



## **The environmental awareness character of elementary school students in the Kahayan River basin: Comparative study in rural and urban areas**

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### **Abstract**

*This study compares the environmental awareness character of elementary school students in the Kahayan River Basin, Central Kalimantan Province, who live in rural and urban areas. It is a quantitative study using survey data collection methods. The survey was conducted on 60 students: 30 students from SDN Bukit Rawi 1, located in a rural area, and 30 students from SDN Percobaan Palangka Raya, in an urban area. The survey used a questionnaire containing 20 statements with five answer options, using a Likert scale. The collected data is then analyzed using descriptive percentage analysis. The results showed that students living in rural areas of the Kahayan River Basin had better environmental awareness than those living in urban areas. The majority, 70 percent of rural students, demonstrated "Very Good" ecological awareness, while the majority, 73 percent, of urban students, showed "Good" environmental awareness (one level below "Very Good"). Furthermore, rural students had an average score of 90.59 (Very Good), compared to urban students with an average score of 84.30 (Good). The researchers suggest further studies on the factors influencing students' environmental awareness and the development of products/programs to enhance environmental awareness among students in the Kahayan River Basin.*

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**Keywords:** *environmental awareness character; elementary school students; Kahayan River basin.*

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### **INTRODUCTION**

Land use changes, population growth, and the lack of community awareness about environmental conservation in the River Basin (DAS) areas have led to environmental pollution issues. The increasing density of the residential regions, waste from human activities, and industrial waste contribute to pollution, particularly affecting water quality in the river basin (Akhirul, 2020). In the short term, damage to river basins can result in hydrometeorological disasters such as floods, landslides, or droughts. Long-term, it can lead to social conflicts due to water resource availability issues (Roshanti, 2022).

Environmental pollution in the river basin also occurs in the Kahayan River Basin in Central Kalimantan. Research by Yanti (2022) shows that the water quality in the Kahayan River Basin has been polluted, making it unsuitable for clean water use by the local community. The water quality of the Kahayan River cannot be used as it exceeds the water quality standards for clean and drinking water as regulated by PP RI No. 82 of 2001 (Dirun, 2021). The decline in water quality in the Kahayan River is caused by local community behavior, such as dumping garbage into the river (Hujjatusnaini, 2022), the disposal of domestic liquid waste (Leonardo, 2020; Firmanto, 2023), and the dumping of organic waste by the community (Yanti, 2022).

The waste problem has become a severe issue for the Kahayan River Basin community. The river, which serves as a living area for the community, has been polluted by waste due to trash dumping. This problem is exacerbated by the lack of public awareness in managing the river basin environment and waste and wastewater disposal practices that directly contaminate the river (Triyani, 2022).

Various efforts have been made to address pollution problems in the Kahayan River Basin. Triyani (2022) has worked to empower the Kahayan River Basin community in the Palangka subdistrict of Palangka Raya City through the Ecoliteracy program. The Environmental Agency of Palangka Raya City has also played a role in preventing pollution in the Kahayan River through educational supervision and prevention efforts (Samson, 2021). However, further efforts are still needed from various sectors and through multiple methods to prevent and address environmental pollution in the Kahayan River Basin. Educating children about environmental awareness is a practical preventive step in addressing these ecological issues (Naziyah, 2021).

Environmental awareness refers to attitudes and actions aimed at preventing damage to the surrounding natural environment and efforts to repair existing ecological damage (Ismail, 2021). The environmental awareness is closely related to the concept of ecological intelligence (Sunarno, 2023). Education is one of the platforms where students can receive beneficial education, including lessons on developing an environmentally conscious character

(Siskayanti, 2022). Environmental awareness and character education should be introduced early, starting from elementary school. Students with solid ecological awareness will positively impact the environment in the future. Naziyah (2021) explains that environmental character education in elementary schools can be implemented through regular routines, spontaneous activities, modeling, conditioning, school culture, and ecological health.

