Ecopedagogy Based on Preserving the Local Wisdom of Kampung Naga in Cultivating Environmental Care in Geography Education Students

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Abstract
This research discusses an eco-pedagogical approach based on preserving the local wisdom of the Kampung Naga community in cultivating a critical attitude of caring for the environment in geography education students at Siliwangi University. The research method uses a quantitative approach with data obtained through questionnaires and documentation studies. The data analysis technique used was descriptive statistics and a simple linear regression statistical test was also carried out to determine the effect of the eco-pedagogic approach on a critical attitude towards caring for the environment. The population in this study were geography students at Siliwangi University with a sample size of 40 people. The results of data analysis show that students have high levels of cultural eco-literacy and critical eco-literacy, as well as a respectful attitude towards the environment, the principle of responsibility, the principle of living simply and in harmony with nature, the principle of justice, the principle of democracy, and the principle of good moral integrity. This research also shows that the eco-pedagogic approach has a significant influence on the development of students' critical attitudes toward caring for the environment.

Keywords: Ecopedagogy, Local wisdom, Critical attitude, Environmental conservation, Geography education students

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1. Introduction
As an archipelagic country, Indonesia has thousands of islands. Based on the Minutes of Determining the Number of Islands from Validation and Verification published by the Directorate General of Regional Administration, Indonesia has 17,491 islands (Triatmodjo et al., 2022). Each island in Indonesia has ethnicity,
ethnicity, religion, and race, each of which is different from one another. Almost every large island has more than one ethnic group (Herimanto & Winarno, 2021) so the large number of islands in Indonesia means that there are very many ethnic groups.

Indonesia has a large number of ethnic groups, making Indonesia rich in culture. Culture that is beneficial and functions to maintain the existence of society in the natural environment, both physical and biological, will be passed down to the next generation so that a tradition is formed. Several communities still maintain their ancestral traditions, one of which is the Kampung Naga community. There is various local wisdom contained in the traditions preserved by the people of Kampung Naga. Much of the local wisdom of the Kampung Naga community is related to nature conservation.

One of the oldest local wisdom in Naga village is in the form of rules and prohibitions. The rules and prohibitions that exist in the Naga village community must be obeyed by the entire community because if not, it is believed that there will be consequences. The people of Naga village interpret the prohibition as "pamali". Pamali is used as a way of life by the community so Pamali must be trusted and obeyed seriously by the local community to be safe and have peace of mind (Gustiana & Supriatna, 2021). Pamali is used by the people of Kampung Naga to control environmental destruction (Raharja et al., 2016). Pamali is a beacon in regulating people's behavior in managing nature so that nature becomes a good friend and provides benefits to the community (Nurdiansah, 2017). There have been no people who have deliberately violated this prohibition because they believe that they will receive a hereditary curse (Ichsan et al., 2023).

The development of science and technology has a significant influence on various aspects of life. Nature, which is human living space, is used as an object so that humans exploit nature to fulfill their living needs. Excessive exploitation will hurt the environment itself which will gradually have an impact on human life (Setianingsih, 2023). This is because the available natural resources and the carrying capacity of nature are decreasing so it is very influential and can even threaten human life (Stevanus, 2019). This condition is made worse by the low understanding of the nature of humans as multidimensional creatures. One of the reasons for humans as multidimensional creatures is that humans themselves have a relationship with nature or the surrounding environment (Yasida, 2020). A survey conducted by (Ramadha & Resmi, 2019) stated that Indonesia is one of the countries that contributes greatly to natural damage. Strategic efforts are needed to build a new paradigm to build awareness of the importance of protecting nature in the eco-pedagogical education process in increasing awareness and ecological character. Awareness of nature is very necessary to always have ecological awareness and intelligence so that you have a sense of concern to always protect nature (Hendrawan et al., 2020).

Ecopedagogics is environment-based education that can bring changes in awareness among students to carry out eco-literacy (Handayani et al., 2021). Ecopedagogical-based education can build students' character and critical awareness in understanding their nature as creatures related to the environment so that they can act wisely towards nature. Ecopedagogical-based education not only
helps students understand the complexity of the relationship between humans and nature but also builds characters who are inclusive, caring, and responsible for environmental conservation. Ecopedagogical education teaches students to not only understand the environment as a resource but also as a living entity that needs to be respected and preserved. Therefore, eco-pedagogy needs to be included in the curriculum so that it can create students who are aware and responsible for the environment and natural resources (Finali & Budyawati, 2022).

