

Identifying Environmental Awareness of Indonesian's Elementary School Students in South Kalimantan



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ABSTRACT: Identifying environmental awareness is essential for researchers to make detailed plans related to environmental education suitable for students' conditions. This study aimed to identify environmental awareness among elementary school students in South Kalimantan, Indonesia. This research uses a survey technique in collecting data. In general, students have good environmental awareness, as evidenced by most of their statements that they often and always carry out environmentally sustainable activities. However, several things need to be underlined because students still often do this, such as using excessive paper, throwing used batteries directly to the right place without being sorted first, and the habit of using plastic bags.

KEYWORDS: Environmental Awareness, Elementary School Students

I. INTRODUCTION

Environmental awareness is an important thing that every individual needs to have. Environmental awareness arises due to several ecological problems in the environment due to the actions of individuals or communities. Promoting environmental awareness needs to be done to invite the community to be aware of protecting the environment and participate in the management and maintenance of the surrounding environment. Environmental awareness in the world of education in Indonesia is closely related to the *Salingtemas* approach (*Sains, Lingkungan, Teknologi, dan Masyarakat*), which is closely associated with the STS (Science, Technology, and Society) term (Surata & Arjaya, 2018).

The importance of environmental awareness also needs to be owned by students. Many things are conducted by schools in Indonesia in teaching environmental awareness. One of them is integrating the character of love for the environment in every lesson (Bakhtiar, 2016; Prihantoro, 2015; Purwanti & Musadad, 2019). Several studies have shown that the combination of religious education and the character of loving the environment is good for internalizing it in students' daily lives (Mangunjaya, 2011; Parker, 2017).

Several studies and projects on environmental awareness have been carried out by Indonesia. Several studies have explored school strategies for shaping students' environmental awareness (Aliman & Astina, 2019; Darmawan & Dagamac, 2021; La Fua et al., 2018; Mutiani et al., 2020). Other research examines the impact of curriculum implementation in Indonesia on environmental awareness (Jaya, 2020; Purwanti & Musadad, 2019).

II. METHOD

This study aims to determine environmental awareness in elementary school students related to environmental issues. Collecting data by survey method and conducted on elementary school in South Kalimantan. The questionnaire was adapted from Eren & Yaqub (2015), containing 17 statement points, which uses a Likert scale with a range of 1-5. A score of 1 indicates "never," 2 "rarely," 3 "sometimes," 4 "often," and 5 "always." The statement is divided into 3 categories: 1) awareness of consumption and sustainable environment; 2) garbage and recycling; and 3) energy saving.

Participants in this study were elementary school students spread across South Kalimantan with an age range of 10-12 years. The students involved in this study were at levels 4, 5, and 6 of elementary school. Overall the number of students involved was 207 students. Data collection was carried out from March 1, 2022, to April 7, 2022. The data that had been taken was then converted into percentages and described. Triangulation was also conducted to strengthen the data by interviewing students regarding their chosen choices in the questionnaire.

III. RESULT AND DISCUSSION

The first indicator related to environmental awareness is awareness of consumption and a sustainable environment. In this indicator, there are 5 statement points. The statement is more towards saving paper and tends to see students' behavior in utilizing digital technology to reduce paper use. Several statements have shown a good percentage of students' consumption awareness.

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Answers lean more towards "often" and "always". More than half of the students always stated that they often and always did these activities. The percentage distribution of answers from students for each statement can be seen in Table 1.

However, some students still answer "sometimes, rarely, and never" on some statements. As an illustration of statement number 2, regarding printing paper on both sides, the total answers were sometimes 21.73%, rarely 12.56%, and never 0.5%. This percentage is undoubtedly quite large compared to other statements. It needs to be underlined as an essential thing to be disseminated to students that paper savings. Students should note that 1 ton of A4 paper requires at least 24.29 trees (Standard Chartered Bank, 2010). Also, printing paper on both sides saves at least 30% of paper usage (Federal Electronic Challenges, 2012; WWF, 2015).

