

ETHNOPEDAGOGY-BASED TRANSFORMATIVE EDUCATION TO DEVELOPING ECOLOGICAL AWARENESS AND SOCIAL RESILIENCE OF MADRASAH IBTIDAIYAH STUDENTS IN EAST LOMBOK

Lalu Awaludin Akbar ^{1*}, Muslihan ²

¹IAI Hamzanwadi Pancor Lombok Timur, Indonesia

email: awaludinakbar1@gmail.com

Abstract: This study aims to examine the role of ethnopedagogy and local wisdom in transformative education to develop ecological awareness and strengthen the social resilience of Madrasah Ibtidaiyah students in East Lombok. The ethnopedagogical approach was used to integrate local cultural values and community social practices into environmental learning so that students could understand ecological issues in a contextual and meaningful way. This study employed a Participatory Action Research (PAR) approach involving students, teachers, and community members through project-based learning focused on plastic waste management as a local environmental issue. The research process included the stages of planning, implementation, observation, and reflection. Data were collected through observation, interviews, questionnaires, and documentation, and then analyzed using a mixed methods approach. The results of the study indicate that the integration of local wisdom into transformative education was able to improve students' environmental knowledge, attitudes, and pro-environmental behavior while simultaneously strengthening the values of responsibility, cooperation, and social awareness within the school community. This study contributes to the development of a contextual and sustainable ethnopedagogy-based environmental education model at the primary school level.

Keywords: ecological awareness; ethnopedagogy; local wisdom; social resilience; transformative education.

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INTRODUCTION

Environmental degradation has become one of the most pressing global challenges in recent decades. Various issues such as environmental pollution, climate change, exploitation of natural resources, and the increasing volume of plastic waste indicate that the relationship between humans and the environment is experiencing a serious imbalance. This condition not only affects natural ecosystems but also influences the sustainability of social life within communities. Therefore, efforts to foster ecological awareness have become an important agenda in various sectors, including education. Education is viewed as a strategic means of developing awareness, attitudes, and more responsible environmental behavior from an early age.

In the context of primary education, the development of ecological awareness cannot rely solely on learning approaches that emphasize cognitive aspects or mastery of scientific concepts about the environment. Learning oriented toward memorization of concepts is often insufficient to encourage changes in students' attitudes and behaviors in daily life. Therefore, a more contextual and transformative learning approach is needed, one that is capable of connecting knowledge with the social and cultural realities of students' lives. Transformative education is expected to help students understand environmental issues more critically and encourage them to actively participate in efforts to maintain environmental sustainability (Mezirow, 1997).

Transformative education emphasizes learning processes that are not only oriented toward the transfer of knowledge but also toward changes in students' perspectives, awareness, and actions. Through critical reflection and meaningful learning experiences, students are expected to gain a deeper understanding of social and environmental realities and develop a sense of responsibility toward collective life (O'Sullivan, 1999). In the context of environmental education, this approach is highly relevant because ecological issues are fundamentally related not only to scientific aspects but also to values, culture, and social practices within society.

In line with this approach, the integration of local cultural values into the learning process represents a potential strategy for strengthening environmental education. Various communities in Indonesia possess traditions and local wisdom practices that contain ecological values, such as maintaining environmental balance, using natural resources wisely, and fostering social responsibility toward the environment. These values have long been part of traditional community knowledge systems passed down through generations and can serve as important learning resources in the educational process because they contain cultural values and social practices of society (Juwanti et al., 2026; Sugiarto et al., 2025). However, in formal educational practices, the potential of local wisdom as a learning resource has often not been optimally utilized.

One approach that can be used to integrate local cultural values into education is ethnopedagogy. Ethnopedagogy is an educational approach that views local culture as an important and relevant source of learning in the educational process. Through this approach, cultural practices, social values, and traditional community knowledge can be incorporated as part of students' learning experiences (Banks, 2008; Gunardi et al., 2024). Ethnopedagogy not only aims to enrich learning materials but also to strengthen students' cultural identity and develop broader social awareness in addressing various life challenges.

From the perspective of ethnopedagogy, learning functions not only as a process of knowledge transfer but also as a process of cultural value transmission and character formation. Therefore, the integration of local wisdom into learning can help students understand the relationship between humans, culture, and the environment in a more holistic manner. This approach becomes increasingly important in the context of primary education

because at this stage students are in the phase of value and character formation that will influence their future behavior (Alwasilah, 2009).