In globalization and technological advances, the people of Kampung Naga maintain the values of local wisdom and of course, it is closely related to protecting the environment as a conservation effort towards environmental sustainability. Therefore, further research is needed regarding the concept of eco-pedagogy in preserving local wisdom in Kampung Naga to foster critical care. environment for Geography Education Department students.

With this background, this research aims to explore how eco-pedagogy based on the local wisdom of the Kampung Naga community can be used in the learning of geography education students. Apart from that, this research also aims to measure its impact on increasing students' environmental understanding and care. It is hoped that the results of this research can make an important contribution to improving geography education, increasing students' understanding of the importance of environmental conservation, and promoting local wisdom as a valuable resource in nature conservation efforts.

2. Method

The method used in this research is a quantitative approach with the data used in the form of questionnaires and documentation studies. The population in this study was 110 geography education students at Siliwangi University class of 2020. The samples taken were 40 people. This is in accordance with appropriate standards for sampling, namely the range of 30-500 respondents (Sugiyono, 2017). The data collection technique uses a questionnaire consisting of 3 statements for each indicator, namely technical eco-literacy, cultural eco-literacy, critical eco-literacy, respectful attitude towards the environment, the principle of responsibility, the principle of solidarity, the principle of compassion, the principle of non-destruction, the principle of simple living and harmony with nature, principles of justice, principles of democracy, and principles of moral integrity. Therefore the total statement is 36 items. The validity of the questionnaire was tested using the Carl Pearson formula while the reliability was tested using the Cronbach's Alpha formula. Based on these two tests, the questionnaire was proven to be valid and reliable. The statement was measured using a Likert scale with five alternative respondents' answer choices, namely Strongly Agree, Agree, Somewhat Agree, Disagree, and Strongly Disagree. Each alternative answer is given a graded weight, namely 5, 4, 3, 2, 1. Data processing uses the MS application. Excel and SPSS version 26 with calculations using descriptive quantitative analysis techniques.

3. Result and Discussion

Kampung Naga, a traditional village in Indonesia, exhibits a strong culture and value system that contributes to environmental conservation. This value system
includes traditional practices, beliefs, and cultural norms that focus on respect for nature and the conservation of natural resources. The strong cultural value of environmental preservation in Kampung Naga is reflected in the daily activities of the community, such as respect for the surrounding ecosystem and wise use of natural resources.

The values and culture of the Kampung Naga community in preserving the environment and local wisdom are very valuable lessons. An in-depth understanding of how the Kampung Naga people carry out their local wisdom in harmony with nature is a rich lesson for anyone who wants to develop sustainable environmental conservation efforts. Learning from the values and culture of the Kampung Naga community can help shape critical thinking and caring attitudes toward nature among the younger generation and future leaders.

A critical attitude towards caring for the environment is very necessary in today's society. In an era characterized by environmental issues such as climate change, ecosystem degradation, and sustainability of natural resources, a critical attitude of caring for the environment is the basis for sustainable action and environmental preservation. By having a critical attitude towards the environment, individuals can become agents of positive change in nature conservation efforts, promote environmental awareness, and help create a more sustainable future for future generations.

Geography education students have a strong connection to environmental conservation because they study geographic concepts related to the environment and sustainability. They learn about the complex interactions between humans and the environment, understand the impact of human actions on ecosystems, and explore strategies for wisely managing natural resources. Therefore, geography education students have important knowledge to support environmental conservation and act as agents of change who contribute to environmental conservation and sustainability efforts.

The eco-pedagogical approach has been applied in the learning of geography education students at Siliwangi University. This approach is practiced by integrating it with the values and culture of environmental conservation inherent in the lives of the people of Kampung Naga. Students not only learn geographic theories but also engage in hands-on experiences that connect theory with real-world practice. This integration provides a deeper understanding of how local culture can support environmental conservation, providing valuable knowledge for students in developing sustainable understanding and action regarding the environment.

The eco-pedagogical approach can be assessed through three main indicators. First, technical eco-literacy refers to understanding and mastering technical aspects of ecology, such as natural processes and resource management. Second, cultural eco-literacy, emphasizes the importance of understanding the role of culture, values, and traditions in the environmental context, which can shape individual attitudes and actions towards nature. Finally, critical eco-literacy, which encourages critical thinking on environmental and social issues, stimulates ongoing inquiry, reflection, and action.