Environmental awareness among elementary school students in river basin areas is a significant focus in environmental education. Living near a river often causes these students to be directly involved in environmental issues such as water pollution and soil erosion (Wijayanti, 2017; Purwanti, 2018; Suyono, 2019; Nurhadi, 2020). Environmental awareness character can be influenced by place of residence, social conditions, and spiritual aspects (Karliani, 2023). Fitriyah (2021) explains that children living in rural areas tend to have higher naturalistic intelligence than those in urban areas, as they are closer to nature and the natural environment. Research comparing environmental awareness between students in rural and urban areas has shown significant differences in various aspects. Generally, rural students tend to have a closer relationship with their surroundings due to their day-to-day connection with nature. In contrast, urban students are often more exposed to global environmental issues through media and the education system, but they might lack direct interaction with nature (Supriyadi, 2018; Saraswati et al., 2019). Therefore, this study aims to compare the environmental awareness character of students in the Kahayan River Basin who live in urban and rural areas.

## METHOD

This study uses a descriptive quantitative method, and data collection was conducted through a survey. The survey was administered to 60 students in the Kahayan River Basin area. Among these, 30 students live in rural areas, and the other 30 students live in urban areas. The study was conducted at SDN Bukit Rawi 1, located in Bukit Rawi Village, Kahayan Tengah District, Pulang Pisau Regency, and SDN Percobaan, located in Palangka Raya. SDN Bukit Rawi 1 was chosen as the research location because it is located in the Kahayan River Basin in a rural area. Meanwhile, SDN Percobaan was selected because it is located in an urban area of the Kahayan River basin. The instrument used for data collection was a questionnaire with five answer options, using a Likert scale.

Table 1. Answer categories and scores

No	Answer Choices	Code	Score
1	Strongly Agree	SS	5
2	Agree	S	4
3	Doubt	R	3
4	Disagree	TS	2
5	Strongly Disagree	STS	1

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The questionnaire consists of 20 statements based on four indicators of environmental awareness character, which are (1) environmental care, (2) reduction in plastic use, (3) waste management, and (4) energy conservation. The collected data is then analyzed using descriptive percentage analysis with the following formula:

$$CCP = \frac{F}{N} \times 100 \quad (1)$$

P = Percentage of responses

F = Frequency of scores obtained from all items

N = Number of respondents

The criteria used to assess environmental awareness character are as follows:

Table 2. Criteria for assessing environmental awareness character

No	Scores obtained	Assessment Criteria
1	90.01 - 100.00	Very Good
2	70.01 - 90.00	Good
3	50.01 - 70.00	Fair
4	30.01 - 50.00	Not Good
5	<30.00	Very Poor

## RESULTS AND DISCUSSION

Description of Environmental Awareness Character of Students at SDN Bukit Rawi 1 and SDN Percobaan Palangka Raya.

Table 3. Environmental awareness character of students at SDN Bukit Rawi 1 and SDN Percobaan

No	Scores obtained	Assessment Criteria	SDN Bukit Rawi 1	SDN Percobaan
			Frequency	
1	90.01 - 100.00	Very Good	21	6
2	70.01 - 90.00	Good	7	22
3	50.01 - 70.00	Fair	2	2
4	30.01 - 50.00	Not Good		
5	<30.00	Very Bad		
Total			30	30

Based on the table and diagram above, 70% (21 students) at SDN Bukit Rawi 1 have a "very good" environmental awareness character. Students with a "good" environmental awareness character make up 23% (7 students), while only 7% (2 students) have an environmental awareness character that is "fair."

