

MANUSCRIPT_BY_ARIF_SHOLAHUDDIN_et_al._FOR_JPII_2021.docx

by

Submission date: 18-Feb-2021 06:52PM (UTC+0700)

Submission ID: 1512213115

File name: MANUSCRIPT_BY_ARIF_SHOLAHUDDIN_et_al._FOR_JPII_2021.docx (99.34K)

Word count: 5163

Character count: 29639



1
JPPI 5 (2) (2016) 247-
255

Jurnal Pendidikan IPA Indonesia

<http://journal.unnes.ac.id/index.php/jpii>



Students' Caring Attitudes to Wetland Environment: A Case of Environmental Education in Banjar District Indonesia

Arif Sholahuddin^{1,a}, Rezky Fitriyana², Muhammad Fuad Sya'ban², Ikhwan Khairu Sadiqin³

¹Chemistry ¹³*Education Department Faculty of Education Universitas Lambung Mangkurat Banjarmasin Indonesia.*

²Science Education Department Faculty of Education, Universitas Lambung Mangkurat, Banjarmasin, Indonesia.

³Science Education Faculty of Education, Universitas Terbuka Banjarmasin, Indonesia.

^aarif.science.edu@ulm.ac.id

DOI:

Accepted: ... Approved: ... Published: ...

Schools in Indonesia have been conducted environmental education programs through both curriculum activities ¹⁹ schools' environmental programs. However, there was no sufficient data about the effectiveness of the programs. This study aims to identify the junior high school students' caring attitudes to the wetland environment (CATWE) as the education outcome. The Six Junior High Schools were chosen as probability sampling areas classified as urban, central, and rural areas schools of Banjar District with total samples of 354 students aged 12-14 years. The CATWE data were collected using a valid and reliable questionnaire. This study found that most of the students care for the wetland environment. There were no differences in the CATWE of the three school areas. These findings indicate that the school area and the level of "Adiwiyata" program were not the primary determining variable of environmental caring attitude education effectiveness. The highest score of the CATWE indicator was responsible; meanwhile, the lowest was hard work. Even though all the indicators have reached a care category. It is necessary to thoroughly investigate the effectiveness of the school environmental program "Adiwiyata," outside classroom activity, and family role in environmental education.

Keywords: environmental education, caring attitude, wetlands, school area, sustainability

⁸
© 2016 Science Education Study Program FMIPA UNNES Semarang

INTRODUCTION

Societies worldwide have experienced ecosystem damages such as pollution, global warming, and climate change as an impact of economic and industrial activities. It relates to the lack of human awareness of the environment and attitudes to sustainable development (Rachmatullah et al., 2020), including the wetland environment.

Banjar District is one of the Indonesian areas that has a sizeable low-lying area or a wetland area. Wetland is inundated or saturated area by surface or groundwater at a frequency and duration of sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. It comprises a river environment, a swamp environment, a freshwater environment, a brackish water environment, or salt, including areas of marine water the depth of which at low tide does not exceed six meters that are flooded throughout the year (Halabisky et al., 2016; Sya'ban et al., 2017).

This ecosystem has been faced the degradation threat of both its quantity and quality in many countries, including Indonesia (Adeleke, 2019; Fianko & Dodd, 2018; Syam'ani et al., 2018). In China, around 91% of wetlands had been converted for agricultural development by 2005, resulting in an average loss of 27% wetland area every ten years (Song et al., 2014). Degradation also occurs significantly in coastal wetlands (Cui et al., 2018).

Wetlands provide various necessities for human life such as food, spawning and nursery, energy, water, and climate regulation. Thus, the wetlands' degradation is threatening ecological safety and sustainable regional development (Costanza et al., 2014). It is necessary to raise awareness of everyone to protect wetlands sustainably.

Accordingly, it demands the role of education, which aims to enable individuals to assimilate the values, the basic concepts, and the practical knowledge which will help them to an awareness of environmental problems, build behavior accordingly and thus give a useful contribution to safeguard the environment (Aarnio-Linnanvuori, 2019; Edsall & Broich, 2020; García et al., 2019; Nkoana, 2019). Refers to the Oxford Dictionary, caring relates to adjective words of concerned, attentive, thoughtful, solicitous, responsible, and contribute. In this study, a caring attitude refers to human attitudes towards the environment in the form of a tendency to maintain and preserve it. The environmental caring attitude consists of hard work, respect for health and cleanliness, wise, and responsibilities indicators (Adawiah, 2018; Fitriyana & Sholahuddin, 2019; Gericke et al., 2019). This

attitude is part of the individual characters that will lead to providing pro-environmental behavior.

