformed into ethnopedagogy-based

environmental learning resources in elementary schools.

The values derived from Kali Manggeng emphasize water conservation ethics, environmental sanctity, and collective responsibility for natural resources. These values can be transformed into learning activities through contextual approaches and environmental projects (P5). Examples of such transformations are presented in Table 2.

Table 2. Transformative Approaches in Environmental Learning

Approach	Learning Activities	Values Fostered
Local folklore	Students read or listen to stories about Mount Krikil and Kali Manggeng.	Respect for nature, ecological responsibility.
“Sustainable Lifestyles” Project (P5)	Tree planting and creating water-saving posters linked to local symbols	Ecological awareness, conservation behavior
Culture-based field observation	Visits to water sources or school forests while learning about local traditions	Conservation, ecological spirituality, mutual cooperation.

The analysis reveals that Mount Krikil represents values of conservation and ecological responsibility, while Kali Manggeng embodies values of sanctity, sustainability, and ecological solidarity. Together, these sites provide a strong foundation for the development of ethnopedagogy-based ecological learning in elementary schools. These findings reinforce the idea that environmental education should not merely transmit scientific knowledge, but also cultivate ecological awareness and character rooted in local culture, in line with the spirit of

the *Kurikulum Merdeka* and the principles of local wisdom based sustainability education.

DISCUSSION

The findings of this study reinforce the argument that Ajibarang local wisdom particularly the prohibition against cutting trees on Mount Krikil and the belief in the sacredness of water in Kali Manggeng serves ecological functions that are highly relevant as foundations for environmental education. These values align with global findings on *traditional ecological knowledge* (TEK). Recent international research by Coomes & Abizaid (2025) demonstrates that local knowledge systems and belief structures play a crucial role in sustaining tropical species and ecosystems, even in the absence of formal modern conservation programs. This evidence supports the conclusion that the customary prohibition against tree cutting on Mount Krikil functions as an effective forest conservation mechanism.

Furthermore, a systematic review by Sinthumule (2023) confirms that customary practices in traditional societies such as forest-use regulation, protection of water sources, and the designation of sacred areas contribute significantly to biodiversity conservation. These findings are consistent with the Ajibarang community’s belief in the sanctity of Kali Manggeng, which encourages environmentally responsible behavior through moral and spiritual norms.

However, a key pedagogical challenge arises in how teachers explain the “sacredness” of Kali Manggeng to students in a way that remains scientifically valid while still respecting local myth. In this context, teachers need to position sacred narratives not as literal supernatural claims, but as cultural-ecological symbols that

encode conservation ethics, such as the importance of maintaining water quality, protecting watersheds, and sustaining ecosystem balance. By integrating scientific explanations with cultural narratives, students can understand that the “sacredness” reflects ecological functions essential for human survival.

In the educational context, the transformation of local wisdom into environmental learning is also strongly supported by international studies. Nesterova (2020) emphasizes that environmental education becomes more meaningful when it integrates indigenous ways of knowing and TEK, as local values provide ethical and affective foundations that are often absent in purely scientific approaches. This perspective is highly relevant to the efforts of teachers in Ajibarang who have begun incorporating narratives about Mount Krikil into the *Projek Penguatan Profil Pelajar Pancasila* (P5) under the theme of Sustainable Lifestyles.

An empirical study by Matsna et al., (2023) on the Rumbio Forest in Kampar further confirms that traditional ecological knowledge can serve as an effective and contextual learning resource for science education. This finding indicates that ecological values associated with Mount Krikil—such as forest conservation and environmental ethics—are highly suitable for transformation into environmental education content at the elementary school level. Similarly, international research by Salim et al. (2023) shows that TEK not only supports environmental conservation but also enhances community well-being and strengthens the ecological character of younger generations, aligning closely with the objectives of ethnopedagogy-based environmental education.

