

Enhancing Environmental Awareness Through Ecopedagogy and Local Wisdom: A Study of Geography Education Students in Kampung Naga

Erni Mulyanie¹, Iwan Setiawan¹

¹Geography Education, Faculty of Social Science Education, Indonesia University of Education, Indonesia

Abstract. Environmental sustainability has become a critical issue in the modern era, particularly concerning climate change and environmental degradation. This research highlights the significance of environmental education and the integration of local wisdom as a learning resource. The primary objective is to investigate the impact of an ecopedagogical approach rooted in local wisdom on enhancing environmental knowledge and awareness among Geography Education students. A mixed-methods approach was employed, combining quantitative descriptive analysis and qualitative insights, conducted in Kampung Naga, Salawu, Tasikmalaya Regency. Quantitative data were gathered through surveys, and qualitative data were collected via participatory observations and in-depth interviews. The findings reveal that the ecopedagogical approach significantly boosts students' environmental knowledge and awareness, with 80% of students demonstrating a high level of environmental understanding. Out of nine assessed indicators, seven were rated high and two medium. Specifically, in the Land Conservation and Reclamation course, two indicators improved to a medium category and one to a high category post-learning experience in Kampung Naga. In conclusion, the preservation of local wisdom through an ecopedagogical approach effectively fosters critical environmental attitudes and awareness, making it a potent educational tool for sustainable environmental practices.

1 Introduction

Indonesia, with its more than 17,491 islands, showcases incredible geographical diversity. This not only signifies a wealth of natural resources but also untapped potential. From Sabang to Merauke, each island possesses unique characteristics in terms of geography and ecology, giving rise to diverse biodiversity and distinct ecosystems. Furthermore, Indonesia is renowned for its diversity in ethnicities, cultures, religions, and languages. While this diversity is a source of richness, it also poses a challenge to national unity [1,2]. Therefore, efforts are needed to enhance national harmony and integration. The diverse perspectives of the population on this cultural diversity can strengthen the spirit of unity. Additionally, many of Indonesia's larger islands are often inhabited by multiple ethnic groups with their own

languages, traditions, and cultures [3-5]. In their study, they emphasize that this ethnic diversity creates an extremely diverse cultural richness. This diversity contributes to the creation of a rich and complex cultural and ecological tapestry. This diversity is a source of pride as well as a challenge in terms of preservation and development. The tapestry also offers opportunities for sustainable natural resource management based on local wisdom. Although this diversity is an asset, it also presents a set of challenges, particularly in managing natural and cultural resources sustainably [6-8]. These challenges include maintaining a balance between modernization and preserving traditions, as well as raising environmental awareness in a diverse society. However, with the right education and policies, Indonesia's vast potential in this diversity can be maximized.

Implementing ecopedagogy, as observed in Kampung Naga and various Islamic boarding schools in Indonesia, plays an important role in raising environmental awareness and encouraging sustainable practices among the community and students [9]. In the context of modern environmental challenges, Indonesia faces significant urgency in addressing climate change and environmental degradation. The novelty of this research lies in its focus on an ecopedagogical approach that utilizes local wisdom, especially in Kampung Naga, to increase environmental awareness among students. This unique approach not only preserves cultural heritage but also provides a practical framework for sustainable environmental education.

In this modern era, environmental awareness has become a widely recognized issue, not only within the scientific community but also among the general public and governments. This situation has been exacerbated by the rapid climate change and increasing environmental degradation [8]. Emphasizes the importance of environmental education and awareness as a key approach in solid waste management, an aspect often overlooked but significantly affecting environmental sustainability. The impacts of climate change are not merely theoretical but a growing reality. Climate change has led to various serious implications, including shifting weather patterns, increased frequency and intensity of natural disasters, and threats to the existence of various plant and animal species. These changes not only pose risks to biodiversity but also have socio-economic impacts, including threats to food and water security. Despite the seriousness of the situation, there are various efforts that can be undertaken to mitigate the negative impacts of climate change and environmental degradation. Environmental education is considered one of the keys to raising awareness and mobilizing collective action [10,11]. Initiatives such as ecopedagogy have demonstrated their effectiveness in increasing environmental awareness and inspiring more sustainable actions. This is a crucial step to ensure that future generations will inherit a healthier and more stable planet.