Development of characters, including students' caring attitude to the environment were strengthened by the Indonesian government by issuing Presidential Regulation No. 87 of 2017. To form the expected character, it must include the three dimensions, including moral knowing, moral feelings such as self-perception, empathy, love, kindness, self-control, and moral action (Lickona, 1991). Accordingly, the embedding character must begin with knowledge about a character. Knowledge about what is the caring environmental attitude will cause someone to have this attitude. Therefore, he/she needs to learn content knowledge closest to the students to increase their understanding. Caring attitudes to the environment that was formed will be manifested in the form of behavior. It is repeated until internalized and characterized to be a character. In other words, attitude is someone's tendency to do real action. In the long term, it will be expected to reduce environmental damage in the future (Boca & Saraçlı, 2019; Dimante et al., 2016).

Environmental education in Indonesian schools has been carried out in an integrated form with subject matters (Tim Adiwiyata Tingkat Nasional/TATN, 2011), especially natural sciences and social sciences. Besides, several schools have been conducting practical activities to instill a caring culture for all school residents, such as the green school or "adiwiyata" school program since 2006. Adiwiyata school program was aimed to make school residents responsible for protecting and managing the environment through good school governance in supporting sustainable development. Four aspects have to exist in the "adiwiyata" school program were environmentally sound policies, implementation of an environment-based curriculum, participatory environment based activities, and management of environmentally friendly supporting facilities (TATN, 2011). However, how are the school environmental education programs effective to improve the caring attitude to the environment? There is a lack of evaluation data provided for very heterogeneous regions like Indonesia. Only some research has been carried out in certain cities to students with different education levels to investigate their attitudes towards common environmental problems (Iswari & Utomo, 2017; Riastini et al., 2019; Sidauruk et al., 2013) even though more data are needed in order to plan and improve environmental education correctly especially on the wetland area.

The integration of characters with subject matters is believed as an effective way to build students' characters through education (Dimante et

al., 2016; Vesely et al., 2020). In this case, the teacher plays a vital role in pedagogical management to build students' character, including a caring attitude to the environment (Aarnio-Linnanvuori, 2019). The new challenge for the teacher is to utilize information technology as an effective way to improve students' environment awareness (Jorgenson et al., 2019).

The ultimate goal of environmental education is to equip knowledge and shape the students' positive attitudes and behavior toward the environment. This goal certainly requires a long time and continuous habituation so that their caring attitudes will be characterized as expected behavior (Bergman, 2015; Isdaryanti et al., 2018; Lickona, 1991). Previous research has shown that contribution of the knowledge is smaller than the real environmental problem-solving activities outside the classroom, such as exploring the environment around students, exploring the environmental values of local wisdom, and using the environmental social issues (Alon & Tal, 2017; Boca & Saraçlı, 2019; Ntanos et al., 2018; Tekakpınar & Tezer 2019).

Environmental education in Indonesia has the right strategy by combining knowledge and habituation of environmental behavior in daily school activities. Unfortunately, many teachers found some difficulties in implementing learning activities outside the classroom by involving the community related to the environment. It is due to the tightness of the curriculum, time, and financial availability. However, how the impact of environmental education on students' attitudes and behaviors toward the environment, only a little research reported and showed inconsistent data. The other showed that external factors such as the school environment significantly affect students' environmental care attitudes (Iswari & Utomo, 2017), while the other indicated that these factors did not significantly affect (Meilinda et al., 2017; Riastini et al., 2019). It means that the achievement of environmental education has left the problems.

The inclusion of locally relevant topics is considered an essential underpinning of effective environmental education and requires flexible curricula for programs that span large geographic areas with their diversity. Further, integrating environmental education in the classroom to environmental stewardship projects has increased students' eco-impact (Bergman, 2015).

