

Profile of Sustainability Awareness at Elementary School Bumirejo 2 Kebumen

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Abstract: Sustainability awareness is the understanding and awareness of individuals or groups regarding the process of sustainable development and the impact of their actions on the surrounding environment. The purpose of this study was to analyze the profile of students' sustainability awareness at Elementary School 2 Bumirejo, Kebumen related to energy material. This study was a survey study. The subjects of this study were 25 4th grade students. The data collection technique used a semi-closed questionnaire. The data analysis technique used a descriptive technique which aims to provide a clear and detailed description of the data that has been collected which then makes it easier to interpret and make decisions based on the existing data. The results of the analysis showed that students' sustainability awareness was included in the good category, with an average score of 73.06%. The Emotional Awareness (EA) category is the highest category compared to other categories, with a percentage score of 85%. Meanwhile, the sustainability practice awareness (SPA) category is the lowest category compared to other categories, with a percentage score of 60.8%. These results indicate that the research conducted has supported the concept of Educational for Sustainability Development (ESD) at the sustainability awareness level.

Keywords: Sustainability Awareness, Energy Material, Elementary School, Students Survey Study.

Introduction

Education for Sustainable Development (ESD) plays an important role in promoting sustainable development that includes the environment, social, and economy, as well as providing various competencies to individuals for a sustainable future (Mulyadiprana, Rahman, Hamdu, & Yulianto, 2023). In the context of education, the development of innovative learning tools oriented to the concept of sustainable learning is needed. ESD usually focuses on developing and strengthening individual competencies, enabling them to contribute and participate in sustainable development processes of various types and dimensions. The concept of sustainable development aims to achieve a balance between the welfare and improvement of people's lives

globally, while preserving natural resources and ecosystems.

Sustainability awareness is the understanding and awareness of individuals or groups regarding the process of sustainable development and the impact of their actions on the surrounding environment. Sustainability awareness is one of the important aspects that must be instilled early on in the education system, especially at the elementary school level. This awareness includes an understanding of the importance of protecting the environment, managing energy efficiently, and reducing the negative impacts of human activities on nature. Sustainability education plays a key role in shaping a generation that is more responsible for the environment and natural resources (Purnamasari & Hanifah, 2021).

At SD Negeri 2 Bumirejo, Kebumen, programs related to sustainable development have been implemented in the daily learning process. This includes the integration of sustainability concepts in various subjects, such as Natural Sciences (IPA), which aims to instill early awareness of energy, environmental, and sustainability issues.

This study aims to analyze the profile of sustainable awareness at SD Negeri 2 Bumirejo Kebumen with a focus on grade 4 students. This analysis is expected to provide an overview of the level of student awareness of the importance of protecting the environment and energy, as well as how schools can play a greater role in increasing this awareness through various sustainable education programs.

Materials and Methods

This research is a type of quantitative research where data collection and analysis are based on numbers and numerical measurements using the survey method. The data collection technique uses a semi-closed questionnaire, namely with predetermined answers (Ardiansyah, Risnita, & Jailani, 2023) . The research subjects were 25 students of grade 4 of SD N 2 Bumirejo. The instruments used in this study were 15 questions from the sustainability awareness questionnaire adopted from the journal "The status on the level of environmental awareness in the concept of sustainable development amongst secondary school students" (Hassan, Noordina, & Sulaiman, 2010) . The following is a questionnaire used to determine students' sustainability awareness attitudes:

Table 1. Sustainability Awareness Questionnaire

No	Statement	Yes	No
1.	I read about environmental issues in the mass media.		
2.	I care about the environment with my friends.		
3.	I always discuss environmental issues with my friends.		
4.	I feel disappointed with the air pollution.		
5.	I feel disappointed with the river		

	pollution.		
6.	I value biodiversity.		
7.	I care about the smoke coming from vehicles.		
8.	I try to reduce the amount of waste at home by collecting recyclable materials.		
9.	I compost food scraps into fertilizer.		
10.	I don't use plastic bags to wrap things.		
11.	I turn on the lights at home during the day.		
12.	I save on clean water usage.		
13.	I convey information about the environment to my family members.		
14.	I participated in environmental awareness activities at school.		
15.	I am aware of my responsibility towards the environment.		

Then all statements in the questionnaire are grouped into three categories, namely as follows:

Table 2. Items to measure Sustainability Awareness in each category.