In the East Lombok region, communities possess various cultural practices and local wisdom values related to social life and human relationships with nature. These values are reflected in traditions of mutual cooperation, collective environmental management practices, and various social norms emphasizing the importance of maintaining balance between humans and nature. These cultural values actually have great potential to be integrated into school learning processes, particularly in environmental education. Various studies have shown that contextual environmental education can improve students' ecological literacy and environmental awareness through meaningful learning experiences (Amaliati et al., 2024; Husin et al., 2025; Kouam, 2025).

However, in learning practices at Madrasah Ibtidaiyah, the integration of local wisdom values into environmental learning remains relatively limited. Learning activities often focus more on delivering theoretical material and less on connecting knowledge with students' real-life experiences in their surrounding environment. As a result, environmental learning has not fully encouraged students to develop ecological awareness and pro-environmental behavior in their daily lives.

Several previous studies have shown that project-based learning can be an effective strategy for increasing student engagement in the learning process and encouraging them to solve real problems occurring in their surrounding environment (Thomas, 2000). Through this approach, students not only learn to understand concepts but also actively participate in activities related to environmental issues. However, most of these studies still place modern scientific approaches as the primary focus without explicitly integrating local cultural values into the learning process.

Based on these conditions, the integration of transformative education, ethnopedagogical approaches, and project-based learning represents a promising strategy for developing students' ecological awareness in a more contextual and meaningful way. By connecting learning with cultural experiences and community social practices, students can understand that protecting the environment is not merely an individual obligation but also part of the life values that have long developed within their communities.

This study is based on the assumption that the development of students' ecological awareness will be more effective if the learning process emphasizes not only scientific knowledge but also integrates local cultural values that exist within society. By involving students, teachers, and local communities in the learning process, environmental education can become a means of strengthening relationships between schools and communities while building collective awareness of environmental sustainability.

Although various studies have discussed environmental education and project-based learning in primary schools, most of these studies still focus primarily on cognitive aspects and scientific approaches without systematically integrating local wisdom values into the learning process. Therefore, this study offers novelty by developing an ethnopedagogy-based transformative education approach that integrates local cultural values into environmental learning at Madrasah Ibtidaiyah. Through a Participatory Action Research (PAR) design, this study not only involves teachers and students in the learning process but also engages local communities as sources of knowledge and cultural practices relevant to environmental education. Thus, this study is expected to contribute to the development of a contextual environmental learning model based on local culture and oriented toward strengthening students' ecological awareness and social resilience at the primary education level.

Based on this background, this study aims to analyze how the integration of ethnopedagogy and local wisdom within transformative education can develop ecological awareness and strengthen the social resilience of Madrasah Ibtidaiyah students.

METHOD

This study employed a Participatory Action Research (PAR) approach aimed at developing and implementing an ethnopedagogy-based learning model in environmental education at Madrasah Ibtidaiyah. The PAR approach was selected because it enables active participation among researchers, teachers, students, and the community in the learning process as well as in solving environmental problems occurring around the school environment. PAR also emphasizes continuous reflection and action processes so that learning not only produces knowledge but also changes students' attitudes and behaviors toward the environment (Fals-Borda & Rahman, 1991).

Research Design

This study was conducted through several action cycles consisting of planning, action implementation, observation, and reflection stages. During the planning stage, the researcher and teachers collaboratively designed learning activities integrating local wisdom values into projectbased learning activities. The action implementation stage was carried out by applying projectbased learning related to environmental issues around the school, such as plastic waste management and school environmental cleanliness. Furthermore, the observation stage was conducted to examine the learning process as well as changes in students' attitudes and behaviors. The reflection stage was conducted to evaluate the outcomes of the implemented actions and formulate improvements for the next cycle.

Research Location and Participants

This study was conducted at Madrasah Ibtidaiyah Swasta Nahdlatul Wathan Teros, located in Labuhan Haji District, East Lombok Regency, West Nusa Tenggara Province. The selection of the research site was based on the consideration that the school possesses a strong

socio-cultural context and local wisdom potential relevant for integration into ethnopedagogy-based learning.

