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Integration of Education for Sustainable Development (ESD) in Primary School Learning in Indonesia

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Abstract

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Education for Sustainable Development serves as a strategic approach to fostering awareness, attitudes, and behaviors among young generations toward environmental, social, and economic sustainability. This study aims to describe the implementation of Education for Sustainable in Indonesian primary schools using a qualitative descriptive method. Data were collected through literature reviews of previous research, educational policies, and learning practices at the elementary level. The analysis reveals that Education for Sustainable has been integrated through thematic learning, environmental projects, community-based activities, and character education programs emphasizing social responsibility and ecological awareness. Such implementation has been proven to enhance students' systems thinking, collaboration, and reflective skills. However, limited teacher training, insufficient learning resources, and a lack of policy support remain key challenges to effective implementation. The study highlights the need for stronger institutional collaboration among government, schools, and communities, as well as teacher capacity building and curriculum innovation, to ensure that sustainability values are effectively embedded from early education as a fundamental foundation for the nation's sustainable development.

1. Introduction

The rapid development of science and technology (*Ilmu Pengetahuan dan Teknologi* / IPTEK) in the 21st century has had a significant impact on the social, economic, and cultural progress of the global community. However, on the other hand, these advances also pose serious challenges to environmental sustainability and ecosystem balance. Phenomena such as climate change, land degradation, deforestation, and environmental pollution are clear evidence that development that is not accompanied by ecological awareness can threaten human survival. This condition strengthens the urgency of implementing the concept of sustainable development that integrates environmental, social, and economic dimensions in a balanced manner in every aspect of life, including the education sector (Ghany, 2018).

In the global context, awareness of the importance of sustainable development has been structured since the birth of the Brundtland Report in 1987 which emphasized that development must be able to meet the needs of the current generation without sacrificing the ability of future generations to meet their needs. In line with this, Education for Sustainable Development (ESD) emerged as an educational strategy that aims to equip students with the values, knowledge, and skills to build a sustainable future. According to UNESCO (2020), ESD functions as a learning process that directs students to think critically, understand the relationship between humans and the environment, and make decisions that are responsible for the welfare of the planet.

Education for sustainable development is not just about adding environmental content in the curriculum, but changing the paradigm of education to be more holistic and transformative. Kopnina (2020) explain that ESD demands participatory, reflective, and collaborative learning, where students are not only recipients of information, but also agents of change in maintaining social and ecological balance. Thus, ESD plays an important role in building global awareness and 21st century competencies that include systemic thinking, social empathy, and responsibility for the environment.

In the Indonesian context, the implementation of ESD has been integrated in various education policies such as Permendikbud No. 20 of 2016 concerning Graduate Competency Standards and Permendikbud No. 21 of 2016 concerning Content Standards. Both regulations emphasize the importance of a balance between aspects of knowledge, attitudes, and skills that are relevant to sustainability principles. At the elementary school level, the implementation of ESD is very important because the age of children is a period of formation of basic values, character, and habits that determine their behavior in the future. Ghany's research (2018) shows that basic education oriented towards sustainable development can increase students' awareness of the importance of protecting the environment and reducing consumptive behaviors that damage nature.

Schuler et al. (2018) added that the application of ESD in elementary schools has the potential to develop students' systemic thinking skills, namely the ability to understand the relationships between elements in a system, including the relationship between humans, natural resources, and social sustainability. Similar

results were found by Agbedahin (2019), who highlight that in different countries ESD has become an integral part of the basic curriculum through cross-disciplinary approaches and contextual issue-based learning. However, in the Indonesian context, its implementation still faces obstacles such as limited teacher training, lack of learning resources, and suboptimal policy support at the local level (Richter & De Sousa, 2019).

In addition to internal challenges, the success of ESD implementation also depends on collaboration between stakeholders, including schools, communities, governments, and the business world. UNESCO (2020) emphasizes that continuing education cannot run effectively without the support of an educational ecosystem that involves all social elements. Through cross-sectoral synergy, sustainability values can be internalized not only through formal learning, but also through school culture, extracurricular activities, and community practices.

Based on the description above, it can be concluded that ESD has great potential in supporting the achievement of the Sustainable Development Goals (SDGs), especially the fourth goal of quality education. This study aims to describe the implementation of ESD in primary schools in Indonesia, analyze its supporting and inhibiting factors, and offer strategies to strengthen the implementation of ESD at the elementary level. Through a qualitative descriptive approach, it is hoped that this research can make a conceptual contribution to the development of basic education that is sustainable and relevant to the global challenges of the 21st century.

2. Methods

This study uses a qualitative descriptive method that aims to describe in depth the phenomenon of the implementation of Education for Sustainable Development (ESD) in elementary schools. This approach was chosen because it allows researchers to understand the processes, contexts, and meanings that arise in the implementation of ESD through the interpretation of various relevant data sources. The main focus of this research is to analyze how the concept of education for sustainable development is applied in the context of learning, school policies, and student activities at the elementary level.