Sustainability Awareness category	Item
Sustainability Practice Awareness, Behavioral and Attitude Awareness	3,9,10,13,14
Emotional Awareness	1,6,7,8,11,12
	2,4,5,15

The results of the questionnaire are then processed using the Guttman scale. Which contains a firm yes or no answer. On the Guttman scale, answers can be given the highest and lowest scores. For yes answers, the highest score is 1 and no answers, the lowest score is 0. Then the data is made into a percentage in the following way:

$$Percentage (\%) = \frac{total\ score\ obtained}{maximum\ score} \times 100\%$$

After being calculated and the results obtained, the following criteria are created to interpret the sustainability awareness attitude:

Table 3. Percentage of *sustainability awareness* based on criteria (Fatimah et. al, 2024).

Percentage criteria	Category
0-20%	Very low
21-40%	Low
41-60%	Enough
60-80%	High
80-100%	Very high

The results of the sustainability awareness percentage are classified according to the criteria in the following table.

Table 3. Percentage of *sustainability awareness* based on criteria (Hasan et. al, 2010)

Percentage criteria	Category
0-39.9%	A rare habit to do
40-69.9%	Habits that have been done/are happening at a moderate level
70-100%	Habits that are often/always done/occur.

Then the collected data is analyzed using quantitative descriptive analysis techniques. Quantitative descriptive techniques are analysis methods that aim to provide a clear and detailed picture of the data that has been collected which then makes it easier to interpret and make decisions based on the existing data (Haryanti, 2020).

Results and Discussion

Results

This study is a study that focuses on the profile of sustainable awareness in students of SD Negeri 2 Bumirejo. Where researchers in identifying the profile of sustainable awareness used a questionnaire containing 15 questions which is an instrument adopted from the work of Hasan et. al (2010) entitled "The status on the level of environmental awareness in the concept of sustainable development amongst secondary school students" and also further adopted in the journal Clarissa et. al (2020). The criteria for sustainability awareness in the form of presentations are (0-20%) Very low, (21-40%) Low, (41-60%) Sufficient, (60-80%) High, (80-100%) Very

high. In general, the results of the recapitulation of the sustainability awareness questionnaire show that students' sustainable awareness is in the good category with an average score of 73.06%. In showing the profile of sustainable awareness in the sustainability awareness questionnaire itself, it is divided into three categories, namely sustainability practice awareness, behavioral and attitude awareness and emotional awareness, Clarissa et. al (2020). The following table shows the average value of each category and the total percentage of responses to determine students' level of sustainability awareness.

Table 4. Percentage of students' sustainability awareness answers to energy material.

Statement	Percentage
Sustainability Practice Awareness	
I always discuss environmental issues with my friends	60%
I compost food waste into fertilizer	32%
I don't use plastic bags to wrap things.	40%
I convey information about the environment to my family members.	88%
I participated in environmental awareness activities at school.	84%
Behavior and Attitude Awareness	
I read about environmental issues in the mass media.	64%
I value biodiversity	100%
I care about the smoke coming from vehicles.	48%
I try to reduce the amount of waste at home by collecting recyclable materials.	68%
I turn on the lights at home during the day	76%
I save on clean water usage	96%
Emotional awareness	
I care about environmental issues with my friends	92%
I feel disappointed with river pollution	84%
I am aware of my responsibility towards the environment	88%
I feel disappointed with the air pollution	76%
Total percentage	73.06%.

Then from the statement above is classified into percentage based on the category of student sustainability awareness. The following table shows the percentage results based on the category of student sustainability awareness.



Figure 1. Profile of students' sustainability awareness in the three categories.

Information :

SPA: Sustainability Practice Awareness,

BBA : Behavior and Attitude Awareness

EA: Emotional Awareness

Figure 1 shows the results of the percentage of students' sustainability awareness in each category. The Emotional Awareness (EA) category is the highest category compared to other categories, with a percentage score of 85%. Meanwhile, the sustainability practice awareness (SPA) category is the lowest category compared to other categories, with a percentage score of 60.8%. Based on the results of the analysis of the sustainability awareness of students at SD N 2 Bumirejo as a whole, it shows a good category, with an average score of 73.06%.

a. Sustainability Practice Awareness (SPA)

Based on the analysis results in Figure 1, the Sustainability Practice Awareness (SPA) category in sustainability awareness shows a good category with a percentage of 60.8%. The figure shows that the respondent's presentation for Sustainability Practice Awareness (SPA) behavior means that it has been or is being carried out at a moderate level by the majority of students. In this category, the habits carried out by students are discussing environmental problems with my friends, composting leftover food into fertilizer, not using plastic bags to wrap goods, conveying information about the environment to my family members, and participating in environmental awareness activities at school.

