



Local Wisdom and Ecological Intelligence in Sustainable Character Education

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Abstract

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This research aims to analyze the relationship between local wisdom, character education, and ecological intelligence in supporting sustainable development. The method used is a literature study by examining various scientific sources published in the last five years. The results of the study show that local wisdom plays an important role as a means of forming ecological character because it contains the values of balance, responsibility, simplicity, and respect for nature. The integration of local cultural values into the educational curriculum is able to strengthen students' environmental awareness, foster ecological empathy, and encourage sustainable living behaviors. Ecological intelligence includes not only the ability to think scientifically, but also moral, spiritual, and social awareness in maintaining the sustainability of the earth. Local wisdom-based education provides a contextual approach that fosters emotional attachment between students and the surrounding environment. Thus, the application of local values in character education is an effective strategy to build a young generation that is not only intellectually intelligent, but also has an ecological character and is committed to environmental sustainability.



1. Introduction

The global ecological crisis that the world is facing today demands a paradigm shift in education. Rising global temperatures, overexploitation of natural resources, and declining environmental awareness are serious challenges to the sustainability of human life (UNESCO, 2020). In this context, education no longer functions simply as a transfer of knowledge, but also as a means to shape the values and ecological character of students to be able to think and act sustainably. The idea of ecological intelligence, as put forward by Goleman and reinforced by various contemporary researches, emphasizes the importance of understanding the mutual relationship between humans and ecosystems and fostering ethical responsibility for the environment (Fadillah & Ernita, 2022).

Ecological intelligence not only includes cognitive abilities in understanding ecological principles, but also concerns affective and psychomotor dimensions in the form of caring attitudes, the ability to manage resources sustainably, and skills in applying nature conservation values in daily life (Chen et al., 2019). In this case, education that instills ecological intelligence needs to be based on the social and cultural context of the community so that the values taught are inseparable from the reality of students' lives. This is where local wisdom plays an important role.

Local wisdom contains cultural values that are inherited from generation to generation and functions as a moral guideline and knowledge system in maintaining a balance between humans and nature (Sandoval-Rivera, 2020). Principles such as respecting the earth, using resources sparingly, and maintaining the sustainability of other creatures' lives are at the core of traditional value systems that are in line with

the concept of sustainable development. In the context of education, local wisdom can be integrated as a contextual learning resource that strengthens students' character, making learning more meaningful and rooted in their own culture (Abas et al., 2022).

The integration between local wisdom and character education is an effective strategy to foster ecological awareness among the younger generation. Character education based on local values helps students understand that environmental conservation is not only a scientific responsibility, but also a moral and spiritual responsibility (Suhartini et al., 2019). Through habituation, customary ceremonies, and socio-cultural practices related to nature management, students can learn to appreciate the sustainability of life and understand the relationship between human actions and ecosystem balance. This approach reflects a holistic educational concept that not only emphasizes the academic aspect, but also shapes ecological awareness and social responsibility (Ramadha & Official, 2019).

In addition, culturally and environmentally oriented education models such as eco-schools have also proven to be effective in supporting the achievement of the Sustainable Development Goals (SDGs), especially the fourth goal on quality education and the thirteenth goal on handling climate change (Wang & Altanbulag, 2022). In this kind of educational ecosystem, the values of local wisdom are integrated into learning activities, school governance, and the behavior patterns of school residents. Thus, education not only functions to transfer knowledge, but also internalizes moral values that maintain a balance between humans and the environment.

However, a number of studies show that the implementation of character education based on local wisdom and ecological intelligence still faces challenges. Many educational institutions do not yet have a systematic learning model to integrate cultural values into the formal curriculum (Žižek et al., 2021). The limited understanding of teachers, the lack of relevant learning resources, and the dominance of cognitive-based education paradigms often make the moral and ecological dimensions less attention. Therefore, there is a need for an educational approach that not only emphasizes the academic aspect, but also builds ecological awareness based on local culture.

Thus, the urgency of this research is to explore how the values of local wisdom can be used as a foundation in the development of character education that is able to foster the ecological intelligence of students. This study also seeks to strengthen the understanding that integrating local wisdom into the formal education system is a strategic step in supporting sustainable development and the preservation of the nation's cultural values. By placing local wisdom as the core of ecological character education, it is hoped that a generation will be born that is not only intellectually intelligent, but also has ecological and cultural character.

2. Methods

This research uses a library research approach that focuses on theoretical and conceptual analysis of various relevant scientific sources. Literature studies were chosen because they were able to provide an in-depth understanding of the integration between local wisdom, character education, and ecological intelligence in

the context of sustainable education. Through literature analysis, this study aims to explore ideas, concepts, and results of previous research to build a comprehensive conceptual framework and find patterns of interconnectedness between the three main aspects.