The results of the questionnaire data show that the eco-pedagogic approach
obtained good marks. In the aspect of technical eco-literacy, the score is at medium criteria. However, the positive thing is that cultural eco-literacy shows high criteria values. Apart from that, critical eco-literacy also received high marks. Thus, the eco-pedagogical approach is generally considered good, with a focus on the development of higher technical eco-literacy, more details are presented in the following table:

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Indicators</th>
<th>Values</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-pedagogycal</td>
<td>Technical eco-literacy</td>
<td>79.5</td>
<td>Medium</td>
</tr>
<tr>
<td>Approach</td>
<td>Cultural eco-literacy</td>
<td>87</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Critical eco-literacy</td>
<td>75.8</td>
<td>Medium</td>
</tr>
</tbody>
</table>

(Source: Analysis Results, 2023)

Moderate technical eco-literacy among geography education students indicates that they have sufficient technical understanding and skills related to ecological and environmental issues. Even though they have not yet reached a very deep level, students with moderate technical eco-literacy have a sufficient basis for understanding ecological concepts. Even though their abilities have not yet reached a high level, students with moderate technical eco-literacy can still play a role in supporting environmental conservation efforts and understanding more general environmental issues. This technical (functional) eco-literacy covers the basics of science, ecological and biological concepts, and the positive and negative impacts of humans on ecological systems (Yunansah & Herlambang, 2017).

High cultural eco-literacy in geography education students shows that they have a deep understanding of the role of culture, values, and traditions in the environmental context. This means that students not only understand the importance of the relationship between culture and the environment but can also integrate these cultural values and practices into their understanding of environmental sustainability. Students with high cultural eco-literacy can appreciate and respect various cultural perspectives related to the environment. This cultural eco-literacy includes insight, awareness and understanding of various cultural perspectives in the relationship between humans and the environment that results in the sustainability of life (Yunansah & Herlambang, 2017).

Moderate critical eco-literacy among geography education students indicates that they have a basic understanding of the importance of critical thinking on environmental issues. Although their ability to analyze and criticize environmental problems has not yet reached a high level, they have a basis for recognizing the social and environmental impacts of human decisions and actions. This critical eco-literacy engages the subject of education to ecological politics, technological advances and communication through critical and constructive dialog(Yunansah & Herlambang, 2017).

In examining critical attitudes in caring for the environment, nine key indicators can be used as a guide. Respectful attitude towards the environment reflects respect for nature and the living creatures in it. Principle of responsibility, emphasizes the importance of individuals and groups being responsible for the environmental impacts of their actions.
Furthermore, the principle of solidarity emphasizes cooperation and support between individuals and communities to protect the environment together, while the principle of compassion describes attention and concern for the sustainability of nature and humans. The principle of non-destruction reminds us not to cause damage to nature and its living creatures.

The principle of living simply and in harmony with nature calls for adopting a lifestyle that is by nature's capacities, while the principle of justice demands fair treatment of all living creatures and future generations. The principle of democracy refers to community participation in environmental decision-making, and the principle of moral integrity describes honesty and morality in actions related to the environment.

Based on the data from the questionnaire results, a critical attitude towards caring for the environment also shows good criteria, with respect for the environment being a high criterion, the principle of responsibility being a high criterion, the principle of solidarity being a medium criterion, the principle of compassion being a medium criterion, the principle of non-destruction being a medium criterion, the principle of living simply and in line with nature with high criteria, the principles of justice with high criteria, the principles of democracy with medium criteria, and the principles of moral integrity with high criteria, for more details presented in the following table:

<table>
<thead>
<tr>
<th>Table 2. Value of Critical Environmental Care Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspects</td>
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<tr>
<td>Critical Environmental Care</td>
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(Source: Analysis Results, 2023)

A high level of respect for the environment indicates that students have a very good level of appreciation and awareness of nature and the ecosystem. They have a deep understanding of the importance of maintaining, protecting, and respecting the environment and the living creatures in it. Students with a high level of respect for the environment tend to have strong motivation and commitment to be involved in environmental conservation. Respect for nature as an ecological element is based on people's awareness of the intrinsic value of nature, that nature has value in itself so that it has the right to be respected (Sari et al., 2019).

The principle of environmental responsibility with high criteria for geography education students indicates that students have a very strong level of awareness and commitment to their responsibilities towards nature and the environment. They have a deep understanding of the impact of human actions on the environment and
feel responsible for acting positively in preserving nature's sustainability. Students with a high principle of environmental responsibility tend to play an active role in environmental conservation efforts. This environmentally responsible behavior is shown by any action that has the aim of contributing to solving environmental problems (Suryanda et al., 2020).