Environmental education plays a crucial role in addressing the various environmental challenges faced by the world today. The ecopedagogy approach has proven to be efficient in providing sustainable education with a focus on the interconnectedness of environmental issues and social injustices for students. Its goal is to enhance students' awareness of environmental problems and establish a connection between humans and the planet, encouraging responsible environmental behavior [11-14]. By implementing this method, education is not only centered on knowledge transmission but also on instilling values and environmental sensitivity. This means equipping learners with the intellectual tools to analyze and comprehend the complexity of ecological issues. However, beyond that, environmental education through ecopedagogy also strives to build empathy and a deeper awareness of the relationship between humans and nature. Through direct interactions and exploration of ecosystems, participants can gain a deeper understanding of the impacts of human actions on the environment, ranging from waste issues to climate change. Thus, this education serves not only as knowledge transfer but also as character formation and environmental ethics development, ultimately promoting more responsible actions towards nature.

Kampung Naga serves as an inspiring example in the efforts to preserve the environment through the application of local wisdom. According to [15-17] and this community has long implemented an ethical and normative system known as "Pamali" to maintain an ecological balance between the community and its natural surroundings. This is a compelling illustration of how traditional values and beliefs can form the ethical foundation for sustainable conservation practices.

The modern era has brought about several new challenges that impact environmental preservation. Advances in science and technology have facilitated the exploitation of natural resources on a much larger scale than ever before [18]. In this context, a crucial question arises: how can we integrate or align local wisdom with scientific approaches and modern technology? Recognizing and valuing traditional ecological knowledge, often referred to as "Traditional Ecological Knowledge" (TEK), is of great importance. TEK is the knowledge held by local communities, derived from their centuries-long interactions with nature. TEK encompasses a profound understanding of ecosystems, the species inhabiting them, and the relationship between humans and the natural environment. This knowledge holds significant value in environmental preservation efforts, as it has proven effective in maintaining ecological balance and sustainably managing natural resources [19].

In response to this situation, an approach that integrates local wisdom with modern science is highly necessary [20]. Ecopedagogy-based education has proven effective in shaping ecological awareness and responsible actions. This concept encourages a holistic approach that captures the essence of both tradition and scientific innovation, accommodating diverse solutions to address environmental issues. Thus, education that combines elements of local wisdom and modern scientific innovation can be a highly effective instrument in creating sustainable solutions. This will enable both the current and future generations to respond more adaptively and creatively to the increasingly complex environmental challenges that lie ahead. This research aims to analyze ecopedagogical education based on the local wisdom of Naga village in increasing environmental awareness of geography education students in Tasikmalaya.

2 Research Method

This study adopts a mixed-methods approach, which combines both qualitative and quantitative methods, to examine the impact of ecopedagogical-based environmental education on geography education students in Tasikmalaya. The mixed-methods approach is designed to provide a deeper and more comprehensive understanding of the research issue by leveraging the strengths of both methods. Mixed-method research is a distinct methodology that combines both quantitative and qualitative research methods to create empirical research [21,22].

Qualitative methods were used in the initial stage of the research, namely field studies in Kampung Naga. In this study, we conducted participant observation to gain an in-depth understanding of how local wisdom is applied in natural resource management and environmental conservation practices in the community. In-depth interviews with kuncen/elders were also conducted to explore their perspectives and experiences. This qualitative method helps us explore cultural context and non-numerical aspects that are not easily measured through quantitative data [23].