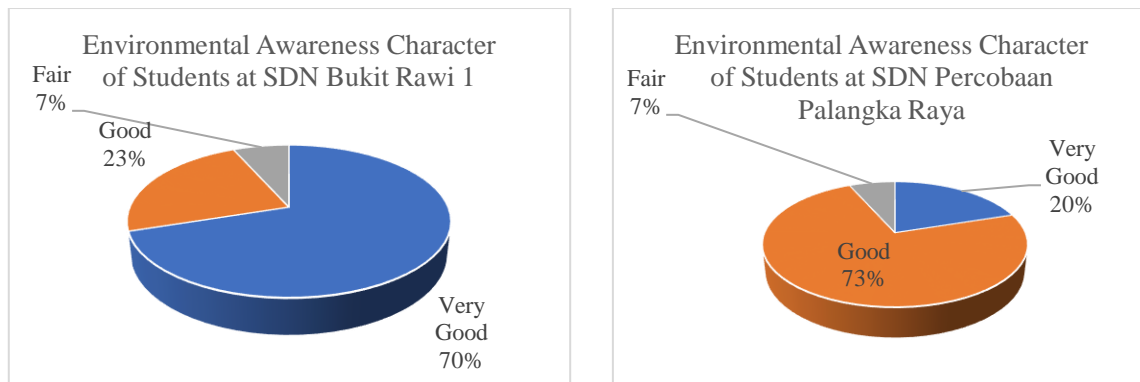


Figure 1. Environmental awareness character of students

In contrast, at SDN Percobaan Palangka Raya, most (73%) students have a "good" environmental awareness character. Furthermore, 20% of students possess a "very good" environmental awareness character, while only 7% have a "fair ecological awareness character".

Additionally, regarding the comparison of environmental awareness character among students at SDN Bukit Rawi 1 and SDN Percobaan Palangka Raya, each indicator is elaborated on in detail as follows:

Table 4. Environmental awareness character of students in caring for the environment

No	Statement	SDN Bukit Rawi 1		SDN Percobaan	
		Score	Criteria	Score	Criteria
1	Students enjoy doing class duty and invite friends to participate in class duty on schedule.	95.62	Very Good	88.67	Good
2	Students prefer to help their parents clean the yard/house compound rather than playing on their phones.	89.37	Good	74.67	Good
3	Students enjoy taking care of plants in their surroundings.	93.75	Very Good	88.00	Good
<b>Average Score</b>		<b>92.91</b>	<b>Very Good</b>	<b>83.78</b>	<b>Good</b>

Higher  
Lower

Based on the table above, there are three statements in the category of caring for the environment. In the first statement about class duty, SDN Bukit Rawi 1 students obtained an average score of 95.62, categorized as "very good." In contrast, SDN Percobaan Palangka Raya students scored less than 88.67, classified as "good." The same trend is observed in the second and third statements, where students at SDN Bukit Rawi 1 scored higher than those at SDN Percobaan Palangka Raya. This is consistent with the final scores in the criteria for students'

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character in caring for the environment, where students at SDN Bukit Rawi 1 have a higher score of 92.91 (Very Good) compared to students at SDN Percobaan, who scored 83.78 (Good).

Table 5. Environmental awareness character of students in reducing plastic use

No	Statement	SDN Bukit Rawi 1		SDN Percobaan	
		Score	Criteria	Score	Criteria
1	Students bring their water bottles to reduce waste from used bottles or cans.	91.87	Very Good	90.00	Good
2	Students prefer to bring packed meals from home rather than buy snacks wrapped in plastic.	90.00	Good	78.00	Good
3	Students believe that used plastic drink bottles can be recycled into various items.	84.37	Good	86.66	Good
<b>Average Score</b>		<b>88.75</b>	<b>Good</b>	<b>84.89</b>	<b>Good</b>

Higher  
 Lower

Three statements were provided to the respondents regarding the criteria for reducing plastic use. The survey results show that the average score of students at SDN Bukit Rawi 1 is 88.75 (good) compared to students at SDN Percobaan, who scored 84.89 (good).

Table 6. Environmental awareness character of students in waste management

No	Statement	SDN Bukit Rawi 1		SDN Percobaan	
		Score	Criteria	Skor	Score
1	Students feel proud when they throw trash in the trash can.	91.87	Very Good	86.67	Good
2	According to students, dry and wet waste should be placed in different bins.	89.37	Good	84.67	Good
3	Students do not imitate others who litter.	95.00	Very Good	88.00	Good
4	If the trash students throw falls outside the bin, they pick it up and put it back in the trash can.	93.12	Very Good	83.33	Good
5	Students reprimand friends who litter.	90.62	Very Good	82.67	Good
6	Students believe that throwing trash in the river will cause environmental pollution.	94.37	Very Good	95.33	Very Good
7	Students imitate their parents, who throw plastic waste in the designated bins.	87.50	Good	75.33	Good

No	Statement	SDN Bukit Rawi 1		SDN Percobaan	
		Score	Criteria	Skor	Score
8	Students' parents forbid them from littering.	93.12	Very Good	92.67	Very Good
9	Students' teachers forbid them from littering.	93.75	Very Good	96.00	Very Good
<b>Average Score</b>		<b>92.08</b>	<b>Very Good</b>	<b>87.19</b>	<b>Good</b>
	Higher				
	Lower				

Based on the table above, it can be seen that nine statements are used to measure students' environmental awareness character in the aspect of waste management. According to the survey results, SDN Bukit Rawi 1 students scored higher on eight statements than students at SDN Percobaan. Conversely, students at SDN Percobaan excelled in only 1 statement. Nevertheless, the average score for waste management at SDN Bukit Rawi 1 is higher, with a score of 92.08 (Very Good), compared to students at SDN Percobaan, who scored 87.19 (Good).