The principle of solidarity towards the environment with moderate criteria for geography education students indicates that students show a moderate level of awareness and involvement in terms of cooperation and support for environmental conservation efforts. They have a basic understanding of the importance of working together to protect nature but have not yet reached a very high level of involvement in concrete actions or environmental projects. Solidarity with the environment can be shown through various forms of social care and collaboration, one of which is social awareness and community involvement in mobilizing social solidarity to address environmental challenges (Bormasa, 2023).

The principle of compassion for the environment with moderate criteria for geography education students indicates that students have a sufficient level of awareness and attention to the sustainability of nature and the environment. Although they do not reach very high levels, they still pay decent attention to environmental issues. Students with the principle of compassion have an interest and concern for environmental issues but need more understanding and active involvement to reach a higher level in supporting environmental conservation. The application of the principle of environmental compassion is an urgent issue, especially in the context of environmental pollution (Delta et al., 2023). To overcome this, the integration of environmental education into various disciplines is very necessary to be implemented (Syafiqurrohman, 2020).

The principle of not damaging the environment with moderate criteria for geography education students indicates that students show a moderate level of awareness and commitment to the importance of not causing damage to nature and ecosystems. Although they have a basic understanding of environmental issues, their level of involvement in concrete actions to protect the environment is still limited. A non-destructive attitude towards the environment can be done by processing waste and preventing damage to nature by reducing, reusing and recycling (Astria & Putri, 2018).

The principle of living simply and in harmony with nature for geography education students with high criteria reflects a very strong commitment to environmental conservation and efforts to practice a lifestyle that supports the sustainability of nature. This principle emphasizes values, quality, and way of life, not wealth, means, and material standards (Mulyani & Firmansyah, 2020).

The principle of environmental justice for geography education students with high criteria reflects their very strong commitment to issues of social and environmental justice in the context of geography and the environment. They seek to address inequality, promote justice, and protect the rights of individuals and communities in environmental conservation efforts. The concept of environmental justice is diverse, encompassing legal, educational and ethical dimensions. For example, the issue of sexual harassment, which can occur in any environment,
requires legal protection (Natih et al., 2019). These issues require a holistic approach to environmental justice, which includes legal protection, education, and practical application.

The principle of democracy towards the environment for geography education students with moderate criteria reflects their commitment to involving various parties, including students, lecturers, the community, and government in making decisions related to environmental conservation and management. Democracy in the environment is demonstrated by community participation in management and decision-making related to the environment and natural resources (Santosa & Quina, 2014).

The principle of moral integrity towards the environment for geography education students with high criteria reflects their very strong commitment to ethical, moral, and integrity values in all actions and decisions related to the environment. Moral integrity towards the environment is demonstrated through various cultural practices, education, and decision-making. This is seen in the environmental ethics of the Dayak Meratus community, which emphasizes respect, solidarity and submission to nature (Gumelar, 2024).

A simple linear regression statistical test was carried out in this study which shows that there is an influence of the eco-pedagogic approach on critical attitudes towards caring for the environment, for more details it is presented in the following table:

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>5262.597</td>
<td>1</td>
<td>5262.597</td>
<td>47.578</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>4203.178</td>
<td>38</td>
<td>110.610</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9465.775</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Source: Analysis Results, 2023)

Based on the table above, the sig or significance value shows a value smaller than the probability of 0.05, which means that the eco-pedagogical approach has a significant influence on a critical attitude towards caring for the environment. This provides evidence that the application of eco-pedagogical methods that focus on preserving the local wisdom of the Kampung Naga community can inspire and increase students' awareness of environmental issues and encourage them to develop a more critical attitude in responding to the environmental challenges currently faced. Various studies have explored the influence of ecopedagogical approaches on critical environmental attitudes. Research conducted by (Handayani et al., 2021) states that Ecopedagogy has a positive effect on the formation of environmental care character.

### 4. Conclusion

An eco-pedagogical approach based on the local wisdom of the Kampung Naga community has had a significant impact in increasing the understanding and critical attitude of caring for the environment of geography education students at Siliwangi University. Students gain a deeper understanding of the relationship between local culture and environmental conservation. They have also developed a more positive attitude towards nature and a higher commitment to environmental
conservation.

The results of this research show that geography education students have a better understanding of environmental issues and a critical attitude towards caring for the environment, they can contribute to the development of broader environmental awareness and create a more sustainable future for future generations. In addition, this research also highlights the importance of integrating local values and culture in environmental education. The local wisdom of the Kampung Naga community has proven to be a valuable resource in nature conservation efforts, and its use in an eco-pedagogical approach can provide rich and in-depth learning for students.

5. Reference