Meanwhile, quantitative methods are used in the second phase of the research, where we implement an ecopedagogical-based environmental education program with geography education students. This study investigates two variables: ecopedagogical approach and environmental sustainability. The ecopedagogical approach consists of two indicators, namely technical ecoliteracy, cultural ecoliteracy, and critical ecoliteracy. Environmental sustainability is measured through nine indicators. From these two variables, there are a total

of 36 question items. The population in this study was 120 students with a sample size of 40 students.

statistics are used to summarize the basic features of data collected from respondents, including means, standard deviations, and frequency distributions. To assess the reliability of the survey instrument, Cronbach's alpha was calculated, ensuring that the items in the instrument consistently measured the construct of interest. For validity testing, factor analysis was conducted to ensure that the survey items accurately represented the theoretical constructs underlying ecopedagogical and environmental sustainability approaches. Analysis of Variance (ANOVA), the simple linear regression analysis, were applied to test differences between groups and to determine the significance of the observed relationships.

3 Results and Discussions

Kampung Naga, a traditional village in Indonesia, exhibits a strong culture and value system that significantly contributes to environmental conservation. This value system encompasses traditional practices, beliefs, and cultural norms that emphasize reverence for nature and the sustainable use of natural resources. The strong cultural values related to environmental conservation in Kampung Naga are reflected in the daily activities of the community, such as their respect for the surrounding ecosystem and their wise utilization of natural resources. The values and culture of the Kampung Naga community regarding environmental conservation and local wisdom offer valuable lessons. A profound understanding of how the people of Kampung Naga harmoniously apply their local wisdom to nature provides abundant insights for anyone looking to develop sustainable environmental conservation efforts. Learning from the values and culture of the Kampung Naga community can help shape critical thinking and a caring attitude toward nature in the younger generation and future leaders.

3.1 Perception of the Ecopedagogical Approach and Impact on Environmental Awareness

Students expressed high appreciation for the integration of local Kampung Naga wisdom into their learning experience. Many reported that this approach not only increased their understanding of environmental concepts but also fostered a deeper connection to their cultural heritage. One student said, "Studying ecological practices in Kampung Naga has made me more aware of how traditional knowledge can contribute to modern environmental solutions." This statement was echoed by several students, who showed positive acceptance of the ecopedagogical approach.

Qualitative data revealed that students exposed to an ecopedagogical approach showed heightened awareness and concern for environmental issues. Participants described feeling more responsible for their actions and more motivated to engage in sustainable practices. One student said, "I now think twice before wasting resources or throwing away recyclable materials. Learning from Kampung Naga has made me more aware of my environmental footprint.". Despite the positive outcomes, some students highlighted challenges associated with implementing an ecopedagogical approach. These included a lack of resources and support for integrating local knowledge into the curriculum and difficulties in bridging the gap between traditional practices and modern scientific knowledge. Students suggested increasing collaboration with local communities and providing more hands-on learning opportunities to address these challenges. One student suggested, "We need more field trips

to places like Kampung Naga and opportunities to work directly with community members to really understand and implement these practices.”

An important theme that emerged was the role of ecopedagogical approaches in preserving cultural heritage. Students appreciated how this method helped them learn and value their cultural roots. One participant shared, "Before, I didn't know much about my own cultural practices. Now, I feel proud and more connected to my cultural heritage." This aspect of cultural preservation is seen as a significant benefit of the ecopedagogical approach, contributing not only to environmental education but also to the maintenance of cultural identity. Kampung Naga, a traditional village in Indonesia, exhibits a strong culture and value system that significantly contributes to environmental conservation. This value system encompasses traditional practices, beliefs, and cultural norms that emphasize reverence for nature and the sustainable use of natural resources. The strong cultural values related to environmental conservation in Kampung Naga are reflected in the daily activities of the community, such as their respect for the surrounding ecosystem and their wise utilization of natural resources. The values and culture of the Kampung Naga community regarding environmental conservation and local wisdom offer valuable lessons. A profound understanding of how the people of Kampung Naga harmoniously apply their local wisdom to nature provides abundant insights for anyone looking to develop sustainable environmental conservation efforts. Learning from the values and culture of the Kampung Naga community can help shape critical thinking and a caring attitude toward nature in the younger generation and future leaders.

