

Analysis Of The Application Of Education For Sustainable Development (ESD) Values In Science Learning At MTS Manbaul Ulum Parengan

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Abstract

Abstract: Education for Sustainable Development (ESD) as an effort to realize the Sustainable Development Goals (SDGs) agenda, SDGs is an alternative approach in the field of education in preparing a generation to have a sustainable lifestyle. In achieving its goals, ESD has four indicators of ESD values from an environmental perspective which are used as references, these four indicators are natural resources, climate change, rural development, and disaster prevention and management. These four indicators also have several sub-indicators. This research aims to analyze how ESD values are applied in science learning at MTs Manbaul Ulum from an environmental perspective, what ESD values have been implemented at the school and what have not been implemented. The method used in this research is quantitative descriptive. Data collection used in this research was questionnaires and interviews with students. The research results show that the application of ESD values in science learning: (1) the natural resource indicator shows a percentage of 52% with medium criteria. (2) the climate change indicator shows a percentage of 53% with moderate criteria. (3) the rural development indicator shows a percentage of 58% with medium criteria. (4) the disaster prevention and management indicator shows a percentage of 71% with good criteria.

Keywords: ESD (Education for Sustainable Development); Science Learning; ESD values; Analysis

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1. INTRODUCTION

The rapid development of science and technology has made human activities increasingly varied (Ghany, 2018). Development activities and rapid technological advances in various fields will continue to have an impact on the environment, both positive and negative impacts, namely in the form of pollution and environmental damage, which will ultimately result in a decrease in quality or environmental degradation (Monalisa, 2013). Monalisa (2013) also argues that to anticipate pollution and environmental damage, national development is directed to implement the concept of environmentally friendly development or sustainable development. Sustainable development is development with the aim of improving the quality of life, both from the current and future generations. In sustainable development, there are 17 goals called sustainable development goals (SDGs). One of the efforts to realize the SDGs is through education called Education for Sustainable

Development (ESD). (Purnamasari & Hanifah, 2021). The application of science in daily life related to environmental issues is expected to make learning more meaningful and can lead students to think ahead and have an awareness of sustainable values (Clarisa, et al, (2020).

Education for Sustainable Development (ESD), emerged from environmental education which is currently a global program (Segara, 2015). Jones & Dip (2013) in their research said, based on the United Nation Decade of Education for Sustainable Development UNDESD (2005-2014) ESD seeks to empower people of all ages to take responsibility in creating a sustainable future. This is also in accordance with the opinion of Listiawati (2011) who said that ESD tries to instill human values in every person regardless of age. According to Agusti et al (2019), ESD is lifelong learning which aims to inform and involve residents to be active, creative, also have problem-

solving skills, scientific, social, literacy, and then commit to being tied to personal and group responsibilities where this action will ensure environmental welfare economically in the future. The Center for Policy Research, Research and Development Agency of the Ministry of National Education, has made a module since 2010 on the Educational Model for ESD through intracurricular activities that are expected to be implemented into the curriculum at the education unit level. But in reality, until 2021, there have not been many education unit levels that have implemented ESD-oriented education (Roshayanti, 2021).

Science is one of the sciences that discusses natural phenomena that are systematically arranged based on the results of experiments and observations. One of the objectives of learning science is an understanding of the natural environment and natural wealth that needs to be maintained and preserved. So it is hoped that after studying science, students can actively contribute to environmental conservation efforts (Mulyani et al., 2023). Trimansyah (2022) argues that the learning outcome that will be achieved in science learning is how students are able to adapt to the environment in real life. Trimansyah (2022) also added, specifically science is a learning that discusses the whole of nature in a systematic way, therefore science is not only learning concepts, principles, and facts but also carrying out a discovery process so that students can witness nature directly. Currently, development activities that are still being carried out do not pay attention to the effects of these activities on the environment. In fact, some technological advances have been used to exploit natural resources beyond their limits. These things have had an impact on the decline in environmental quality and the deterioration of existing natural resources.