Data collection was carried out through document review, literature observation, and content analysis of various previous research results related to the theme of continuing education. The data studied included scientific articles, education policy reports, and empirical study results from various educational institutions. The selection of sources is carried out purposively by considering relevance, timeliness, and suitability with the research objectives. In addition, secondary data such as government regulations and national education policy documents are also used to strengthen understanding of the framework for implementing ESD in elementary schools.

The data analysis process is carried out in the stages of reduction, presentation, and drawing conclusions. In the data reduction stage, the researcher selects information relevant to the research focus and groups the findings based on key categories such as education policies, learning strategies, and strengthening sustainability values. Furthermore, the data is presented in the form of a systematic

narrative description to facilitate the interpretation of the patterns that emerge from the analysis results. The last stage is the drawing of conclusions which is carried out inducively by relating the results of the analysis to the research objectives.

The validity of the data is maintained through the triangulation technique of sources and methods. Triangulation is done by comparing results from various literature sources to ensure the consistency of the information obtained. The validation process also involves checking the suitability of the findings with the policy context and the actual implementation of education in elementary schools. The qualitative descriptive method in this study provides an opportunity for researchers to comprehensively describe the empirical and conceptual conditions of the implementation of Education for Sustainable Development. The results of the analysis are expected to be the basis for formulating strategic recommendations in the development of curriculum and continuous learning practices at the elementary school level in Indonesia.

3. Results

The results of analysis of various studies and scientific documents show that the implementation of Education for Sustainable Development (ESD) in primary schools has become an important focus in the development of global and national education in recent years. The concept of ESD that emphasizes the integration of social, economic, and environmental aspects in the educational process has encouraged elementary schools to adapt their curriculum to be relevant to sustainability issues. In the Indonesian context, the implementation of continuing

education has begun to be integrated through thematic learning, local content, and extracurricular activities that instill environmental awareness from an early age (Ghany, 2018). Research by Timm and Barth (2021) shows that the application of ESD in elementary school learning is carried out by integrating sustainability values in various subjects, especially science, social studies, and character education.

Education for sustainable development provides a new direction to the learning paradigm in elementary schools. Agbedahin (2019) emphasized that ESD is not only related to knowledge about the environment, but also to the formation of critical thinking skills, ethical decision-making, and understanding of the relationship between humans and their ecosystems. In many countries, ESD is implemented as a cross-curricular approach, which combines cognitive, affective, and psychomotor dimensions in the learning process. This is in line with the findings of Chalkiadaki (2018) who stated that mastering sustainability competencies in elementary school students can form the basis for the development of 21st-century skills such as systemic thinking, collaboration, and ethical leadership.

In Indonesia, national education policies also show a direction that is in line with ESD principles. The Graduate Competency Standards stipulated in Permendikbud No. 20 of 2016 emphasize the importance of a balance between knowledge, attitudes, and skills, which are basically the foundation of continuous education. Lim et al. (2022) identified that SDGs programs in elementary schools in the ASEAN region, including Indonesia, have increased significantly over the past five years, both in the form of environmental projects, green literacy activities, and teacher training. However, the study also highlights the gap between policy and

implementation, where most schools still focus on the cognitive aspect and have not maximized in developing the dimension of sustainable attitudes and behaviors.

Similar results were also found in the study of Schuler et al. (2018) which analyzed the systemic thinking competencies of elementary school students. They found that students who were exposed to ESD-based learning activities showed a higher ability to understand the cause-and-effect relationship between human activities and their impact on the environment. Thus, the ESD approach not only improves environmental literacy, but also forms a reflective mindset and social responsibility. This approach is in line with the results of a review by Nousheen et al. (2020) who stated that pre-service teacher training that integrates ESD contributes significantly to teachers' readiness to design contextual and value-based sustainability learning.

In addition to the pedagogical aspect, the success of ESD in elementary schools is also determined by institutional support and regional education policies. Richter and De Sousa (2019) highlight that the implementation of ESD often faces obstacles at the implementation level due to limited teacher training, lack of learning resources, and lack of collaboration between stakeholders. This challenge emphasizes the importance of synergy between the government, educational institutions, and the community in realizing sustainable schools. UNESCO (2020) affirms that the success of ESD depends on the commitment of the education system to create a learning environment that supports behavioral change and social transformation.

From the results of the study of various sources, it was found that the success of the implementation of ESD in elementary schools is greatly influenced by the learning approach used. Grosseck et al. (2019) through bibliometric analysis showed that the integration of ESD in science learning is effective when supported by inquiry methods, collaborative projects, and problem-based learning. These methods provide a space for students to understand the concept of sustainability in an applicative and reflective way. In line with that, Chan and Nagatomo (2021) emphasized that the combination of ESD with the STEM (Science, Technology, Engineering, and Mathematics) approach has the potential to strengthen students' critical and creative thinking skills.