Geography education students have a close connection to environmental conservation because they study concepts related to geography and sustainability. They delve into the complex interactions between humans and the environment, comprehend the impacts of human actions on ecosystems, and explore various strategies for the wise management of natural resources. Therefore, geography education students possess vital knowledge to support environmental conservation and can play a role as change agents contributing to environmental conservation and sustainability efforts. The qualitative findings support and enrich the quantitative results by providing a more nuanced understanding of the students' experiences with the ecopedagogical approach. The positive reception and increased environmental awareness observed in the qualitative data align with the quantitative results, reinforcing the effectiveness of integrating local wisdom into environmental education. However, the challenges identified highlight the need for additional resources and support to fully realize the potential of this approach. The insights gained from the qualitative study underscore the importance of culturally relevant education and suggest pathways for enhancing the implementation of ecopedagogical methods.

3.2 Ecopedagogical Analysis of Students

The analysis of ecopedagogical learners is conducted using descriptive statistical analysis. Descriptive statistical analysis is employed to provide an overview of the data in each research variable. This analysis primarily aims to describe respondents' general capabilities in each research variable. In simple terms, descriptive statistical analysis is used to provide descriptions or measurements of the data within this research, as explained.

The ecopedagogical approach can be assessed through three main indicators. First, technical eco-literacy, which pertains to the understanding and mastery of technical aspects in ecology, such as natural processes and resource management. Second, cultural eco-literacy, emphasizing the importance of understanding the role of culture, values, and traditions in the environmental context, shaping individuals' attitudes and actions toward nature. Lastly, critical eco-literacy, which encourages critical thinking about environmental and social issues, stimulating questions, reflections, and sustainable actions.

Subsequently, the collected data are divided into three categories: high, moderate, and low. The categorization process is performed by calculating using an interval formula, with a minimum value of 25 and a maximum value of 45, resulting in an interval range of 7. Based on the interval formula, the classification criteria are as follows:

Table 1 Ecopedagogical Classification Criteria for Students

No	Category	Frequency	Percentage
1	High (39-45)	15	37,5
2	Moderate (32-28)	17	42,5
3	Low (25-31)	8	20
	Total	40	100

Instrument created, regarding questions about understanding and mastery of ecopedagogy with the main indicators of technical eco-literacy, cultural eco-literacy, and critical eco-literacy, there are 17 students in the moderate category, 15 students in the high category, and 8 students in the low category. When broken down into these three indicators, the following conclusions can be drawn:

The technical eco-literacy skills of geography education students are at a moderate level, indicating a basic understanding of ecological concepts. Although not in-depth, they have a sufficient foundation to comprehend environmental issues. Students with high cultural eco-literacy have a profound understanding of the role of culture, values, and traditions in the environmental context. They can integrate cultural values into their understanding of environmental sustainability.

Critical eco-literacy skills of students are at a moderate level, indicating a basic understanding of the importance of critical thinking regarding environmental issues. Although not at a high level, they have the foundation to recognize the social and environmental impacts of human actions. In the context of ecopedagogy, geography education students who have participated in field studies in Kampung Naga exhibit diverse levels of understanding and abilities in the three main aspects of eco-literacy: technical, cultural, and critical. These varying levels of understanding offer the potential for the development of more in-depth and inclusive environmental education and a broader understanding of environmental issues. The field study in Kampung Naga is a valuable experience that enriches students' understanding and skills in the context of ecopedagogy, where they can see and learn from the local wisdom applied in real-life practices in a different environment.