From the theoretical review and research above, this study focuses on ESD values in science learning. ESD has great potential in supporting the success of achieving the global goals of the SDGs, especially seen from its compatibility with the curriculum and the use of commonly used technology. So it is feared that students do not understand how to apply ESD in

Science Learning provided by teachers, considering the lack of adequate information about ESD values in learning, a study of this is needed. According to the Ministry of National Education (2010) ESD has three important perspectives, namely socio-cultural, environmental, and economic. This study aims to analyze how the application of ESD values in science learning at MTs Manbaul Ulum in an environmental perspective. What are the ESD values that have been applied in the school and those that have not been implemented. There are four indicators of ESD values in the environmental perspective that are used as a reference, the four indicators are natural resources, climate change, rural development, and disaster prevention and management. The four indicators have several sub-indicators as a reference to support the indicators used.

2. METHOD

The method used in this study is qualitative descriptive. The data collection used in this study is questionnaires and interviews with students. Qualitative descriptive research requires data in the form of descriptive information (Subandi, 2011). Subandi (2011) also argues that in qualitative research, the main characteristics come from the natural/reality background in society, using qualitative methods with observation, interviews, and document review. Theories are built on data. The presentation and analysis of data in qualitative research is carried out in a narrative manner. Types of qualitative research such as descriptive, case studies, phenomenological, and historical. The subjects in this study were 8 grade VII students at MTs Manbaul Ulum Parengan in Tuban Regency, East Java Province. At the data collection stage, the steps in calculating the percentage of ESD indicators for each environmental perspective are as follows:

$$\text{Value (\%)} = \frac{\text{average score}}{\text{maximal score}} \times 100$$

Then, the results of the calculations obtained are qualified with the calculation criteria, as shown in table 1.

Table 1. Calculation Criteria

Presented	Criterion
81-100	Excellent
61-80	Good
41-60	Medium
21-40	Not good
0-20	Very less

Source: Sugiyono (2011)

The data analysis technique in this study uses a descriptive data analysis technique, namely with a questionnaire. The questionnaire contains statements that lead to ESD values in science learning. The statements distributed to respondents were 20 items. It consists of positive statements and negative statements, which are adjusted to a measurement scale in the form of a likert scale with 5 answer options, namely: Very often (VO), Often (O), Sometimes (S), Rarely (R), and Never (N). With the Likert scale, the variables to be measured are described as variable indicators. Then the indicator is used as a starting point for compiling instrument items that can be in the form of statements or questions (Sugiyono, 2016).

3. RESULTS AND DISCUSSION

The results of this study describe the application of ESD values in science learning at MTs Manbaul Ulum Parengan Tuban with four indicators of ESD values in an environmental perspective that are used as a reference. The number of average and frequency scores obtained on the natural resources indicator can be seen in figure 1.

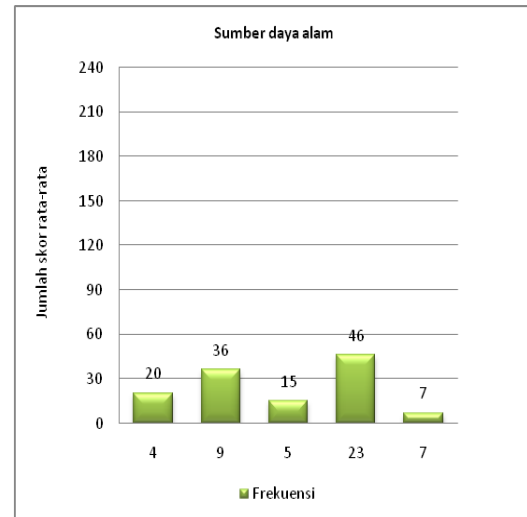


Figure 1. Natural Resources Indicator Chart

The number of average scores and frequencies on climate change indicators can be seen in figure 2.