The results of international research by Kopnina (2020) also show that countries that successfully implement ESD in primary education generally have flexible and lifelong learning-oriented curricula. They emphasized the importance of community and family involvement in reinforcing the sustainability values taught in schools. In this context, teachers not only play the role of delivering material, but also as facilitators who connect academic knowledge with social and ecological realities. However, the implementation of ESD in elementary schools still faces a number of significant obstacles. One of the main obstacles is the lack of conceptual understanding of teachers regarding the principles of sustainable development. Many teachers do not yet have specific training in integrating ESD into learning implementation plans (*Rencana Pelaksanaan Pembelajaran*/ RPPs) and student evaluations (Agbedahin, 2019). In addition, the limited facilities and learning resources that support sustainability topics are also an inhibiting factor. In some

areas, schools still face limitations in developing environmental programs or community projects due to funding factors and lack of local policy support (Lim et al., 2022).

However, there are various innovative initiatives that have begun to be developed to overcome these obstacles. For example, the implementation of the eco-school model in a number of elementary schools in Indonesia that combines environmental education, recycling activities, and energy saving as part of the school culture. This model has been proven to be able to foster sustainable habits among students and increase parental participation in environmental education activities (Ghany, 2018). In addition, the application of project-based learning approaches has shown effectiveness in increasing student engagement as well as linking theory to daily living practice.

These findings show that the implementation of Education for Sustainable Development in primary schools cannot be done partially, but must be integrative and systemic. Effective implementation requires a paradigm shift in education that places sustainability as a core value in all aspects of learning. This requires not only pedagogical innovation, but also policy reform and cross-sectoral collaboration. Thus, ESD plays a role not only as a means of education, but also as a nation-building strategy to create a more environmentally conscious, socially resilient, and economically ethical society.

4. Conclusion

Education for Sustainable Development (ESD) has a strategic role in shaping the awareness, values, and behavior of the younger generation towards environmental, social, and economic sustainability. Based on the results of the analysis, the implementation of ESD in elementary schools has shown a positive direction through the integration of sustainability values into the curriculum, thematic learning, and various eco-friendly school programs. The application encourages students to understand the relationship between human actions and their impact on ecosystems, as well as develop critical, collaborative, and reflective thinking skills.

However, the implementation of ESD at the elementary level still faces various challenges, especially the limited capacity of teachers, the lack of supporting resources, and the gap between national policies and practices in the field. Improved training for teachers, the development of contextual learning media, and institutional support are needed so that sustainability values can be effectively implemented. In addition, the active involvement of the community, government, and industry is also very important to strengthen a sustainable education ecosystem. ESD in elementary schools is not only a pedagogical approach, but also a human development strategy with character and a vision for the future. Through collaboration between stakeholders, curriculum innovation, and school culture that instills concern for the environment and humanity, basic education can be the foundation for the creation of a sustainable and resilient society in the face of global change.

References

Agbedahin, A. V. (2019). Sustainable development, Education for Sustainable Development, and the 2030 Agenda for Sustainable Development: Emergence, efficacy, eminence, and future. *Sustainable development*, *27*(4), 669-680.

Chalkiadaki, A. (2018). A systematic literature review of 21st century skills and competencies in primary education. *International Journal of Instruction*, *11*(3), 1-16.

Chan, M. N., & Nagatomo, D. (2021). Study of STEM for sustainability in design education: Framework for student learning and outcomes with design for a disaster project. *Sustainability*, *14*(1), 312.

Ghany, H. (2018). Penyelenggaraan Pendidikan Untuk Pembangunan Berkelanjutan Di Sekolah Dasar. *Jurnal Madaniyah*, *8*(2), 189-202.

Grosseck, G., Ţîru, L. G., & Bran, R. A. (2019). Education for sustainable development: Evolution and perspectives: A bibliometric review of research, 1992–2018. *Sustainability*, *11*(21), 6136.

Kopnina, H. (2020). Education for the future? Critical evaluation of education for sustainable development goals. *The Journal of Environmental Education*, *51*(4), 280-291.

Lim, C. K., Haufiku, M. S., Tan, K. L., Farid Ahmed, M., & Ng, T. F. (2022). Systematic review of education sustainable development in higher education institutions. *Sustainability*, *14*(20), 13241.

Nousheen, A., Zai, S. A. Y., Waseem, M., & Khan, S. A. (2020). Education for sustainable development (ESD): Effects of sustainability education on pre-service teachers' attitude towards sustainable development (SD). *Journal of Cleaner Production*, *250*, 119537.

Richter, B. W., & De Sousa, L. O. (2019). The implementation of environmental education to promote sustainability: An overview of the processes and challenges. *International Journal of Sustainable Development & World Ecology*, *26*(8), 721-731.

Schuler, S., Fanta, D., Rosenkraenzer, F., & Riess, W. (2018). Systems thinking within the scope of education for sustainable development (ESD)–a heuristic competence model as a basis for (science) teacher education. *Journal of Geography in Higher Education*, *42*(2), 192-204.

Timm, J. M., & Barth, M. (2021). Making education for sustainable development happen in elementary schools: The role of teachers. *Environmental Education Research*, *27*(1), 50-66.

UNESCO. (2020). Education for Sustainable Development: A Roadmap. Paris: UNESCO Publishing. Retrieved November 15, 2022 from https://unesdoc.unesco.org/ark:/48223/pf0000374802