The same applies to statements regarding the use of digital technology in statements 4 and 5: students who vote "sometimes, rarely and never" are still relatively high, more than 20%. The details in statement number 4 are related to sending documents. Some students still use printed documents to be sent instead of email. Many as 18.36% chose sometimes, 8.21% chose rarely, and 0.96% chose never. In statement number 5, it is also the same case. Some students sometimes still print documents to be read instead of viewing them on a computer to reducing paper usage. This point can be emphasized as something that needs to be introduced to students. Electronic devices (such as computers, tablets, smartphones, and laptops) to access digital documents significantly impact reducing the use of paper. Many studies state that devices such as tablets can reduce paper consumption to the maximum compared to other devices (Al-Qahtani, 2012; King & Toland, 2014).

On indicators related to consumption awareness, several things need to be emphasized to be disseminated back to schools, teachers, and students. The first thing that needs to be emphasized is to introduce how to manage digital documents, both in the process of transferring these documents via email or social media, and also how to access these documents without printing, either through the use of electronic devices that are familiar with students' daily lives. Another important thing that needs to be done is to invite students to print on both sides of the paper. It will have a significant impact on reducing paper consumption at home and school.

Table 1. Student responses regarding consumption awareness and sustainable environment

No	Awareness of Consumption, and Sustainable Environment	Students' responses (number of students & percentage)					Total
		never	rarely	Some times	often	always	
1	I reuse old school paper/books	1 (0.5%)	8 (3.86%)	20 (9.66%)	128 (61.83%)	50 (24.15%)	207 (100%)
2	If I print through a printer, I will print on both sides of the paper	1 (0.5%)	26 (12.56%)	45 (21.73%)	108 (52.17%)	27 (13.04%)	207 (100%)
3	I always check documents on the computer before printing them through the printer	1 (0.5%)	3 (1.45%)	12 (5.8%)	98 (47.34%)	93 (44.92%)	207 (100%)
4	I send documents via email or social media more often than documents in print	2 (0.96%)	17 (8.21%)	38 (18.36%)	108 (52.17%)	42 (20.28%)	207 (100%)
5	I prefer to read documents on the computer rather than print them first and then read them	4 (1.93%)	27 (13.04%)	35 (16.91%)	96 (46.37%)	45 (21.73%)	207 (100%)

The next indicator is related to waste and recycling (Table 2). The statement contains students' preferences in managing waste and using recycled products. Almost all statements are positive, and only statement number 1 is a negative statement. Several statements showed good results except for statement number 1 regarding how to dispose of batteries and statement number 4 regarding the use of plastic bags.

Based on student responses to statement number 1, students tend to throw unused batteries into the trash directly. Students who answered "often" were 41.54%, and "always" were 22.22%. Disposing of batteries such as dry-cell batteries and rechargeable batteries such as Lithium-ion batteries has experienced many wrong implementations in Indonesia (Kusyuniarti et al., 2011). Batteries are often disposed of, and other types of waste have a dangerous impact. For example, if a Lithium-ion battery is exposed to liquid or if it touches metal in the trash, it will cause a short circuit in the battery and cause a fire (Pipeline and Hazardous Materials Safety Agency, 2021). The culture of sorting battery waste is indeed not widely implemented in Indonesia. Based on the results of student responses to this statement. It needs to be underlined and used as a reference to teach students, teachers, and schools to sort out this type of waste because it has the potential to cause dangerous things.

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The next indicator that is still mostly done by students is related to the use of plastic bags. In statement number 4, the students were asked to disagree with using plastic bags. 34% of students still answered sometimes, 7.25% answered rarely, and 4.83% answered never. It shows that students still agree on using plastic bags, which incidentally are not friendly to the environment. The use of plastic bags in Indonesia is indeed very high. Indonesia occupies the second position as a country that produces 187.2 tons of plastic waste into the sea (Jambeck et al., 2015). Even data from the Ministry of Environment and Forestry, plastic use in Indonesia reaches 700 bags/person/year (Indonesia Ministry of Environment and Forestry, 2016). This fact shows that plastic bags in people's daily lives affect students' responses to this statement, so many students still agree with plastic bags.