Thus, the findings of this study are not only relevant within the local context of Ajibarang but are also consistent with international theoretical frameworks and empirical evidence emphasizing the importance of local wisdom in conservation, environmental education, and ecological character formation. Integrating local values into elementary school learning represents a strategic step toward developing environmental education that is contextual, meaningful, and sustainable in Indonesia.

Moreover, the findings must be understood within the tension between modernity and tradition, particularly with the presence of extractive industries such as cement factories near the study area. This situation creates ecological pressure that potentially threatens both the environment and the continuity of local cultural values. In this context, ethnopedagogy can be interpreted as a form of cultural resistance and a survival strategy, where the transmission of local wisdom serves to preserve ecological awareness and community identity amid industrial expansion. By embedding values such as the protection of Mount Krikil and the sacredness of Kali Manggeng into formal education, schools contribute to strengthening students’ critical awareness of environmental sustainability in the face of modern development pressures.

This study offers a distinctive contribution by examining local wisdom in a region experiencing ecological pressure due to extractive industries, where cultural values function as buffers of ecological identity within the community. The novelty of this research lies in its conceptual model of ethnopedagogical value transformation in areas affected by extractive industrial activities. The study extends previous

research by demonstrating that local values associated with Mount Krikil and Kali Manggeng can serve as sources of contextual ecological learning.

Theoretically, these findings enrich the framework of *Education for Sustainable Development* (UNESCO, 2021) by incorporating elements of local wisdom-based pedagogy (Marini & Suharto, 2022). Practically, this research provides direction for elementary schools in rural areas to develop environmental learning that is rooted in local culture and relevant to students' everyday lives.

The implications of this study for learning emphasize that the curriculum should provide explicit space for transforming local cultural values, particularly through the implementation of the *Projek Profil Pelajar Pancasila* under the theme of Sustainable Lifestyles, so that cultural wisdom is not treated as a supplementary element but as an integral pedagogical strategy for fostering ecological awareness and character development. In this framework, teachers play a crucial role as value facilitators who interpret and contextualize local traditions into meaningful ecological learning materials, positioning themselves not merely as transmitters of knowledge but as cultural mediators who reconnect classroom instruction with lived community practices. Furthermore, sustainable value transmission requires strong partnerships between schools and local communities to ensure that ecological practices are grounded in authentic cultural experiences and continuously reinforced beyond the classroom. These implications reinforce the findings of Budiaman et al. (2021), which highlight that synergy between schools and

cultural communities is a key factor in the success of local value-based environmental education.

CONCLUSION

This study concludes that the ecological values embedded in Ajibarang local culture hold strong potential to be transformed into learning resources for environmental education in elementary schools. First, Ajibarang local culture particularly the prohibition against cutting trees on Mount Krikil and the belief in the sacredness of water in Kali Manggeng contains values of conservation, ecological ethics, and environmental spirituality that have long functioned as moral systems within the community. These values provide an important foundation for fostering students' ecological character from an early age.

Second, school perceptions and readiness indicate that the value transformation process remains at a conceptual stage. Schools have identified opportunities to integrate local values into the curriculum and the *Projek Profil Pelajar Pancasila*, but implementation has not yet been fully realized. This finding highlights the need for instructional support and capacity building for teachers to effectively translate cultural values into learning activities.

Third, teachers and community leaders are shown to play critical roles as cultural mediators in the value transformation process. Teachers are responsible for interpreting and recontextualizing cultural values into narratives, activities, and project-based learning, while community leaders serve as sources of cultural legitimacy that ensure ecological values are transmitted in meaningful ways.

Overall, this study affirms that transforming local wisdom through an

ethnopedagogical approach can strengthen environmental learning that is more contextual, meaningful, and relevant for elementary school students, particularly in rural areas.

In terms of policy implications, it is recommended that the local Education Office formalize these findings by developing and mandating a Muatan Lokal (local content curriculum) that systematically integrates Ajibarang ecological wisdom into elementary school learning, particularly within environmental education and Projek Profil Pelajar Pancasila frameworks.