3.3 Critical Analysis of Students Environmental Care

Critical environmental attitudes with indicators related to respect for the environment, the principle of responsibility, the principle of solidarity, the principle of compassion, the principle of non-damage, the principle of simple living in harmony with nature, the principle of justice, the principle of democracy, and the principle of moral integrity. Subsequently, the data categorized into three levels: high, moderate, and low. The categorization process was conducted by calculation using an interval formula, with a minimum value of 70 and a maximum value of 132, resulting in an interval range of 21. Based on the interval formula, the classification criteria are as follows and are presented in the following table:

Table 2 Criteria for Classification of Environmental Concern Behavior

No	Category	Frequency	Percentage
1	High (112-132)	32	80
2	Moderate (91-111)	7	17,5
3	Low (70-90)	1	2,5
	Total	40	100

The table above indicates that, based on the instrument created, questions related to critical environmental attitudes with 9 indicators reveal that there are 32 students in the high category, 7 students in the moderate category, and 1 students in the low category. Geography education students exhibit varying levels of environmental concern. They have developed technical understanding and are committed to cultural values related to the environment, especially after participating in a field study in Kampung Naga and observing the local wisdom applied there. However, their levels of involvement and critical thinking regarding environmental issues still need improvement.

In this context, the field study experience in Kampung Naga has provided valuable insights and a deep understanding of how local wisdom can contribute to environmental conservation. Students can leverage this insight to enhance their active participation in conservation efforts. They can integrate the knowledge gained from Kampung Naga into their critical thinking about environmental issues, enabling them to become more effective agents of change in conservation endeavors. In other words, the field study experience in Kampung Naga has opened doors for geography education students to better comprehend the value of local wisdom in the context of environmental conservation. This should motivate them to develop deeper critical thinking and increase active involvement in conservation efforts in the future.

3.4 Analysis Ecopedagogical Approach of Critical Attitudes Environmental Concern

In this research, the researchers conducted a simple linear regression analysis to investigate the influence of implementing an ecopedagogical approach on the development of critical attitudes towards environmental concern. The results of this regression analysis can provide a deeper understanding of the extent to which the ecopedagogical approach contributes to changes in critical attitudes towards the environment.

Tabel 3 The Influence of the Ecopedagogical Approach on Critical Attitudes Caring for the Environment

Variables	Regression Coefficient	Significance
Ecopedagogical Approach (X)	0.754	0.001
Constant (Y-intercept)	0.202	
R-squared (R ²)	0.564	
F-statistic	45.821	0.001

The table above lists the key variables used in simple linear regression analysis:

- 1) Ecopedagogical Approach (X): This is the independent variable representing the level of implementation of the ecopedagogical approach.
- 2) Regression Coefficient: The coefficient of 0.754 indicates a positive relationship between the implementation of the ecopedagogical approach and the development of critical environmental attitudes.
- 3) Constant (Y-intercept): The value of 0.202 represents the level of critical environmental attitudes when the implementation of the ecopedagogical approach is zero.
- 4) R-squared (R²): The R² value of 0.564 indicates that approximately 56.4% of the variability in critical environmental attitudes can be explained by the implementation of the ecopedagogical approach.
- 5) F-statistic: The F-statistic value of 45.821 demonstrates the overall significance of the regression model.

The analysis results indicate a significant influence between the implementation of the ecopedagogical approach (independent variable) and the development of critical environmental attitudes (dependent variable). The regression coefficient of 0.754 shows that each unit increase in the implementation of the ecopedagogical approach is positively correlated with an increase of 0.754 units in the development of critical environmental attitudes. Furthermore, the analysis results show that the constant (Y-intercept) is 0.202, which represents the level of critical environmental attitudes when the implementation of the ecopedagogical approach is zero. This suggests that even without the implementation of the ecopedagogical approach, there is a baseline of positive critical environmental attitudes.

The regression analysis also provides essential information about the strength of the relationship between the independent variable (ecopedagogical approach) and the dependent variable (critical environmental attitudes). The R-squared (R^2) value of 0.564 indicates that approximately 56.4% of the variability in critical environmental attitudes can be explained by the implementation of the ecopedagogical approach. This means that the ecopedagogical approach has a significant contribution in explaining the changes in critical environmental attitudes.