The previous studies described above (Iswari & Utomo, 2017; Meilinda et al., 2017; Riastini et al., 2019; Sidauruk et al., 2013) have investigated students' caring attitudes towards the environment in the context of the general environment. This current study examined students' caring attitude to the wetland environment (CATWE) of Junior High School Students of Banjar District South Kalimantan, Indonesia. The CATWE in this study represents

one's attitude to the wetland environment in the form of attitudes towards certain behaviors related to the environment and actions taken to preserve the environment. Junior high schools in Banjar District are spread from remote or rural areas to urban areas. Differences in areas may provide the differences in habits, developed-values, information accessibility and even the people's environmental awareness (Ziadat, 2010). This study aimed to (1) analyze the students' CATWE categories and its differences between junior high school students in different areas (urban, central, and rural areas), and (2) describe Students' CATWE based on its indicator. The current study's finding is essential information to design and evaluate school environmental education to keep the sustainability of the wetland environment.

METHODS

This study implemented an explanatory sequential mixed methods design (Creswell, 2012) to obtain information about the CATWE of junior high school (JHS) students of Banjar District Indonesia. The research step is begun by collecting quantitative data using questionnaires and then collecting qualitative data to explain or elaborate on the quantitative results.

The population was 2,741 grade VII students from the 64 State Junior High Schools. The six representative schools samples were drawn using the area of probability sampling. The school samples consist of Martapura Public Middle School 1, and Martapura Public Middle School 2 represent urban area schools; Gambut 1 Public Middle School and Astambul 1 Public Middle School represents middle area schools; and Aranio Public Middle School 1, and Sungai Tabuk State Middle School 1 represents suburban area schools. Each school area consists of 118 students, with a total sample of 354 aged between 12 to 13 years.

The questionnaire for measuring the CATWE consists of 37 items of the statement with modified Likert's type of four alternative answers: strongly agree, agree, less agree, and disagree. The CATWE indicators include four indicators. *Hard work indicators*: Working hard to protect river ecosystems, working hard to preserve swamp ecosystems, fighting spirit to save nature, and working together to solve wetland environmental problems. *Respect to health and cleanliness indicators*. Disposing of garbage in its place, cleaning the classroom, maintaining and controlling of household waste, closing water reservoirs and maintaining drinking water wells. *Wise indicators*. Reducing air pollution and water pollution, saving water usage, turning off lights when it is not in use, and felling select trees. *Responsibilities indicators*. Protecting and caring for animals, protecting and caring for plants, protecting natural resources and maintaining ecosystem balance (Fitriana & Sholahuddin, 2019; Gericke et al., 2019).

The questionnaire was validated by five experts and judged as valid with a content validity ratio (CVR) 1 (Cohen & Swerdlik, 2013), inter-rater reliability index of 100% (Borich, 2003), and Cronbach's alpha of 0.72. Also, interviews were conducted voluntarily to six student samples to verify and elaborate students' opinions about their caring attitudes to the wetland environment within twenty minutes per student. The interviews were then transcribed and analyzed to be triangulated with the quantitative data.

Based on the distribution of questionnaire scores, the criteria for students' environmental caring attitudes were categorized as follows: score ≥ 112 is caring, 75 - 111 is caring enough, and 37-74 is careless. While each indicator's score categories were categorized as follows: score ≥ 355 is caring, 237-354 is caring enough, and 118-236 is careless. ANOVA test was also conducted to know the difference in students' environmental caring attitude to the wetland environment between junior high school students from different school areas using SPSS version 23.

18 RESULTS AND DISCUSSION

Table 1 shows the distribution of a caring attitude to the wetland environment by the school areas of Banjar District JHS's students. The highest score of the CATWE was achieved by JHS students in central area schools, while JHS's students in an urban and rural area have the same caring attitude level.

Table 1. Environmental Caring Attitude of JHS's Students to the Wetland Environment by the school areas

School Areas	Percentage by Category (%)		
	Care	Care enough	Careless
Urban	75.4	24.6	0
The central	82.0	18.0	0
The rural	75.4	24.6	0
Average	77.6	22.4	0

Based on Table 1, it can be said that most of the students in all schools observed care for the wetland environment, and none of them did not interest in the wetland environment.

Table 2 shows the CATWE by indicators of JHS students in Banjar District.

Table 2. The Caring Attitude to Wetland Environmental of JHS' Students by Indicators

Indicators	School Area					
	Urban		Central		Rural	
	Score	Category	Score	Category	Score	Category
Hard work	373.3	Care	370.8	Care	375.5	Care
Respect for Health and Cleanliness	381.8	Care	395.5	Care	390.0	Care
Wise	383.6	Care	376.5	Care	369.5	Care
Responsible	401.8	Care	405.0	Care	401.8	Care
Average	385.1	Care	387.0	Care	384.2	Care

According to Table 2, the lowest score of the CATWE indicator is hard work, while the highest is the responsible indicator. However, students in all the school areas have CATWE in the care category on all indicators (hard work, respect for health and cleanliness, wise and responsible).