The research participants consisted of 30 fourth- and fifth-grade students, 4 teachers, and several local community members involved in project-based learning activities related to environmental management. Community involvement in this study aimed to enrich the learning process through local wisdom experiences and practices existing within the local community, while also supporting the implementation of the Participatory Action Research (PAR) approach, which emphasizes the active participation of various stakeholders in the research and learning processes.

Data Collection Techniques

The data in this study were collected through several techniques, namely observation, interviews, questionnaires, and documentation; (1) Observation was conducted to examine the learning process, interactions between students and teachers, and students' participation in projectbased learning activities related to environmental management. (2) Interviews were conducted with teachers and several students to obtain information regarding their experiences in participating in ethnopedagogy-based learning and their views on the importance of environmental preservation. (3) Questionnaires were used to measure students' levels of knowledge, attitudes, and pro-environmental behavior before and after the implementation of the learning activities., and (4) Documentation was used to complement the research data through activity photographs, field notes, and learning documents related to the implementation of the study.

Data Analysis Techniques

The research data were analyzed using a mixed methods approach combining qualitative and quantitative analyses. Qualitative data obtained from observations, interviews, and documentation were analyzed through the stages of data reduction, data display, and conclusion drawing as proposed by Matthew B. Miles and A. Michael Huberman (2014). This analysis aimed to gain a deeper understanding of the learning process as well as changes in students' attitudes and behaviors during the implementation of the study.

Meanwhile, quantitative data obtained from questionnaires were analyzed using descriptive statistics to examine changes in students' knowledge, attitudes, and pro-environmental behavior before and after the implementation of the learning activities. The quantitative analysis results were then integrated with qualitative findings to obtain a more comprehensive understanding of the effectiveness of ethnopedagogy-based learning in developing students' ecological awareness and social resilience.

Data Validity

To ensure the validity of the research data, source triangulation and method triangulation techniques were employed. Source triangulation was conducted by comparing data obtained from students, teachers, and community members. Meanwhile, method triangulation was

carried out by comparing the results of observations, interviews, questionnaires, and documentation. In addition, a collaborative reflection process between researchers and teachers was conducted to ensure that the research findings accurately reflected the actual conditions occurring during the implementation of the learning activities.

RESULTS AND DISCUSSION

Implementation of Ethnopedagogy-Based Transformative Education in Learning

The implementation of this study aimed to develop students' ecological awareness and social resilience through the integration of ethnopedagogical values and local wisdom into the learning process. The research activities were conducted at Madrasah Ibtidaiyah Swasta Nahdlatul Wathan Teros, located in Labuhan Haji District, East Lombok Regency. The learning process was designed using a transformative education approach emphasizing students' active involvement in understanding and solving environmental problems existing around them.

Learning activities were implemented through project-based activities focusing on the issue of plastic waste management within the school and surrounding community. At the initial stage, teachers and researchers conducted exploratory activities to identify students' prior knowledge regarding environmental issues and their habits in waste management. The results of the initial observation showed that most students generally understood the importance of maintaining environmental cleanliness; however, waste management practices had not yet been consistently implemented in their daily lives.

Through the ethnopedagogical approach, the learning process was then connected with local cultural values existing within the local community. Teachers facilitated discussions about mutual cooperation practices, social responsibility, and various community habits emphasizing the importance of maintaining environmental cleanliness. Relating learning materials to community social practices helped students understand that environmental preservation is not merely a school obligation but also part of the life values inherited through community culture.

Project-based learning activities were further implemented through several activities, including school environmental observations, plastic waste collection, simple recycling activities, and environmental cleanliness campaigns around the school. Through these activities, students not only gained knowledge about the importance of environmental preservation but also acquired direct experience in taking concrete actions to address environmental problems.

Improvement of Students' Ecological Awareness

The results of the study indicate that the implementation of ethnopedagogy-based transformative education had a positive impact on improving students' ecological awareness.

This improvement was evident in aspects of environmental knowledge, environmental care attitudes, and pro-social behavior based on comparisons of scores before and after the learning process.