Based on table 4 above, the most students' responses were 88% on the statement "I convey information about the environment to my family members" which shows that students' awareness of sustainability is very high. The next highest response was on the statement "I participate in environmental awareness activities at school" with a presentation score of 84%. From this statement, it shows that students' awareness of sustainability is also very high. While the lowest statement was on the statement "I compost food scraps into fertilizer" which had a presentation of 32%. From this statement, it states that students' level of awareness of sustainability is low.

b. Behavioral and Attitude Awareness (BAA)

Based on the analysis results in Figure 1, the Behavioral and attitude awareness (BAA) category in sustainability awareness shows a good category with a percentage score of 75.3%. In Figure 1, it can be seen that the presentation of respondents for Behavioral and attitude awareness (BAA) behavior means often or always done or occurs by most students. In this category, habits that are often done by students are reading about environmental issues in the mass media, appreciating biodiversity, caring about smoke from vehicles, trying to reduce the amount of waste at home by collecting recyclable materials, turning on lights at home during the day, and saving clean water usage.

Based on table 4 above, the most students' responses were 100% on the statement "I appreciate biodiversity" which shows that students' awareness of sustainability is very high in the Behavioral and attitude awareness category. The next highest response was on the statement "I save on clean water use" with a presentation score of 96%. From this statement, it shows that students' awareness of sustainability is also very high. While the lowest was on the statement "I care about the smoke from vehicles" which had a presentation of 48%. From this statement, it states that the level of students' awareness of sustainability is still in a sufficient state.

c. Emotional Awareness (EA)

Based on the analysis results in Figure 1, the Emotional awareness (EA) category in

sustainability awareness shows a very good category with a percentage of 85%. The figure shows that the respondent's presentation for Emotional awareness (EA) behavior shows habits that are often/always done/occurred by some of the students. In this category, the habits carried out by students are caring about environmental problems with friends, feeling disappointed with river pollution, realizing responsibility for the environment, feeling disappointed with air pollution.

Based on table 4 above, the most students' responses were 92% on the statement "I care about environmental issues with my friends". This shows that students' sustainability awareness is very high in the Emotional awareness (EA) category. The next highest response was on the statement "I am aware of my responsibility to the environment" with a presentation of 88%. From this statement, it shows that students' sustainability awareness is also very high. While the lowest was on the statement "I feel disappointed with air pollution" with a presentation of 76%. From this statement, it states that the level of students' sustainability awareness is high.

Discussion

Based on the results presented previously on sustainability awareness above, it can be seen that the Emotional awareness category or emotionally is the best, but it is less demonstrated through real practice or carried out continuously (sustainability). The results of this study are the same as in several journals that we found. First, in a study conducted by Nursaidah et. al (2018) with sustainability awareness at a moderate level with a breakdown of results, namely 30% in the sustainability practice awareness category, 83.8% in the behavioral and attitude awareness category, and 93.7% in the emotional awareness category. Second, in a study conducted by Ekamilasari et. al (2019) with sustainability awareness at a moderate level with a breakdown of results, namely 37.95% in the sustainability practice awareness category, 70.63% in the behavioral and attitude awareness category, and 86.92% in the emotional awareness category. Third, in a study conducted by Clarisa et. al (2020) with sustainability awareness at a

moderate level with detailed results of 44.2% in the sustainability practice awareness category, 69.2% in the behavioral and attitude awareness category, and 99.3% in the emotional awareness category. However, from the three journals above, it is different from the results of the study conducted by Rini and Nuroso (2022) where sustainability awareness is at a high level with detailed results of 83.6% in the sustainability practice awareness category, 79.9% in the behavioral and attitude awareness category, and 85.7% in the emotional awareness category.

When viewed from the level of sustainable awareness, the research conducted has supported the concept of Educational for Sustainability Development (ESD). This is in accordance with research conducted by Hasan et. al (2010) which states that a high or good level of sustainability awareness is a driving factor in the success of Educational for Sustainability Development (ESD). The factor that causes the high level of sustainability awareness is the difference in research location, where the research location we conducted was in an urban area. In urban areas, the level of sustainability awareness is high because they experience environmental problems directly both in emotional, sustainability practices, and attitudes and behaviors. In addition, in the results of his research, Hasan et. al (2010) also stated that the level of sustainability awareness of students in urban schools is higher than that of students in suburban or rural schools.

Conclusions

Based on the research that has been conducted, the results of the study on the level of students' sustainability awareness show a good or high category with an average of 73.06%. The Emotional Awareness (EA) category is the highest category compared to other categories, with a percentage score of 85%. Meanwhile, the sustainability practice awareness (SPA) category is the lowest category compared to other categories, with a percentage score of 60.8%. These results indicate that the research conducted has supported the concept of Educational for Sustainability

Development (ESD) at the sustainability awareness level. Based on this research, there is something that needs to be considered in future research, namely how to increase sustainability awareness in sustainability practice awareness or real practice through activities that can support the progress of Education for Sustainable Development (ESD), especially at the elementary school level.

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