All the data were tested their homogeneity by using *Lavene Test* and provided data as presented in Table 3.

14 Table 3. Test of Data Homogeneous

Levene Statistic	df1	df2	Sig.
1.782	2	351	.170

According to the Lavene test result above, all the data were homogeneous.

12 Besides, data also were tested their normality of distribution by using *Kolmogorov-Smirnov* and *Shapiro-Wilk Test* as presented in Table 4.

11 Tabel 4. Test of Data Normality

Groups	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Urban	.077	118	.085	.984	118	.169

The score of	Central	.065	118	.200*	.980	118	.070
Caring attitude	Rural	.074	118	.162	.981	118	.085

17

Kolmogorov-Smirnov and the Shapiro-Wilk test above indicated that p-value (sig.) > 0.05. It means data were normally distributed.

The homogeneous and normal data were then tested using the One-Way ANOVA Test using SPSS version 23 as presented in Table 5.

10

Table 5. ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	81.870	2	40.935		
Within Groups	54774.992	351	156.054	.262	.769
Total	54856.862	353			

According to the ANOVA test above, it was obtained a significance value of 0.769 > 0.05. It means that there was no difference between the students' CATWE of different school areas.

The Students' CATWE: Categories and its differences between school areas

Table 1 showed that most students, 77.6%, care about, and none of them in all the school areas did not have an interest in a wetland environment. Students in all the school areas have the same CATWE. This fact illustrates the success of environmental caring character education as the cumulative impact of curriculum implementation in elementary and junior high school levels. Because attitude develops through receiving, responding, valuing, organization, characterization, so it requires continuous habituation in an extended period. Students' knowledge through learning has supported their caring attitude towards the wetland environment because there is a positive interaction between knowledge and attitude. However, knowledge and attitudes do not always necessarily result in the expected behavior (Pauw & Petegem, 2013; Marcos-Merino et al., 2020). Habits, examples, and sustainable motivation in the school environment, family, and community collectively will lead to positive behavior towards the wetland environment. Indonesia's national curriculum has undergone reform such as strengthening and integrating environmental education in subjects (TATN, 2011). Based on the subject content scope, natural science and social science subjects discuss mostly the environment compared to the others. Even the learning approach in elementary schools uses an integrated webbed by utilizing the environment as a learning resource.

The finding also proved that formal education over a long period from elementary to the first year of secondary school played an important role in changing the students' CATWE. Although students have achieved good attitudes as the impact of national curriculum implementation, they still need to strengthen students' CATWE to keep environmental sustainability, especially for 22.4 % of students late. There are educational

factors that influence environmental education success, including institution policy, curriculum, learning method, academic culture (Susongko & Afrizal, 2018; Ikhsan et al., 2019), individual motivation factors (Michelsen & Fisher, 2017) even though knowledge has a fragile relationship on students' environmental behavior (Otto & Pensini, 2017).

This research found that the school area did not influence the students' CATWE (Table 4). This finding in line with Sidauruk et al. (2013) that the students' environmental care behaviors of the different areas (urban, central, rural) in Medan city Indonesia showed an equally good category. There are no differences in CATWE of all school areas showed that (1) Environmental education, including wetland environmental knowledge, is relatively good in all the schools' area. (2) Understanding is the key to strengthening attitudes, including CATWE (Rabgay, 2018). Therefore, environmental education at the lower education level will provide a further provision and foundation for strengthening caring attitudes. Students' understanding might influence the good CATWE, and it relies on the accessibility of supporting information technology. Now, students can access information related to the environment at any time and place via the internet or social media. (3) It is hypothesized that other schools' environmental programs (e.g., green school and healthy school) have been carried out well and significantly influenced students' CATWE. Therefore, school area was not a determining variable for students to build their CATWE.