The ecopedagogical approach has been shown to have a significant influence on the development of critical environmental attitudes. These findings offer concrete evidence that through the implementation of an ecopedagogical method focused on preserving the local wisdom of Kampung Naga's community, students can experience a strong sense of inspiration and raise their awareness of various environmental issues. Moreover, this approach encourages them to develop a more critical and responsive attitude towards the pressing environmental challenges of our time. As such, ecopedagogical approach emerges as an effective tool for shaping critical thinking and environmental awareness among students, which is expected to contribute positively to broader environmental conservation efforts.

Furthermore, the F-statistic with a value of 45.821 indicates that the regression model is significant overall. This finding strengthens the conclusion that there is a strong impact of implementing the ecopedagogical approach on the development of critical environmental attitudes. Therefore, the simple linear regression analysis in this study confirms that the implementation of the ecopedagogical approach has a significant and positive impact on the development of critical environmental attitudes.

This paper combines qualitative and quantitative analyses to provide a comprehensive answer to the research question regarding the effectiveness of an ecopedagogical approach integrating local wisdom from Kampung Naga in enhancing environmental awareness among students. The quantitative results, derived from survey data, offered statistical evidence of increased environmental awareness and positive attitudes towards sustainability. These findings were supported and enriched by qualitative data from interviews and focus group discussions, which provided deeper insights into students' personal experiences and perceptions. The qualitative data revealed the students' appreciation for cultural heritage and their motivation to engage in sustainable practices, thus corroborating the quantitative results. The literature and theoretical frameworks on environmental awareness, ecopedagogical studies, and local knowledge were integral to interpreting these results. Theories on environmental education highlighted the importance of culturally relevant pedagogies, while studies on local knowledge emphasized the value of traditional ecological wisdom in modern education. Integrating these theories, the study demonstrated that ecopedagogical approaches that leverage local wisdom not only enhance environmental knowledge but also foster a deeper cultural connection and responsibility towards the environment. Thus, the combination of qualitative and quantitative data, supported by relevant literature and theory, provides a robust and holistic understanding of the impact of ecopedagogical methods on students' environmental awareness and attitudes.

4. Conclusions

The results of the ecopedagogical analysis on students indicate that their technical ecoliteracy is at a moderate level, while their cultural and critical ecoliteracy also falls within the moderate range. Although they have not reached a highly profound level of understanding, students possess a sufficient foundational understanding of ecological concepts and the cultural relationships with the environment. This diversity in the levels of understanding provides opportunities for the development of more profound and inclusive environmental education efforts and a broader understanding of environmental issues. The analysis of critical environmental attitudes with nine indicators, including attitudes of respect for the environment, principles of responsibility, principles of solidarity, principles of compassion, principles of non-harm, principles of living simply and in harmony with nature, principles of justice, principles of democracy, and principles of moral integrity, reveals variations in the level of environmental concern among geography education students. Although students have developed technical understanding and a commitment to cultural values related to the environment, their level of engagement and critical thinking about environmental issues still requires improvement. Therefore, efforts are needed to enhance active participation, deeper analysis, and critical thinking among students regarding environmental issues so that they can become more effective agents of change in environmental conservation efforts.

The results of the simple linear regression analysis in this study demonstrate a significant influence between the implementation of the ecopedagogical approach and the development of critical environmental attitudes. This confirms that the ecopedagogical approach has a substantial impact on shaping critical environmental attitudes among students. Through this approach, students can become more responsive to urgent environmental issues, increase their awareness, and develop critical thinking about contemporary environmental challenges. The overall significance of the regression model strengthens the finding that the effective implementation of the ecopedagogical approach contributes to the development of critical environmental attitudes. The ecopedagogical approach emerges as an effective tool in supporting broader environmental conservation efforts.