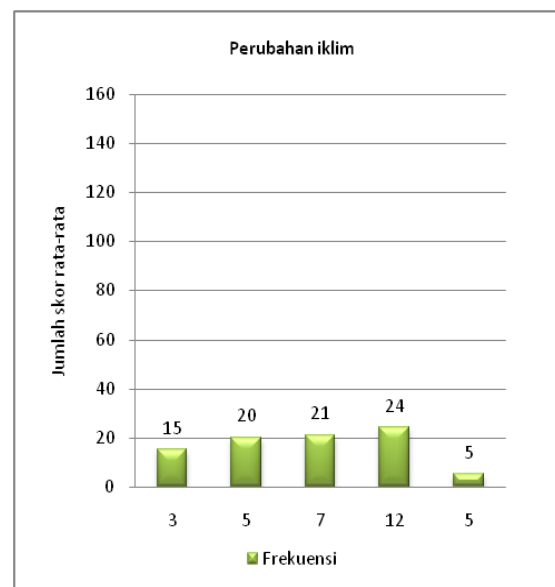


Figure 2. Climate Change Indicator Chart

The number of average scores and frequencies in rural development indicators can be seen in figure 3.

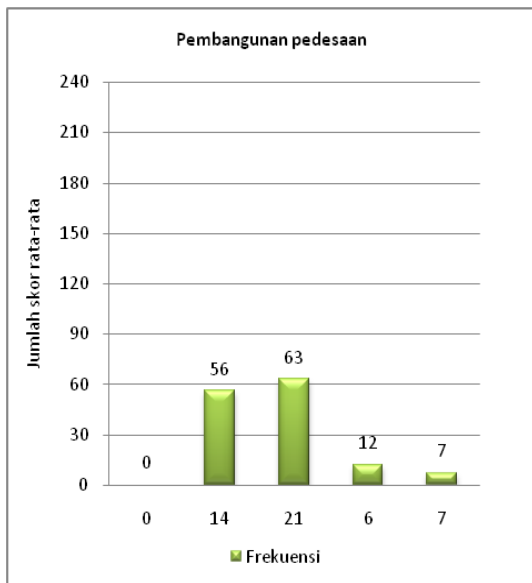


Figure 3. Rural Development Indicator Chart

The number of average scores and frequencies on disaster prevention and management indicators can be seen in figure 4.

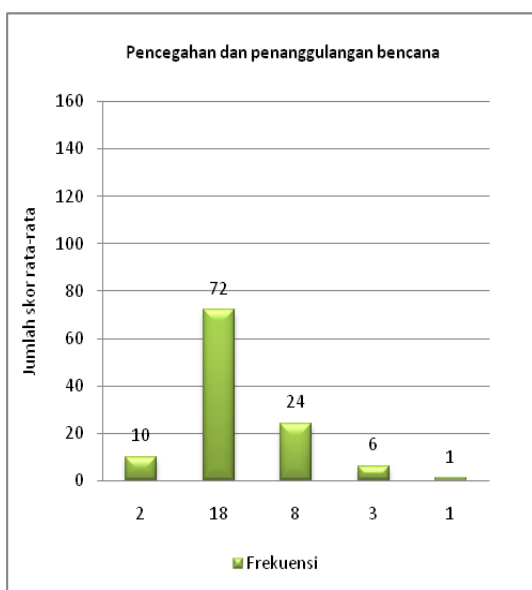


Figure 4. Disaster Prevention and Management Indicator Chart

Meanwhile, the percentage of the average score per indicator of ESD values can be seen in table 2.

Table 2. Percentage of the average score of the ESD Values indicator

Indicator	Presented	Criterion
Natural Resources	52%	Medium
Climate Change	53%	Medium
Rural Development	58%	Medium
Disaster Prevention and Management	71%	Good

The natural resources indicator shows the lowest percentage, which is 52% with medium criteria. The climate change indicator shows a percentage of 53% with moderate criteria. The rural development indicator shows a percentage of 58% with moderate criteria. And the disaster prevention and management indicators show the highest percentage, which is 71% with good criteria.

4. CONCLUSION

From the results of the study, it was concluded that ESD values in science learning can form students' awareness of the attitude of protecting the surrounding environment as a form of caring for future life. Science learning, especially in grade VII, has the potential to apply ESD values, although some indicators are still in the medium criteria. This makes science learning still need to be developed so that values in the environmental perspective can be well integrated. School is a place for the young generation to learn, one of which is about how to live sustainably. Thus, the application of ESD values is very important to be implemented in science learning as an effort to change the mindset about utilizing energy sources and protecting the environment for the next life.