Based on the researcher's observations of the three participating schools with different areas, they have implemented a school-based environmental program, "Adiwiyata," but their difference is only at the program level. In urban region area, JHS 1 Martapura has been conducted at "mandiri level" (autonomous level) since 2015;

meanwhile, JHS 2 Martapura has been conducted at the national level since 2016. Central area schools JHS 1 Gambut and 1 Astambul have conducted national-level programs since 2017 and 2016, respectively. Rural area school JHS 1 Aranio has been conducted at the provincial level since 2018 while JHS 1 Sungai Tabuk has been conducted a district-level program since 2017. Even though the Adiwiyata level programs and schools' areas, differ between them, they did not show a significant difference in students' CATWE. It means that the level of Adiwiyata and the school area were not the main factor affecting the level of students' CATWE.

The finding above is in line with previous studies' finding that external factors such as the school environment were not significantly affecting students' environmental care attitude (Meilinda et al., 2017; Riastini et al., 2019). Internal factors such as self-motivation are the main reason students want to care about the environment (Aliman et al., 2019). Nevertheless, a different finding was reported by another researcher that students of schools that have implemented the Adiwiyata program have a higher level of environmental knowledge, affective and skills (Iswari & Utomo, 2017).

Adiwiyata program level should indicate the schools' level of the environmental culture growing successively from the district, provincial, national, and autonomous levels (TATN, 2011). Different Adiwiyata program levels may also indicate environmental culture and the completeness level of supporting facilities for daily activities as environmentally friendly schools. The school facilities include providing trash bins based on the type of waste, greenhouse, hydroponics, composting, drainage, mushroom houses, medicinal plants, cleaning service activities every week, et cetera. Another most prominent school facility is the ownership of the school environmental education software-updated. By assuming that all the affecting factors were equally good between the participating schools, they also have equally good CATWE (Rabgay, 2018). In this case, the program level should be a differentiator for CATWE because of the different levels of Adiwiyata due to different schools' environmental cultures. This finding provides a contradictory fact with the aim of the Adiwiyata program.

Accordingly, it is necessary to conduct further research to investigate the extent to which the quality and intensity of the CATWE through the different levels of the Adiwiyata program. It also needs to be elaborated on other factors that might impact the CATWE as the synergy of environmental education with various school activities and activities outside the school. Students need sufficient environmental knowledge and sustainability and motivation from the closest people, such as family and school residents, to

positively affect the environment (Ntanos et al., 2018; Vesely et al., 2020). Even social and cultural factors and values that students believe can influence their attitudes and behavior towards the environment (Chisholm et al., 2016; Rachmatullah et al., 2020) that someone with a lower socioeconomic level tends to lead the egocentric value of the environment. It is still a severe environmental problem in Indonesia.

Students' CATWE based on Its Indicators

Based on Table 2 from the four indicators (hard work, respect to cleanliness and health, responsibility, wise), the lowest achievement of students' wetland environment caring attitude is a hard work indicator while the highest is responsibility. However, overall all students of JHS in the different areas have reached the CATWE in the caring category. The examples of students' caring attitude according to the interview was described below.

Hard work

Hard work relates to maintain and preserve the environment to reach the lowest achievement of the students' CATWE. Even though, in general, this attitude has reached the caring category. The following were the attitudes of hard work according to students when they were interviewed.

Researcher: Do you feel worried if the waste from our houses is directly streamed into the river?

Students: Yes. Because it may pollute the river ecosystem. All the six interviewed students answered "No."

Researcher: Do you think that the plywood factory's liquid waste can be streamed into the river directly?

Students: No. Because it contains hazardous chemicals from plywood processing so it will poison our body. All the six interviewed students answered "No."

Researcher: Do you think that people who live in "lanting houses" (floating houses) can throw the trash directly into the river?

Students: No. Because it will pollute the river (a student argues that because inorganic waste is not easily decomposed).

All the six interviewed students answered "No".

Researcher: Do you care when you see people dump the sasirangan liquid waste into rivers?

Students: No. Because it does not cause odor or floating garbage in the river.

Other students: Yes, I do because It may cause a bit of pollution.

In this case, three students who were interviewed answered care, while the others responded uncaringly.

Almost all the students also realized that residual waste from industrial activities in South Kalimantan must not be disposed into rivers,

whether waste from smalls or large scales industries, because they were dangerous for living things. It certainly relates to the environmental knowledge they have learned through the subject matter. Adawiyah supported this finding (2018) that JHS students' attitude towards the river was categorized as good, manifested by always trying to protect the river ecosystem. Even though, the role of family and people around them were less in instilling the environmental caring attitude. Regarding the disposal of liquid waste from "sasirangan" (the traditional cloth of Banjarese) family industry, which was directly steamed into the river, the students were still doubtful whether this would pollute the river. It is suspected that students have not seen how the process happens in the Sasirangan home industry. A similar situation was reported by Mratihayani & Susilowati (2013) that most people considered waste disposal from making batik (traditional cloth of Javanese) in the Pekalongan Central Java river was considered harmless.