Table 1. Improvement of Students' Ecological Awareness

Indicator	Before	After	Gain	N-Gain	Category
Environmental Knowledge	66.7	90.0	23.3	0.70	High
Environmental Care Attitude	50.0	86.7	36.7	0.73	High
Pro-Social Behavior	43.3	83.3	40.0	0.71	High

Based on Table 1, it can be seen that all indicators of students' ecological awareness experienced significant improvement after the implementation of ethnopedagogy-based learning. This improvement is demonstrated by the difference in scores before and after learning, and is further strengthened by the N-Gain values, which fall within the high category for all indicators.

In the aspect of environmental knowledge, the average student score increased from 66.7 to 90.0, with a gain score of 23.3 and an N-Gain value of 0.70, which is categorized as high. This finding indicates that learning activities integrating local wisdom values with a project-based approach effectively improved students' understanding of environmental concepts. Students not only understood basic environmental concepts but were also able to relate them to their daily lives.

Furthermore, in the aspect of environmental care attitudes, there was a greater improvement compared to the knowledge aspect, namely from a score of 50.0 to 86.7, with a gain score of 36.7 and an N-Gain value of 0.73, which is also categorized as high. This improvement indicates that ethnopedagogy-based learning was able to foster students' awareness and concern for the environment through the internalization of local cultural values relevant to their lives.

Meanwhile, in the aspect of pro-social behavior, the highest improvement occurred compared to the other indicators. The average student score increased from 43.3 to 83.3, with a gain score of 40.0 and an N-Gain value of 0.71, which falls within the high category. This finding shows that the learning process not only affected cognitive and affective aspects but also encouraged real behavioral changes in students' daily lives, such as cooperation, social responsibility, and participation in environmental preservation activities.

Overall, the average N-Gain value of the three indicators was 0.71, which is categorized as high. This finding demonstrates that the implementation of ethnopedagogy-based transformative education was effective in comprehensively improving students' ecological awareness, including aspects of knowledge, attitudes, and behavior. These findings reinforce

the idea that contextual learning based on local culture and involving students' direct experiences has great potential to create sustainable changes in environmental education at the primary school level.

To provide a clearer comparison of the improvement in students' ecological awareness before and after the learning process, the data are also presented in graphical form in Figure 1.

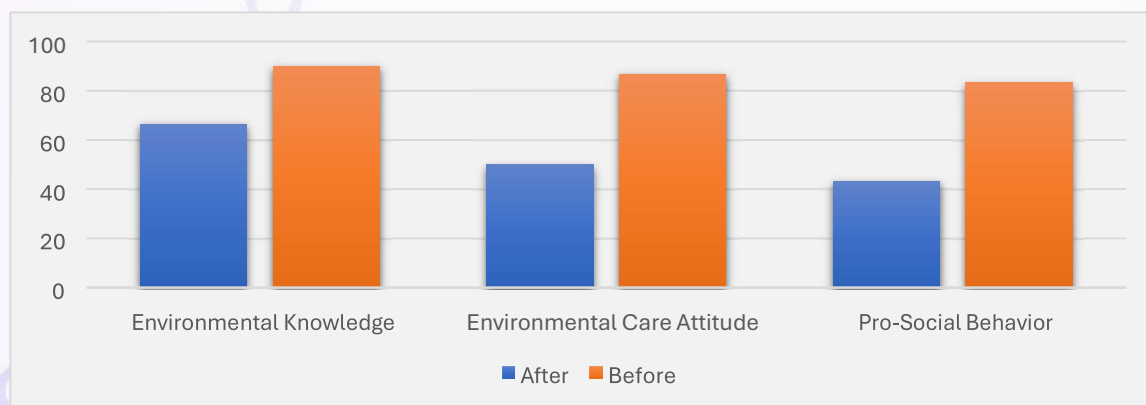


Figure 1. Improvement of Students' Ecological Awareness Before and After Learning

Based on Figure 1, a consistent upward trend can be observed across all indicators of students' ecological awareness after the implementation of ethnopedagogy-based learning. Visually, the graph shows that all aspects experienced a fairly sharp increase, particularly in the dimensions of pro-social behavior and environmental care attitudes.

This pattern of improvement indicates that the learning process not only affected cognitive aspects but also encouraged changes in students' affective and behavioral dimensions. The more prominent increase in the behavioral aspect suggests that contextual and practice-based learning experiences have a stronger impact on the internalization of environmental values in students' daily lives.