This research successfully achieved its objective of investigating the effectiveness of an ecopedagogical approach that incorporates local wisdom from Kampung Naga in enhancing environmental awareness among students. By integrating both qualitative and quantitative data, the study provided a comprehensive answer to the research questions. Quantitative findings demonstrated significant improvements in students' environmental awareness and positive attitudes towards sustainability. These results were supported and enriched by qualitative insights, which highlighted students' appreciation for cultural heritage and their motivation to engage in sustainable practices. The study demonstrated that leveraging traditional ecological knowledge within an ecopedagogical framework not only enhances environmental understanding but also strengthens cultural connections and fosters a sense of responsibility towards the environment.

4.1. Limitations and Future Research

Despite its contributions, this study has several limitations. First, the sample size was limited to students from a specific geographic area, which may affect the generalizability of the findings. Future research could involve a larger and more diverse sample to validate and expand upon these results. Second, the study focused on short-term impacts; thus, longitudinal studies are needed to assess the long-term effectiveness of the ecopedagogical approach. Additionally, while this study highlighted the benefits of integrating local wisdom, it did not extensively explore the potential challenges and barriers to implementing such

approaches in different educational contexts. Future studies should investigate these aspects to provide a more nuanced understanding of the feasibility and adaptability of ecopedagogical methods. By addressing these limitations and exploring new areas, future research can further enhance the knowledge and practice of environmental education.

References

1. M. Triatmodjo, A. Merdekawati, N. A. Pratama, N. A. Rahma, and ..., *Pulau, Kepulauan, dan Negara Kepulauan*. books.google.com, (2022). [Online]. Available: <https://books.google.com/books?hl=en&lr=&id=HXd8EAAAQBAJ&oi=fnd&pg=PP2&dq=triatmodjo+negara+kepulauan&ots=HGVDtPvCBm&sig=vs3kfCeeFTWs5k8INJdNFTITyBk>
2. W. Herimanto, *Ilmu sosial & Budaya Dasar*. Jakarta: Bumi Aksara; (2012).
3. I. Prastowo, A. A. Nurusman, H. Moro, Rizkianti, and ..., Diversity of Indonesian offal-based dishes, *Journal of Ethnic ...*, 2023, doi: 10.1186/s42779-023-00181-8.
4. Y. E. Putri, Pelaksanaan Integrasi Pendidikan Karakter Nilai Al-Qur'an dan Nilai Budaya Alam Minangkabau Dalam Pembelajaran Sosiologi (Studi Kasus: SMA Negeri 2 Padang ..., *Culture & Society: Journal of Anthropological ...*, (2019), [Online]. Available: <http://repository.unp.ac.id/id/eprint/24124>
5. L. Suryatni and I. Widana, Perception and Appreciation of The Indonesian Plural Society Toward Cultural Diversity. *Technium Soc. Sci. J.*, (2023), [Online]. Available: https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/techssj43§ion=37
6. K. A. Monk and D. Priatna, Environmental security and resilience Indonesia and global challenges. *Indonesian Journal of Applied ...*, (2022), [Online]. Available: <https://journal.unpak.ac.id/index.php/InJAST/article/view/5215>
7. H. Zarbaliyev, Multiculturalism in globalization era: History and challenge for Indonesia. *Journal of Social Studies (JSS)*, (2017), [Online]. Available: <https://journal.uny.ac.id/index.php/jss/article/view/16966>
8. M. Hart, *Working and educating for life: Feminist and international perspectives on adult education*. books.google.com, (2018). [Online]. Available: https://books.google.com/books?hl=en&lr=&id=nqp-DwAAQBAJ&oi=fnd&pg=PT14&dq=hart+environmental+awareness+and+education&ots=o5DQDmCKBr&sig=fv2NhwuMDLFWIIAg9_EIVkWfCU
9. E. Mulyanie, R. Rismawati, and H. Al Husaini. Ecopedagogy Based on Preserving the Local Wisdom of Kampung Naga in Cultivating Environmental Care in Geography Education Students. *JPG (Jurnal Pendidikan ...)*, (2024), [Online]. Available: <https://ppjp.ulm.ac.id/journal/index.php/jpg/article/view/18386>
10. J. Swart, W. L. Filho, A. M. Azul, L. Brandli, and Change Scenarios for Sustainable Development. *Partnerships for the ...*, 2020.
11. B. Jickling, S. Blenkinsop, M. Morse, and Wild pedagogies: Six initial touchstones for early childhood environmental educators. *Australian Journal of ...*, (2018), [Online]. Available: <https://www.cambridge.org/core/journals/australian-journal-of-environmental-education/article/wild-pedagogies-six-initial-touchstones-for-early-childhood-environmental-educators/10E590828EB51E17BB79900869313B85>
12. K. Muangasame and M. Wongkit. Ecopedagogy as an educational approach for vulnerable rural communities. *Journal of Applied Learning and ...*, (2023), [Online]. Available: <https://journals.sfu.ca/jalt/index.php/jalt/article/download/755/569/3281>
13. C. Korsant. A Freirean ecopedagogy or an imposition of values? The pluriverse and the politics of environmental education. *Globalizations*, (2022), doi: 10.1080/14747731.2022.2038830.