Responsibility

In this current study, responsibility is the indicator with the highest score from the other four indicators. Students of the central area schools have the highest score; meanwhile, the urban and rural area has the same score. Responsibility indicator consists of four aspects: protecting and caring for animals, protecting and caring for plants, protecting natural resources, and maintaining the equilibrium of the ecosystem. Below is one part of the interviews.

Researcher: Do you think that the conservation of the Bekantans is essential?

Students: Yes. Because in order to preserve and prevent them from extinction as well as keep our ecosystem equilibrium.

Researcher: Do you think that the mangrove plants affect our environment?

Students: Yes. It can avoid abrasion and become a habitat as well as food for animals.

All the six interviewed students stated that it is needed to preserve both proboscis and their habitats.

In animal caring, students gave a positive response to the preservation of the endemic animal of South Kalimantan, "Bekantan" (proboscis monkey). The proboscis is an endemic animal of South Kalimantan, whose population is currently threatened because its original habitat has been damaged. The students were well aware that "Bekantan" is almost extinct. However, many students claimed that they had never seen "Bekantan" directly. "Bekantan" indeed requires rehabilitation, especially for proboscis monkeys that were illegally maintained by people. According to Fuad et al. (2019), the facts caused by the students' understanding of resources and

their impact on their lives increase their motivation to keep them.

Respects to cleanliness and health

Respects to cleanliness and health indicators consist of five aspects: disposing of the garbage in its place, maintaining clean classrooms, closing water reservoirs, maintaining drinking water wells, and handling household waste. Based on Table 2, it can be seen that students' CATWE on the indicators of respect for cleanliness and health was categorized as care.

Researcher: If you finish eating and drinking, do you always throw garbage into the trash can?

Students: Yes. Because it is in order to keep our environment clean and healthy.

Researcher: Do you process and separate vegetable waste left over from the household to be a fertilizer?

Students: No. I have no experience in the microbiological process of organic waste.

All the interviewed students answered that they have no microbiological process experience, but two of them often heap organic waste directly into the soil around the house so that the soil becomes fertile. The household's leftover vegetables or organic waste can be made a compost material. The composting can be accelerated by adding an effective microorganism EM4 activator.

Wise

The wise indicator consists of five aspects: reducing air pollution, reducing water pollution, saving water usage, turning off lights when not in use, and cutting down trees selectively. The highest score was obtained in the urban area, followed by central and rural areas (Table 2).

Researcher: Do you think that an excellent way to open the new land in peatlands area is by burning the Galam forest?

Students: No. Because burning the forest will cause smog and air pollution.

Researcher: If there is an action to refuse forest burning on a large scale to open new land, will you support the action?

Students: Yes, I will.

All the six students answered "Yes," but they are still in doubt to be involved if they take part in the demonstration.

One of the wise attitudes expressed by students relates to the traditional opening farming field by burning the grass and "galam" (*Melaleuca cajuputi* Roxb) forest. It is a cheap and economical, but the habituation should be stopped because it may cause peat forest fire and air pollution. South Kalimantan has the lowest air quality index in Kalimantan by 91.41 (Sulaeman, et al. 2020), even though it still in the good quality index. Students also agree to use "jukung" a traditional boat for reasonable distance transportation in the water area, because this transportation does not use fuel as energy sources so that it will reduce air

pollution. Riyandeni & Kusumantoro (2013) also found that 82.5% of respondents agree to design public transportation on the river. This finding is in line with Dimante et al. (2016) that 68.1% of students who have studied natural science are wiser in protecting the environment.

Based on the discussion above, in general, students' CATWE are in a good category and must be improved continuously in the future. Strengthening CATWE must also be done through activities outside the classroom by involving the communities because this activity provides a more significant role in strengthening students' knowledge, attitudes, and behavior towards the environment and even their ability to solve the problems (Aliman et al., 2019; Barbaro & Pickett, 2016; Otto & Pensini, 2017).