In addition, the significant difference between conditions before and after learning indicates that the ethnopedagogical approach integrating local wisdom was able to create a more meaningful learning process. This finding reinforces the idea that learning closely connected to students' socio-cultural contexts tends to be more effective in fostering comprehensive ecological awareness.

Thus, this graph confirms the findings presented in Table 1, showing that ethnopedagogybased learning not only improved learning outcomes quantitatively but also demonstrated a consistent and sustainable pattern of change across various dimensions of students' ecological awareness.

The Role of Local Wisdom in Strengthening Learning

One of the important findings of this study is that the integration of local wisdom values into learning made a significant contribution to the success of the environmental education program. Local cultural values such as mutual cooperation, togetherness, and social responsibility toward the environment became strong foundations for developing students' ecological awareness.

In several learning activities, teachers connected environmental cleanliness concepts with the practice of mutual cooperation, which has long been a tradition within the local community. Through this approach, students understood that maintaining environmental cleanliness is part of the social values inherited within community life. This approach helped students see the relationship between school learning and everyday life practices in their environment.

In addition, community involvement in learning activities also provided more authentic learning experiences for students. Several community members participated in discussions and waste management practices, allowing students to learn directly from the community's experiences in maintaining environmental cleanliness. Interactions between students and community members helped strengthen students' understanding of the importance of environmental preservation as a shared responsibility.

These findings are in line with the view that ethnopedagogy can be an effective approach for integrating local knowledge into formal education systems. By positioning local culture as a learning resource, the learning process becomes more contextual and relevant to students' lives.

Strengthening Students' Social Resilience

In addition to improving ecological awareness, the implementation of ethnopedagogy-based transformative education also contributed to strengthening students' social resilience. Social resilience in this study refers to students' ability to cooperate, demonstrate social responsibility, and participate in activities aimed at the common good.

During the implementation of project-based learning, students worked in groups to plan and carry out various activities related to environmental management. The group work process encouraged students to communicate, share responsibilities, and collaborate in completing planned activities. Through these experiences, students learned to appreciate the roles of each group member and understand the importance of cooperation in achieving common goals.

The learning activities also encouraged students to interact with the surrounding community through environmental cleanliness campaigns. These interactions provided important social experiences for students, as they learned to express ideas and collaborate with various stakeholders in maintaining environmental cleanliness.

The strengthening of students' social resilience was also reflected in their increased sense of responsibility toward the school environment. After participating in the learning activities, students became more active in maintaining the cleanliness of classrooms and the school environment. They also began to show initiative in encouraging their peers to participate in cleanliness activities.

These findings indicate that learning integrating ethnopedagogical values affects not only students' cognitive aspects but also the development of social values essential for community life. Education that connects learning with cultural values and social practices can help students develop stronger environmental and social responsibility toward their communities.

Discussion of Research Findings

The findings of this study indicate that the implementation of ethnopedagogy-based transformative education had a significant impact on improving students' ecological awareness, including aspects of knowledge, attitudes, and pro-social behavior. This improvement was not only quantitatively evident through the high N-Gain values but was also reinforced by consistent patterns of change as illustrated in the research graph.

These findings are consistent with the transformative learning theory proposed by Jack Mezirow (1997), which emphasizes that meaningful learning can transform individuals' ways of thinking, attitudes, and actions comprehensively. In the context of this study, changes occurred not only in the cognitive aspect (environmental knowledge) but also in the affective aspect (environmental care attitudes) and conative aspect (pro-social behavior), indicating that a transformative learning process had taken place among students.

Furthermore, the results of this study also support the view of Edmund O'Sullivan (1999), who argues that transformative education should be oriented toward the development of ecological awareness and sustainability. The integration of local wisdom values into learning proved to strengthen students' connectedness with the environment, making learning more contextual and meaningful.

From the perspective of ethnopedagogy, these findings reinforce the idea that local wisdom can serve as an effective learning resource in education. This is in line with the view of A. Chaedar Alwasilah (2009), who emphasized that ethnopedagogy utilizes local cultural values as the foundation of the educational process. In this study, the use of local contexts not only improved students' understanding but also encouraged the internalization of environmental values into their daily lives.

The highest improvement in the aspect of pro-social behavior indicates that project-based learning integrated with ethnopedagogy was able to encourage students to actively engage in real actions. This finding is consistent with John W. Thomas's view that project-based learning is effective in increasing student engagement and the ability to apply knowledge in real-life situations.