14. R. Hung. Ecopedagogy and education. *Oxford Research Encyclopedia of Education*, (2021). doi: 10.1093/acrefore/9780190264093.001.0001/acrefore-9780190264093-e-1502.
15. N. Nurdiansah. Budaya Pamali sebagai Landasan Pembelajaran Lingkungan di Sekolah Dasar (Studi Kasus pada Masyarakat Adat Kampung Naga Tasikmalaya). *Pedagogi : Jurnal Penelitian Pendidikan*, vol. **04**, no. 01, pp. 59–69, 2017.
16. R. Raharja, F. G. Wibowo, R. V. Ningsih, and S. V. Machdum. Studi Masyarakat Dalam Menghadapi Bencana Longsor. *Jurnal Dialog Penanggulangan Bencana Vol.*, vol. **7**, no. 2, pp. 111–119, (2016).
17. A. D. Gustiana and M. Supriatna. Ecological Value of Kecap Pamali in the Community of Kampung Naga, Tasikmalaya Regency. *Ta dib : Jurnal Pendidikan Islam*, (2021), doi: 10.29313/tjpi.v10i1.6999.
18. S. Setianingsih. Menumbuhkan Kepekaan Lingkungan Siswa melalui Pembelajaran Sejarah Terkait Dampak Eksploitasi Alam Masa Revolusi Industri. *Arzusin*, vol. **3**, no. 1, pp. 39–46, (2023), doi: 10.58578/arzusin.v3i1.827.
19. F. Berkes, *Sacred Ecology. Second Edi*. New York: Routledge, Taylor and ..., 2008.
20. B. Hendrawan, M. F. Nugraha, and F. Nugraha, Faktor-Faktor yang Mempengaruhi Kesadaran Ekologis Siswa Pada Pembelajaran Berbasis Ekopedagogik di Sekolah Dasar. *NATURALISTIC : Jurnal Kajian Penelitian Pendidikan dan Pembelajaran*, vol. **5**, no. 1, pp. 684–491, (2020), doi: 10.35568/naturalistic.v5i1.907.
21. S. S. Nair and S. S. Prem, A framework for mixed-method research,” *Shanlax International Journal of ...*, (2020), [Online]. Available: <https://www.indianjournals.com/ijor.aspx?target=ijor:sijm&volume=8&issue=2&article=008>
22. H. K. Mohajan. Quantitative research: A successful investigation in natural and social sciences. *Journal of Economic Development, Environment and ...*, (2020), [Online]. Available: <https://www.ceeol.com/search/article-detail?id=939590>
23. T. Greckhamer and S. Cilesiz. Qualitative Research: Foundations, Approaches, and Practices. *Oxford Research Encyclopedia of Business ...*, (2022), doi: 10.1093/acrefore/9780190224851.001.0001/acrefore-9780190224851-e-214.