Table 7. Environmental awareness character of students in energy conservation

No	Statement	SDN Bukit Rawi 1		SDN Percobaan	
		Score	Criteria	Skor	Score
1	Students use the light only when necessary (in dark conditions).	92.50	Very Good	92.67	Very Good
2	Students always turn off the television as they finish watching.	92.50	Very Good	88.67	Good
3	Students should use water as sparingly as possible	87.50	Good	90.00	Good
4	Students prefer to walk or ride a bicycle to school rather than being driven by a motorcycle or car.	85.00	Good	64.00	Fair
5	Students use their phones only to complete school assignments.	85.62	Good	71.33	Good
<b>Average Score</b>		<b>88.62</b>	<b>Good</b>	<b>81.33</b>	<b>Good</b>
	Higher				
	Lower				

Based on the table above, it can be seen that there are five statements used to measure students' character in energy conservation. Among these five statements, students at SDN Bukit Rawi 1 scored higher on three: saving electricity when watching TV, conserving energy in motor vehicles, and saving energy in phone usage. On the other hand, students at SDN Percobaan scored higher on two statements: those related to saving electricity when using lights

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and conserving water. Nevertheless, on average, the score in the energy conservation category shows that students at SDN Bukit Rawi 1 have a higher score of 88.62 (Good) compared to students at SDN Percobaan, who scored 81.33 (Good).

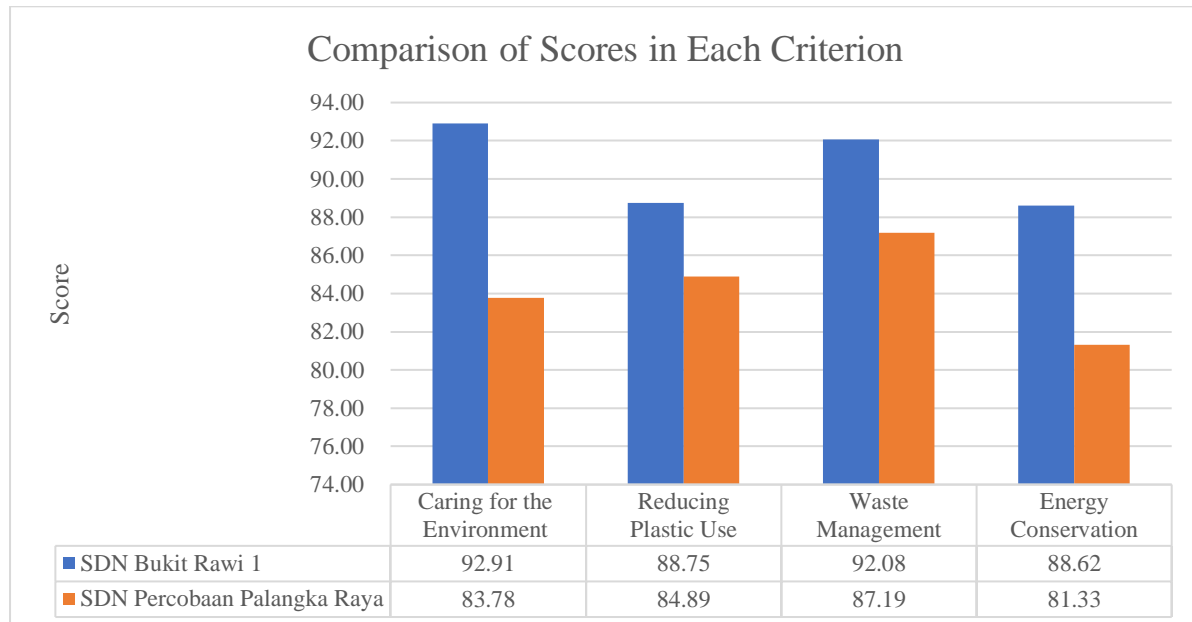


Figure 2. Comparison of environmental awareness character of students at SDN Bukit Rawi 1 and SDN Percobaan