Table 2. Student responses regarding Garbage and Recycling

No	Garbage and Recycling	Students' responses (number of students & percentage)					Total
		never	rarely	Some times	often	always	
1	I threw the battery straight in the trash	8 (3.86%)	30 (14.49%)	37 (17.87%)	86 (41.54%)	46 (22.22%)	207 (100%)
2	I prefer rechargeable batteries over disposable batteries.	2 (0.96%)	4 (1.93%)	18 (8.7%)	96 (46.37%)	87 (42.03%)	207 (100%)
3	Overall I prefer long-term products (cloth bags, rechargeable batteries) over disposable products.	2 (0.96%)	2 (0.96%)	11 (5.31%)	92 (44.44%)	100 (48.31%)	207 (100%)
4	I disagree with the use of plastic bags	10 (4.83%)	15 (7.25%)	34 (16.42%)	78 (37.68%)	70 (33.81%)	207 (100%)
5	I prefer biodegradable plastic over ordinary plastic bags	5 (2.41%)	6 (2.9%)	21 (10.14%)	93 (44.93%)	82 (39.61%)	207 (100%)
6	I always save water when using the faucet in the bathroom/toilet	1 (0,5%)	0 (0%)	4 (1.93%)	73 (35.26%)	129 (62.31%)	207 (100%)
7	When using tissue, I always keep the usage to a minimum.	2 (0.96%)	3 (1.45%)	13 (6.28%)	89 (42.99%)	100 (48.31%)	207 (100%)
8	When I eat in the canteen, I always throw the leftover food in the trash and don't leave it on the table.	3 (1.45%)	1 (0.5%)	5 (2.41%)	81 (39.13%)	117 (56.52%)	207 (100%)
9	I sort the waste into several parts (organic and non-organic waste; plastic, paper, and organic)	2 (0.96%)	4 (1.93%)	21 (10.14%)	93 (44.93%)	87 (42.03%)	207 (100%)

The last indicator related to environmental awareness is related to energy saving (Table 3). There are three statements in this indicator. Overall the results obtained are good. Many students choose "often" and "always." The first statement is related to the efficiency of using electronic equipment. Students decided to turn on electronic equipment only when needed, 37.6% of students chose often, and 59.42% chose always. Furthermore, the second statement also obtained the same results. The results obtained were 63 choosing often and 142% choosing always. Student responses were also good in the third statement related to lights usage. 30% of students answered that they often turn off the lights when they are not in the room, and 68.6% choose always to turn off the lights when they are not in the room.

It has long been a priority for the Indonesian government regarding energy saving itself. Since 2007, the central policy of the Indonesian government has been Energy Conservation and Efficiency, as stated in Law number 30 of 2007. In this law, the government urges the public to carry out energy conservation programs through various things, one of which is the efficient use of electronics and lights (Indonesia Law Number 30 of 2007 about Energy Conservation and Efficiency, 2007).

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Table 3. Student responses regarding Energy Saving

No	Energy Saving	Students' responses (number of students & percentage)					Total
		never	rarely	Some times	often	always	
1	To prevent unnecessary energy use, I use lights and electrical devices only when I need them	1 (0,5%)	0 (0%)	5 (2.41%)	78 (37.68%)	123 (59.42)	207 (100%)
2	I turn off my electronic devices when I'm not using it	0 (0%)	0 (0%)	2 (0.96%)	63 (30.43%)	142 (68.6%)	207 (100%)
3	I turn off my room light when I'm not in the room	0 (0%)	0 (0%)	7 (3.38)	63 (30.43%)	137 (66.18%)	207 (100%)

IV. CONCLUSION

Based on the results of environmental awareness measurements, the results obtained from several statements given to students, the results are excellent because students already have environmental awareness. However, some things are underlined because some students still rarely do it. These include saving paper and optimizing the use of digital documents. It can be seen because some students sometimes still use a lot of printed documents to send documents to their friends and print more of the documents first to be read. Another thing that needs to be underlined is the tendency of students to throw unused batteries directly into the trash.

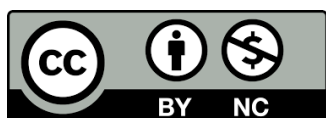
Based on the results of this environmental awareness measurement, it can be used as a reference for researchers or other researchers in developing teaching materials related to the environment following conditions in Indonesia. This study cannot provide a comprehensive picture of students' environmental awareness in Indonesia due to the limited number of samples and the lack of breadth of topics related to environmental awareness in the questionnaire. In the future, researchers hope that research related to measuring environmental awareness can be further developed through several other indicators, both by developing instruments and testing instruments

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