The research process begins with the stage of gathering sources from various scientific articles, books, and international policy reports published between the last five years. The sources were selected based on the topic's relevance to the research theme, the level of credibility, and its relevance to issues of character and environmental education. The selection stage is carried out systematically by browsing the Google Scholar database, ResearchGate, and national and international reputable journal portals. From the search results, several scientific articles were selected that were considered representative to support thematic and conceptual analysis.

The next stage is content analysis which serves to identify the main patterns and themes of each source. The analysis was carried out by categorizing the findings of the literature into three main focuses, namely: (1) the concept of ecological intelligence in education, (2) the role of local wisdom as a value base in character formation, and (3) the strategy of integrating these two concepts in the continuous education system. This process is carried out through a critical reading of the content of each literature, examining the objectives, methods, and results of previous research, and relating it to the context of education in the modern era. The thematic analysis approach is used to find conceptual connections and compile a theoretical synthesis that supports the research objectives.

To maintain the validity of the study results, triangulation of sources was carried out, namely by comparing various literature from different disciplines such as education, ecology, and anthropology. This approach allows researchers to gain a holistic view of the relationship between local cultural values and ecological character education. In addition, a data reduction process is also carried out, namely information filtering so that the focus of the analysis remains directed to the research objective without leaving the context. All information obtained is compiled in an analytical descriptive form by prioritizing conceptual interpretation, not statistical calculations.

The results of this literature study are not only descriptive but also reflective, meaning that the research seeks to relate the findings of the literature with the reality of today's education. Each concept found is analyzed within the framework of sustainable development to see the extent to which local wisdom and ecological intelligence can reinforce each other in the formation of the character of the younger generation. Through this method, it is hoped that a comprehensive theoretical understanding of the role of character education based on local wisdom in fostering ecological intelligence as a foundation for the sustainability of human life and the environment will be obtained.

3. Results

This research results in an understanding that the integration of local wisdom, character education, and ecological intelligence is a strategic approach in building sustainable awareness in the world of education. Based on an analysis of various

literature, it was found that the concept of ecological intelligence includes cognitive, affective, and psychomotor abilities that are integrated in individual awareness to live in harmony with the environment (Fadillah & Ernita, 2022). This concept requires not only an understanding of ecological principles, but also the ability to assess the impact of human behavior on ecosystems and behave ethically towards nature. Ecological intelligence, in the context of education, is a form of reflective awareness that arises when students are able to relate scientific knowledge with moral values rooted in local culture.

The results of the study show that education based on local wisdom has great potential to strengthen ecological character values. According to Suhartini et al. (2019), the application of character education based on local wisdom is able to improve the social behavior and environment of students because the values taught are not abstract, but real in daily practice. Local wisdom acts as a living curriculum, where ecological values are inherited through customs, ceremonies, and social systems of the community. These values such as simplicity, mutual cooperation, and respect for nature are a strong moral foundation in building sustainable character. In this context, education not only transfers knowledge, but also instills a deep understanding of the relationship between humans and nature.

In line with this, Ramadha and Resmi (2019) emphasized that the value of local wisdom has a direct correlation with the formation of students' ecological intelligence. Through an understanding of the life philosophy of indigenous peoples who respect the earth and sky as a symbol of cosmic balance, students can internalize the value of responsibility for environmental sustainability. The learning process

based on local wisdom also builds an emotional connection between students and nature, so that environmentally friendly behavior appears naturally. Thus, local wisdom is not only part of culture, but also an effective educational medium in developing ecological character.

From the perspective of education management, the integration of local values into the curriculum is a form of innovation towards sustainable education. According to Abas et al. (2022), education management that contains local values is able to build synergy between schools, communities, and the environment. Through this collaboration, schools become a social space that fosters collective awareness of the importance of protecting nature. Programs such as ecopesantren are one example of implementation that successfully combines religious, moral, and ecological values in harmony (Wang & Altanbulag, 2022). This model teaches that religious practices are inseparable from responsibility to the environment, and that spiritual values are the motor for sustainable behavior.

Literature analysis also shows a close relationship between character education and sustainable development. Žižek et al. (2021) emphasized that local wisdom can be actualized in various disciplines, including biology and science, to instill ecological awareness in schools. Through this approach, learning becomes more contextual and applicative. Students not only understand ecological theory, but also learn how to implement it in daily life. Local culture-based education makes students more sensitive to the environmental conditions around them, which ultimately forms an attitude of ecological responsibility and empathy.