Based on the chart above, it can be observed that the environmental awareness scores of students at SDN Bukit Rawi 1 are higher across all indicators compared to the scores of students at SDN Percobaan Palangka Raya. The overall average score for environmental awareness among students at SDN Bukit Rawi 1 is 90.59, categorized as Very Good. In contrast, the overall average score at SDN Percobaan Palangka Raya is 84.30, which is classified as Good. This data indicates that the environmental awareness character of elementary school children living in rural areas is higher than that of children living in urban areas. This aligns with Fitriyah's (2021) statement that rural children have higher naturalistic intelligence than urban children because they are closer to nature and a pristine environment. According to research by Supriyadi (2018), rural students are more frequently involved in environmental activities such as farming or conservation work due to their proximity to nature. On the other hand, urban students tend to have limited green spaces. They are more exposed to environmental issues through theoretical lessons or mass media, without much hands-on experience in nature.

Several factors, such as physical environment, access to nature, technology, and educational patterns, influence the comparison between environmental awareness among urban and rural children. Rural children tend to be more connected to nature because they live in more natural surroundings and often participate in activities like farming or caring for animals. This makes them more accustomed to environmental stewardship as part of their daily life, interacting

directly with nature (Irianto, 2020). A study by Saraswati et al. (2019) found that rural students care more about environmental problems that directly affect their community, such as water and soil quality, while urban students focus more on global issues, like global warming or air pollution.

Based on the data above, the environmental awareness character of students in the Kahayan River Basin falls into the very good and good categories. This means that children in the Kahayan River Basin have developed an awareness of caring for and managing the environment. This proves that education successfully develops students' environmental care character. Wang, Y., & Kwan, P. (2022), in their research, demonstrates that formal education focused on environmental issues can effectively shape environmentally caring attitudes in children. Active and participatory learning methods have proven more effective in building awareness and ecological concerns.

However, the environmental awareness character of elementary school students in the Kahayan River Basin has yet to impact environmental quality improvement significantly. To understand how long it takes for environmental education to create noticeable changes in ecological conditions, studies show that the process can be relatively slow and requires sustained effort over time (Ma, 2023). Research indicates that while environmental education can quickly increase knowledge and shift attitudes, translating this into long-term behavior change often takes years, particularly when trying to impact society. This is because deep-seated behaviors and societal norms need continuous reinforcement through education, awareness campaigns, and policy interventions. Another review of environmental education efforts highlights that the long-term impact is often gradual. Education fosters shifts in attitudes and beliefs, which can lead to behavior changes, but these changes are typically small in the short term. The most substantial changes are seen when educational initiatives are part of broader societal efforts, including community action and governmental policies (Gralton, 2004).

## CONCLUSION

Based on the research results, it can be concluded that students living in rural areas have a better environmental awareness than those living in urban areas in the Kahayan River Basin. This is evident from the majority (70%) of students at SDN Bukit Rawi 1 who live in rural areas and have an environmental awareness character categorized as "Very Good." On the other hand, the students at SDN Percobaan Palangka Raya, located in urban areas, show that the majority (73%) possess an environmental awareness character categorized as "Good," which is one level below the "Very Good" category. Furthermore, when analyzed through the four indicators of environmental awareness character, namely (1) environmental maintenance, (2) reduction of plastic use, (3) waste management, and (4) energy conservation, students living in rural areas also have higher scores compared to students in urban areas. This is reflected in the average scores obtained from these four categories, where students at SDN Bukit Rawi 1 have

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a higher average score of 90.59 (Very Good) compared to students at SDN Percobaan Palangka Raya, who have an average score of 84.30 (Good).

Based on the research results above, the author provides the following suggestions: 1) for future researchers to examine the factors influencing students' environmental awareness levels in the Kahayan River Basin in greater depth. 2) For schools in urban areas to enhance students' environmental awareness through various programs.

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