STUDENTS’ CARING ATTITUDES TO WETLAND ENVIRONMENT: A CASE OF ENVIRONMENTAL EDUCATION IN BANJAR DISTRICT INDONESIA

A. Sholahuddin*, R. Fitriyana, M. F. Sya’ban, I. K. Sadiqin

1Chemistry Education Department, Faculty of Education, Universitas Lambung Mangkurat Banjarmasin Indonesia
2Science Education Department, Faculty of Education, Universitas Lambung Mangkurat, Banjarmasin, Indonesia
3Science Education Department, Faculty of Education, Universitas Terbuka Banjarmasin, Indonesia

DOI: 10.15294/jpii.v10i1.27838

Accepted: December 18th 2020. Approved: March 25th 2021. Published: March 31st 2021

ABSTRACT

Schools in Indonesia have been conducted environmental education programs through both curriculum activities and 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 the “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.

© 2021 Science Education Study Program FMIPA UNNES Semarang

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

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 (Fianko & Dodid, 2018; Syam’ani et al., 2018; Adeleke, 2019). 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; García et al., 2019; Edsand & Broich, 2020; Nkoana, 2020). Refers to the Oxford Dictionary, caring relates to adjective words of concerned, attentive, thoughtful, solicitous, responsible, and considerate. 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.

The development of characters, including students’ caring attitude to the environment, was 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 (Dimante et al., 2016; Boca & Saraclı, 2019).

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 the “Adiwiyata” school program since 2006. The “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 (Sidauruk et al., 2013; Iswari & Utomo, 2017; Riastini et al., 2019) even though more data are needed 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 (Lickona, 1991; Bergman, 2015; Isdaryanti et al., 2018; Yustina et al., 2020). Previous research has shown that contribution of the knowledge is smaller than the real environmental...
working hard to protect rivers, ecosystems, fighting spirit to save nature, and working together to solve wetland environmental problems. Concerning health and cleanliness indicators. Disposing of garbage in its place, cleaning the classroom, maintaining, and controlling the 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).

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 school 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 rural 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, fighting spirit to save nature, and working together to solve wetland environmental problems. Concerning health and cleanliness indicators. Disposing of garbage in its place, cleaning the classroom, maintaining, and controlling the 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.

**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.

**Table 1. Environmental Caring Attitude of JHS’s Students to the Wetland Environment by the School Areas**

<table>
<thead>
<tr>
<th>School Areas</th>
<th>Percentage by Category (%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Care</td>
<td>Care Enough</td>
</tr>
<tr>
<td>Urban</td>
<td>75.4</td>
<td>24.6</td>
</tr>
<tr>
<td>The central</td>
<td>82.0</td>
<td>18.0</td>
</tr>
<tr>
<td>The rural</td>
<td>75.4</td>
<td>24.6</td>
</tr>
<tr>
<td>Average</td>
<td>77.6</td>
<td>22.4</td>
</tr>
</tbody>
</table>

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. 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. The Caring Attitude to Wetland Environmental of JHS’ Students by Indicators**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>School Area</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban</td>
<td>Central</td>
<td>Rural</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Score</td>
<td>Category</td>
<td>Score</td>
<td>Category</td>
</tr>
<tr>
<td>Hard work</td>
<td>373.3</td>
<td>Care</td>
<td>370.8</td>
<td>Care</td>
</tr>
<tr>
<td>Respect for Health and Cleanliness</td>
<td>381.8</td>
<td>Care</td>
<td>395.5</td>
<td>Care</td>
</tr>
<tr>
<td>Wise</td>
<td>383.6</td>
<td>Care</td>
<td>376.5</td>
<td>Care</td>
</tr>
<tr>
<td>Responsible</td>
<td>401.8</td>
<td>Care</td>
<td>405.0</td>
<td>Care</td>
</tr>
<tr>
<td>Average</td>
<td>385.1</td>
<td>Care</td>
<td>387.0</td>
<td>Care</td>
</tr>
</tbody>
</table>

Table 2 shows the CATWE by indicators of JHS students in Banjar District. 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 Lave
ne Test and provided data as presented in Table 3.

**Table 3. Test of Data Homogeneous**

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.782</td>
<td>2</td>
<td>351</td>
<td>.170</td>
</tr>
</tbody>
</table>

According to the Levene test result above, all the data were homogeneous. Besides, data also were tested their normality of distribution by using Kolmogorov-Smirnov and Shapiro-Wilk Test as presented in Table 4.

**Table 4. Test of Data Normality**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>The score of Caring attitudes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>.077</td>
<td>118</td>
</tr>
<tr>
<td>Central</td>
<td>.065</td>
<td>118</td>
</tr>
<tr>
<td>Rural</td>
<td>.074</td>
<td>118</td>
</tr>
</tbody>
</table>
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.

Table 5. ANOVA Test

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>81.870</td>
<td>2</td>
<td>40.935</td>
<td>.262</td>
<td>.769</td>
</tr>
<tr>
<td>Within Groups</td>
<td>54774.992</td>
<td>351</td>
<td>156.054</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54856.862</td>
<td>353</td>
<td></td>
<td>.262</td>
<td>.769</td>
</tr>
</tbody>
</table>

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.

Table 1 shows 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 habitation 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 the 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 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 is 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 for students to care about the environment (Aliman et al., 2019). Nevertheless, a different finding was reported by another researcher that students from 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, etc. 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.

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 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.

**Researcher:** Do you think that 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.

**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).

**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 in-
dustries 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. Considering 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 Mratihatani and Susilowati (2013) that most people considered waste disposal from making batik (traditional cloth of Javanese) in the Pekalongan Central Java river was considered harmless.

In this current study, responsibility is the indicator with the highest score from the other four indicators. Students from 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 to preserve and prevent them from extinction as well as keep our ecosystem equilibrium.

Researcher: Do you think that 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 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 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 into compost material. The composting can be accelerated by adding an effective microorganism EM4 activator.

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 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 and 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 (Barbaro & Pickett, 2016; Otto & Pensini, 2017; Aliman et al., 2019).

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 (Ntanos et al., 2018; Olgun, 2018; Amahmid et al., 2019; 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 (Asri et al., 2020; Sulaeman et al. 2020). Alkaher and Gan (2020) suggested that schools must 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 environmentally 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 average scores 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.

REFERENCES


of Coastal Residents of Palopo City, Indonesia. 
*Jurnal Pendidikan IPA Indonesia*, 9(3), 396-407.