In addition to strengthening the cognitive and affective dimensions, education based on local wisdom also fosters practical skills in natural resource management. Budiaman and Purwandari (2021) shows that teaching based on the wisdom of indigenous communities is able to build students' ecological competence through direct activities such as land management, water conservation, and the use of renewable energy. This approach is in line with the view of Sandoval-Rivera (2020) who states that environmental education based on local wisdom can bridge the relationship between traditional knowledge and global agendas such as the SDGs. Thus, local knowledge serves as a bridge between traditional culture and the demands of modernity.

Despite having great potential, the implementation of character education based on local wisdom still faces significant challenges. Many teachers have not been trained to integrate local values into the formal curriculum (Kakoty, 2018). In addition, there is a tendency that education is still dominated by academic approaches that emphasize purely cognitive outcomes, while the moral and emotional aspects are often overlooked. This condition results in a gap between the ecological knowledge that students have and their real behavior towards the environment. To overcome this, teacher training, the development of teaching materials based on local culture, and education policies that support a cross-disciplinary approach are needed.

Several studies have also revealed that strengthening ecological character through local wisdom can be a solution to overcome moral and environmental degradation at the same time. Khoo and Jørgensen (2021) found that the integration

of green morality and traditional values in civic education is able to foster students' awareness of ecological responsibility. Meanwhile, Chen et al. (2019) emphasize the importance of the urgency of ecological intelligence in history learning, where cultural narratives can be used to instill environmental awareness and strengthen national identity. Both of these approaches suggest that the formation of ecological character is not just a domain of natural science, but can be integrated in various fields of study.

The results of the literature analysis also show that character education based on local wisdom contributes to the creation of an ethical and inclusive social ecosystem. Zakharova et al. (2021) stated that a pedagogical approach based on local culture encourages students to think critically, creatively, and reflective of environmental issues. This process fosters a sense of ownership of nature and increases participation in conservation activities. Delia and Krasny (2018) added that cultural value-based education creates a balance between rationality and spirituality, so that students' ecological behavior is not only based on knowledge, but also on moral beliefs.

In a global context, a local wisdom-based approach supports the implementation of Education for Sustainable Development (ESD) launched by UNESCO (2020). Through integrating local values into the curriculum, education can act as an agent of social transformation that strengthens cultural resilience while encouraging sustainable innovation. Research by Kotsonis (2020) also emphasizes the importance of character education based on universal and local ethical values as the basis for forming a morally and ecologically intelligent generation. In other

words, continuing education cannot be separated from the cultural context in which it is applied.

Meanwhile, other findings from Žižek et al. (2021) show that education based on local wisdom does not only have an impact on individuals, but also communities. Local values such as mutual cooperation and social responsibility have been proven to strengthen community participation in maintaining the ecosystem. This concept is strengthened by Wang and Altanbulag (2022) who highlight the eco-learning model as an example of the successful application of local values in the modern education system. This model shows that the merging of religious, cultural, and ecological values can produce an education system that is complete and adaptive to the changing times.

Thus, the results of this literature research confirm that the integration between local wisdom and ecological intelligence is a strategic approach in building sustainable education. Local values act as a moral medium that guides students to respect nature, while ecological intelligence serves as the ability to think and act on the principles of sustainability. Both complement each other in forming the character of the young generation who are tough, ethical, and have high environmental awareness. This integration is not only a pedagogical choice, but a necessity in the face of the global challenge of the environmental crisis and the moral degradation of modern humans.

4. Conclusion

Character education based on local wisdom and ecological intelligence is an important key in forming an ethical, cultured, and environmentally sustainability-oriented generation. Based on the results of the literature review, it can be concluded that the integration of local values in the formal education system is able to develop ecological awareness that is not only cognitive, but also affective and psychomotor. Through the process of internalizing cultural values that respect the balance between humans and nature, students are guided to understand the importance of preserving natural resources and respecting life in all its forms. Education based on local wisdom also serves as a bridge between traditional cultural heritage and the demands of sustainable development. Values such as mutual cooperation, social responsibility, and simplicity are the basis for the formation of consistent ecological behavior in daily life.

When character education is integrated with the cultural context of society, the learning process becomes more meaningful, contextual, and has a direct impact on student behavior. In addition, this approach strengthens cultural identity and fosters a sense of ownership of the surrounding environment. Thus, education that emphasizes ecological intelligence through local wisdom values is a strategic step towards the creation of a sustainable society. These efforts are not only relevant in the national context, but also support global agendas such as Education for Sustainable Development (ESD). Through collaboration between schools, families, and the community, it is hoped that education can be a motor of change that gives

birth to a generation that is intellectually intelligent, has ecological character, and is committed to preserving the earth as a common heritage of mankind.

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