Moreover, the results of this study are also consistent with various empirical studies showing that contextual environmental learning can significantly improve students' ecological awareness. Research conducted by Amaliati et al. (2024), Husin et al. (2025), and Kouam (2025) demonstrated that environmental education integrating direct experiences and local contexts has a stronger impact compared to conventional learning approaches. These findings reinforce the potential of ethnopedagogical approaches in improving the effectiveness of environmental education.

Overall, the findings of this study demonstrate that the integration of transformative education, ethnopedagogy, and project-based learning constitutes an effective approach for developing students' ecological awareness and social resilience. This approach not only improves cognitive learning outcomes but also shapes students' attitudes and behaviors toward environmental sustainability.

CONCLUSION

This study demonstrates that the integration of ethnopedagogical approaches within transformative education has significant potential for developing ecological awareness and social resilience among primary school students. The implementation of learning activities that connect environmental education materials with local wisdom values proved capable of creating learning experiences that are more contextual, meaningful, and relevant to students' lives. Through projectbased learning activities involving students, teachers, and the community, students not only gained cognitive understanding regarding the importance of environmental preservation but also experienced critical reflection processes that encouraged changes in attitudes and behaviors toward the environment.

The findings of the study indicate that ethnopedagogy-based learning was able to improve three main dimensions of students' ecological awareness, namely environmental knowledge, environmental care attitudes, and pro-environmental behavior. Students' involvement in real activities such as environmental observation, waste management, and environmental cleanliness campaigns provided learning experiences that strengthened the connection between school knowledge and everyday life practices. This finding is consistent with previous studies showing that contextual and experience-based environmental learning has a more effective impact on improving students' environmental literacy compared to conventional learning approaches.

In addition to improving ecological awareness, this study also demonstrates that the ethnopedagogical approach contributes to strengthening students' social resilience through the development of cooperation, social responsibility, and participation in community activities. The integration of local wisdom into the learning process helped students understand that environmental preservation is part of cultural values and community social practices. Various studies have also shown that ethnopedagogical approaches can strengthen cultural identity while simultaneously developing students' character in primary education.

The implications of this study suggest that environmental education in primary schools should be developed through more contextual approaches based on local culture. Teachers can utilize local wisdom as a learning resource to enrich students' learning experiences. Furthermore, community involvement in the learning process should also be strengthened so that schools can become collaborative spaces for building ecological awareness and social resilience among younger generations. Thus, ethnopedagogy-based transformative education can serve as a relevant learning model in supporting sustainable educational development at both local and global levels.

Research Limitations

This study has several limitations that should be considered in interpreting the findings. First, the number of research participants was limited, involving only 25 students from one school; therefore, the findings cannot yet be broadly generalized to other primary school contexts with different characteristics. Second, the study was conducted over a relatively short period, making it unable to measure the sustainability of students' behavioral changes in the long term, particularly regarding the internalization of ecological values in daily life. Third, the measurement of pro-social behavior aspects was still based on observations and questionnaires, which may contain subjectivity from both researchers and respondents. Although data triangulation was conducted, the possibility of bias in assessment could not be completely avoided. Fourth, the implementation of the ethnopedagogical approach in this study was still limited to the local wisdom context of communities in the East Lombok region, so its effectiveness may differ when applied in other cultural contexts.

Research Recommendations

Based on these limitations, several recommendations can be proposed for future research. First, future studies are recommended to involve larger and more diverse samples in terms of social, cultural, and geographical backgrounds so that the findings may achieve a higher level of generalizability. Second, longitudinal studies are needed to examine the sustainability of the impacts of ethnopedagogy-based learning on students' ecological awareness and behavior over the long term. Third, future research may develop more comprehensive measurement instruments, including the use of more systematic observation techniques or mixed methods approaches to improve data validity and reliability. Fourth, further exploration regarding the integration of ethnopedagogy with other learning approaches, such as technology-based learning or collaborative learning, also presents an interesting opportunity to enhance the effectiveness of environmental education.

In addition, future studies may also examine the implementation of ethnopedagogy-based transformative education models at different educational levels, such as secondary schools or higher education, as well as within diverse cultural contexts, in order to broaden both theoretical and practical contributions in the field of sustainable education.

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