The learning experience outside the school becomes a memorable experience; therefore, it motivates students to involve deeply in learning activities because learning is usually conducted in limited classrooms (Amahmid et al., 2019; Ntanos et al., 2018; Olgun, 2018; Tekakpınar & Tezer 2019). Students can practice their knowledge directly, such as planting trees, cleaning up trash, and putting it into the trash bin according to hazardous, inorganic, and organic categories.

It needs to drive the collaboration of many resources in supporting environmental education, including the curriculum, environment, and society (Sulaeman et al. 2020; Asri et al., 2020). Alkaher & Gan (2020) suggested that schools have to engage their several stakeholders as school-state-community partnerships to cultivate the students' and community's environmental citizenship, school-business partnerships to improve the physical infrastructure, and assisted the promotion of education for sustainability in the school.

CONCLUSION

Environment education in Indonesia is conducted in integration especially with the subject matter of science and social studies. Schools are also encouraged by the government to conduct environmental-based school programs "Adiwiyata" in grade levels from the district, province, national to autonomous level. This environmental education aims to instill an environmental caring attitude early. This study found that (1) the most of JHS students of Banjar District have a good caring attitude towards the wetland environment. There are no differences in students' CATWE between three different school areas (urban, central, and rural areas). These results indicate that the school area is not the primary determining variable of an environment caring attitude. It might be caused by good accessibility of the environmental knowledge in this digital era and supporting school environment programs. (2) Responsibility is the indicator with the highest score of the CATWE; meanwhile, the lowest is the hard work indicator. Although, overall indicators have reached an average score in

the care category, including respect for health and cleanliness and wise. It needs to be evaluated why the level of the "Adiwiyata" school environmental program was not able to distinguish the students' CATWE. Further research may investigate the effectiveness factors of the school environmental program "Adiwiyata", outside classroom activity, and family role in environmental education. Finally, it is necessary to develop environmental education patterns that are integrated classroom activity and real experiences outside the classroom to strengthen the formation of caring attitudes and behaviors towards the wetland environment.

ORIGINALITY REPORT

7%

SIMILARITY INDEX

4%

INTERNET SOURCES

4%

PUBLICATIONS

4%

STUDENT PAPERS

PRIMARY SOURCES

1

Submitted to Universitas Muhammadiyah
Surakarta

Student Paper

1%

2

www.lowersaucontownship.org

Internet Source

1%

3

coek.info

Internet Source

1%

4

Bambang Partono, Ravik Karsidi, Munawir
Yusuf, Soetarno Joyoatmojo, Ryzal Perdana.
"INTEGRATION OF THE ADIWIYATA SCHOOL
PROGRAM TO REALIZE A SUSTAINABLE
DEVELOPMENT GOALS (SDGs) IN
SURAKARTA", Humanities & Social Sciences
Reviews, 2020

Publication

<1%

5

Submitted to University of Wollongong

Student Paper

<1%

6

iiste.org

Internet Source

<1%

7	N. Nurwidodo. "The Role of Eco-School Program (Adiwiyata) towards Environmental Literacy of High School Students", European Journal of Educational Research, 2020 Publication	<1 %
8	media.neliti.com Internet Source	<1 %
9	Iris Alkaher, Dafna Gan. "The role of school partnerships in promoting education for sustainability and social capital", The Journal of Environmental Education, 2020 Publication	<1 %
10	baadalsg.inflibnet.ac.in Internet Source	<1 %
11	www.tandfonline.com Internet Source	<1 %
12	www.thieme-connect.de Internet Source	<1 %
13	A Sholahuddin, Syahmani, E Susilowati. "Restructuring the pedagogical competence training involving lesson study", Journal of Physics: Conference Series, 2021 Publication	<1 %
14	jtls.shirazu.ac.ir Internet Source	<1 %

15 Nur Handayani, Hasan Hariri, Sowiyah Sowiyah, Ridwan Ridwan. "The Shaping of the Student Character Caring for the School Environment through the Green School Movement in SMP Negeri 2 Adiluwih", Journal of Physics: Conference Series, 2020 <1 %

Publication

16 Guilherme Asai, Andre Kuroiva, Manuella Lucca Terra. "Brazilian model estimation for SARS-CoV-2 peak contagion (BMESPC): first and second wave", Cold Spring Harbor Laboratory, 2021 <1 %

Publication

17 jurnal.unai.edu <1 %

Internet Source

18 ijllalw.org <1 %

Internet Source

19 www.ijicc.net <1 %

Internet Source

Exclude quotes On

Exclude matches Off

Exclude bibliography On