For future research, it is strongly suggested that subsequent studies adopt a quantitative or mixed-method approach to measure the impact of ethnopedagogical learning on students' actual environmental behaviors, such as conservation practices, attitudes toward sustainability, and participation in ecological activities, in order to provide empirical evidence of its effectiveness.

REFERENCES

- Afrizal, M., & Citraningrum, D. M. (2024). Analisis Kebutuhan Pengembangan Buku Ajar Mata Kuliah Kearifan Lokal Pandhalungan. *Piwulang: Jurnal Pendidikan Bahasa Jawa*, 12(1), 11–24. <https://doi.org/10.15294/piwulang.v12i1.72673>
- Afrizon, A., Dewi, W. S., & Dwiridal, L. (2020). Analysis of physics parameters on aerophone musical instruments from Minangkabau as context meaningful learning Analysis of physics parameters on aerophone musical instruments from Minangkabau as context meaningful learning. *Journal of Physics: Conference Series*. <https://doi.org/10.1088/1742-6596/1481/1/012109>
- Barton, A. M. C., Schenkel, K., & Tan, E. (2021). The Ingenuity of Everyday Practice: A Framework for Justice-Centered Identity Work in Engineering in the Middle Grades. *Journal of Pre-College Engineering Education Research (J-PEER) Volume*, 11(1). <https://doi.org/https://doi.org/10.7771/2157-9288.127>
- Biantara, D. O., & Thohir, M. A. (2022). Analisis Komunikasi Siswa Kelas 6 SD Dalam Mengimplementasikan Muatan Lokal Materi Unggah- Ungguh Basa Jawa. *Piwulang: Jurnal Pendidikan Bahasa Jawa*, 10(2), 181–189. <https://doi.org/10.15294/piwulang.v10i2.56609>
- Coomes, O. T., & Abizaid, C. (2025). Pervasive Indigenous and local knowledge of tropical wild species. *Ambio*, 54(4), 680–695. <https://doi.org/10.1007/s13280-024-02100-w>
- Eliza, D., Mulyeni, T., Budayawan, K., Hartati, S., & Khairiah, F. (2024). Creation of Cultural Local Wisdom-Based Picture-Science Stories Application for the Introduction of Scientific Literacy for Early Childhood. *International Journal on Informatics Visualization*, 8(March), 417–424. <http://dx.doi.org/10.62527/joiv.8.1.2234>
- Fa'idah, M. L., Febriyanti, S. C., Masruroh, N. L., Pradana, A. A., & Hafni, N. D. (2024). Integrasi Nilai Kearifan Lokal dalam Membentuk Karakter Siswa di Tingkat Sekolah Dasar. *TA'DIBAN: Journal of Islamic Education*, 4(2), 79–87. <https://doi.org/10.61456/tjie.v4i2.168>
- Fauziah, F. N., Saddhono, K., & Suryanto, E. (2023). Implementation of Local Wisdom-Based Indonesian Learning to Strengthen Pancasila Student Profiles (P5): Case Studies in Vocational High Schools. *Journal of Curriculum and Teaching* 12(6), 283–297. <https://doi.org/10.5430/jct.v12n6p283>
- Hasan, M. F., Monita, D., & Sukiman. (2024). Revitalisation of Rejang tribal local wisdom: integration of cultural values in the operational curriculum innovation of elementary schools in Rejang Lebong, Indonesia. *Education* 3-13, 1–18. <https://doi.org/10.1080/03004279.2024.2318246>
- Muzakkir, M. (2021). Pendekatan Etnopedagogi Sebagai Media Pelestarian Kearifan Lokal. *Jurnal Hurriah: Jurnal Evaluasi Pendidikan Dan Penelitian*, 2(2), 28–39. <https://doi.org/10.56806/jh.v2i2.16>
- Insani, N. H., & Tan, L. (2026). Contextual Knowledge as a Sociocultural Filter in TPACK: Evidence from Pre-service Javanese Language Teachers. *Jurnal Pendidikan Progresif*, 16(1). <https://doi.org/http://doi.org/10.23960/jpp>
- Istiawati, N. F. (2016). Pendidikan Karakter Berbasis Nilai-Nilai Kearifan Lokal Adat Ammatoa Dalam Menumbuhkan Karakter Konservasi. *CENDEKIA: Journal of Education and Teaching*, 10(1), 1. <https://doi.org/10.30957/cendekia.v10i1.78>
- Iswatiningsih, D. (2019). Penguatan Pendidikan Karakter Berbasis Nilai-Nilai Kearifan