5. REFERENCE

Agusti, K. A., Wijaya, A. F., & Tarigan, D. E. (2019, December). Problem based learning dengan konteks ESD untuk meningkatkan keterampilan berpikir kritis dan sustainability awareness siswa SMA pada materi pemanasan global. In *Prosiding Seminar Nasional Fisika (E-Journal)* (Vol. 8, pp. SNF2019-PE).

- Clarisa, G., Danawan, A., Muslim, M., & Wijaya, A. F. C. (2020). Penerapan Flipped Classroom dalam Konteks ESD untuk Meningkatkan Kemampuan Kognitif dan Membangun Sustainability Awareness Siswa. *Journal of Natural Science and Integration*, 3(1), 13-25.
- Ghany, H. (2018) Providing Education for Sustainable Development in Primary Schools. *Madaniyah*, 8(2), 186-198.
- Jones, G., & Dip Ed, M. (2013). UN Decade of Education for Sustainable Development (2005-2014): A Progress Report. In 8th International Symposium on Sustainable Leadership.
- Kementerian Pendidikan Nasional (KPN). (2010). Model Pendidikan untuk Pembangunan Berkelanjutan (Education for Sustainable Development/ESD) Melalui Kegiatan Intrakurikuler. Jakarta: Balitbang Kemdiknas.
- Listiawati, N. (2011). Relevansi Nilai-Nilai ESD dan Kesiapan Guru Dalam Mengimplementasikannya di Sekolah. *Jurnal Pendidikan Dan Kebudayaan*, 17(2), 135-152. <https://doi.org/10.24832/jpnk.v17i2.13>
- Monalisa, M. (2013). PROGRAM ADIWIYATA DALAM PENGELOLAAN LINGKUNGAN SEKOLAH DI SMPN 24 PADANG. *Jurnal Pendidikan Geografi*, 1(01).
- Mulyani, T., Dewi, E. R. S., & Hayat, M. S. (2023). Potensi Pembelajaran Yang Berorientasi ESD (Education For Sustainable Development) Pada Guru IPA Kelas 7 MTS Kabupaten Banjarnegara. *Jurnal Inovasi Pembelajaran di Sekolah*, 4(2), 424-429. <https://doi.org/10.51874/jips.v4i2.139>
- Purnamasari, S., & Hanifah, A. N. (2021). Education for Sustainable Development (ESD) dalam pembelajaran IPA. *Jurnal Kajian Pendidikan IPA*, 1(2), 69-75. <http://dx.doi.org/10.52434/jkpi.v1i2.1281>
- Roshayanti, F. (2021). Potensi Implementasi Education for Sustainable Development (ESD) Pada Konsep Dinamika Rotasi. *UPEJ Unnes Physics Education Journal*, 10(3), 241-247. <https://doi.org/10.15294/upej.v10i3.55694>
- Segara, N., B. (2015). Education for Sustainable Development (ESD) Sebuah Upaya Mewujudkan Kelestarian Lingkungan. *SOSIO DIDAKTIKA: Social Science Education Journal*, 2(1), 2015, 22-30. doi:10.15408/sd.v2i1.1349 <http://dx.doi.org/10.15408/sd.v2i1.1349>
- Subandi, S. (2011). Deskripsi kualitatif sebagai satu metode dalam penelitian pertunjukan. *Harmonia journal of arts research and education*, 11(2), 62082.
- Sugiyono, (2011). *Metode Penelitian Pendidikan*, Bandung: CV. Alfabeta, hal.137.
- Sugiyono, (2016). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*, Bandung: CV. Alfabeta, hal. 93.
- Trimansyah, T. (2022). Implementasi Metode Outdoor Stady Dalam Pembelajaran Ipa Untuk Meningkatkan Pemahaman Pelestarian Alam. *FASHLUNA*, 3(1), 53-61. <https://doi.org/10.47625/fashluna.v3i1.362>