- Lokal di Sekolah. *Jurnal Satwika*, 3(2), 155. <https://doi.org/10.22219/satwika.vol3.no2.155-164>
- Lestari, N. (2024). A systematic literature review about local wisdom and sustainability : Contribution and recommendation to science education. *Eurasia Journal of Mathematics, Science and Technology Education*, 20(2). <https://doi.org/10.29333/ejmste/14152>
- Long, M. S. (2020). The familiar stranger of mental health. *The Journal of Mental Health Training, Education and Practice*, 15(4), 237–247. <https://doi.org/10.1108/JMHTEP-08-2019->
- Marini, H., & Suharto, D. G. (2022). Wewowo Local Wisdom in Realizing the Process Sustainable Development. *Jurnal Ilmiah Kajian Kearifan Lokal*, 14(2), 190–204. <https://doi.org/10.26905/lw.v14i2.7892>
- Matsna, M., Ilhami, A., & Handrianto, C. (2023). Traditional Forest-Related Ecological Knowledge and Biodiversity Preservation as Source of Science Learning Based Local Wisdom: The Case Study of Hutan Rumbio in Kampar, Indonesia. *Supernova Science Education Journal*, 1, 1–15.
- Nofrizal, D., Sari, L. P., Purba, P. H., Utaminingsih, E. S., Dwi, A., & Catur, D. (2024). The role of traditional sports in maintaining and preserving regional culture facing the era of society 5.0. *Dialnet*, 352–361.
- Olsen, S. K., Miller, B. G., Eitel, K. B., & Cohn, T. C. (2020). Assessing Teachers' Environmental Citizenship Based on an Adventure Learning Workshop: A Case Study from a Social-ecological Systems Perspective. *Journal of Science Teacher Education*, 31(8), 869–893. <https://doi.org/10.1080/1046560X.2020.1771039>
- Prayogo, W., Ratnaningsih, W., Suhardono, S., & Suryawan, I. W. K. (2024). Environmental Education Practices in Indonesia: A Review. *JSI Journal Of Sustainable Infrastructure* 3(1), 27–37.
- Purnomo, A. R. (2023). Embedding Sustainable Development Goals to Support Curriculum Merdeka Using Projects in Biotechnology. *International Journal of Learning, Teaching and Educational Research*, 22(1), 406–433. <https://doi.org/10.26803/ijlter.22.1.23>
- Putu, N., Parwati, Y., Suastra, I. W., Bagus, I., & Arnyana, P. (2025). Implementasi Etnopedagogi dalam Pendidikan Berbasis Kearifan Lokal di Ubud. *Arthaniti Studies*, 6(1), 9–19. <https://doi.org/10.59672/arhas.v6i1.4317>
- Salim, J. M., Anuar, S. N., Omar, K., Rozaina, T., Mohamad, T., & Sanusi, N. A. (2023). The Impacts of Traditional Ecological Knowledge towards Indigenous Peoples : A Systematic Literature Review. *Sustainability*, 15(1), 824. <https://doi.org/10.3390/su15010824>
- Sinthumule, N. I. (2023). Traditional ecological knowledge and its role in biodiversity conservation : a systematic review. *Front. Environ. Sci.* 11:1164900.
- Suastra, I. W., Suma, K., Agung, A. A. I., & Sudiarmika, R. (2024). Online lectures with local wisdom context : efforts to develop students' higher -order thinking skills. *International Journal of Evaluation and Research in Education (IJERE)*, 13(2). <https://doi.org/10.11591/ijere.v13i2.25744>