

# Differences in Environmental Education at the Elementary School Level in Japan and Indonesia

Lestari Errica<sup>1\*</sup>, Budi Mulyadi<sup>2</sup>

<sup>1</sup>Faculty of Humanities, Diponegoro University, Indonesia

<sup>2</sup>Faculty of Humanities, Diponegoro University, Indonesia

**Abstract.** Education is one of the important aspects for human beings. Through education, humans can learn to think critically, be moral, and be civilized. Schools are a vital place in carrying out education and each country has a different way or curriculum that is adapted to the existing culture to educate the younger generation. This difference also occurs in Environmental Education. This study focuses on the differences in environmental education at the elementary school level in Japan and Indonesia. Japan has known as a country with amazing technology, not only that Japan is also known for the cleanliness of its country. That is because Japan has a discipline and high awareness of cleanliness. The disciplines are taught early age through a formal or informal educational institution and work together with teaching staff. Instilling a sense of love for the environment from an early age will be embedded and become a good habit until adulthood which will also have an impact on the surrounding environment in the future. Therefore, Indonesia can learn from Japan to improve the existing Environmental Education. This research uses the qualitative analysis method and the data is collected by library method, then the data is analyzed by descriptive method.

## 1 Introduction

Since a long time ago, humans and nature are lived side to side and depend on each other, so these two things cannot be separated. Humans need nature to keep alive by using natural resources, and nature needs humans to care for and develop nature so it remains sustainable from time to time. Judging from this symbiotic relationship of mutualism, concluded that nature and its content have an important role in the continuity of human life, both in terms of food, clothing, and living place. Every aspect of nature used by humans for decades. In Indonesia per se, the natural resource's potential is high. Indonesia is an archipelago nation with 17.850 islands, surrounded by oceans and almost every island have a tropical forest with so many flora and fauna species in it. As time goes by and the development of human civilization, human needs are also increasing. Not only in terms of needs, but human populations on earth also increase every day. These changes are detrimental to natural resources because their management of them is not done appropriately. For example, when the human population increase the need for a living place also increases. Many green lands

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\* Corresponding author: [errica.simatupang@gmail.com](mailto:errica.simatupang@gmail.com)

are sacrificed to be used as building land so that water absorption areas are reduced and result in landslides and floods. If in the long run these lands continue to be cleared and this phenomenon expands, the impact will not only be on one region but globally. Those impacts we know as global warming. The effects of global warming that we felt lately are temperature rises in the surrounding environment.

These concerns and circumstances can be prevented and addressed if the world community works together to protect the earth and the environment and tackle the damage already done to it. Starting from a nation institution around the world promote various laws to regulate enterprises or factories that produce waste harmful to the environment. In Indonesia, this is regulated in article 13 paragraphs 1-3 of Law Number 32 of 2009 regarding Environmental Protection and Management. Paragraph (3) explains the control of pollution and/or environmental damage is carried out by the government, local governments, etc [1] so as the realization government issued the Analysis of Environmental Impacts or also known as AMDAL. Shortly AMDAL is a review of proposed legislation or large-scale government activities planned in an environment. Besides AMDAL, a couple of local governments have mandated supermarkets not to use plastic either from plastic bag to straws, the author experienced this regulation first hand when he lived in Semarang 2 years ago, so when shopping, you must bring your personal bag. However, regulations like this do not have a significant impact if only implemented in one area, all regions must work together to implement this regulation for a greater impact on reducing plastic waste in our country, and of course, accompanied by public awareness of the urgency of the current situation and provide an understanding of why preventive action is needed to save our environment. In reality, although there are many movements to save the earth such as the use of environmentally friendly materials, reducing the use of plastic, massive reforestation, and others, there are still more people who are apathetic and indifferent to this environmental issue. Lack of awareness in disposing of waste in its place, using materials or products that are not environmentally friendly, excessive use of plastic, lack of knowledge about recycling, and so on. This can happen due to a lack of education to public about the importance of protecting the environment. Therefore, the role of educational institutions is needed to educate the younger generation to foster awareness about the importance of protecting and preserving the environment from an early age by implementing Environmental Education (PLH) and implementing it in their immediate environment. In fact, Indonesia already has a national policy that regulates the development and development of environmental education, as stated in the memorandum between the Ministry of Education and Culture with the Office of the Environment No. 0142/U/1996 and No. Kep: 89/MenLH/1996, even confirmed by the Minister of Environment and the Minister of National Education by issuing a joint decree No.05/VI/KB/2005 regarding the guidance and development of environmental education, in which it is also emphasized that environmental education is carried out in an integrated manner. with the teachings that already exist in schools [2]. Unfortunately, this education is limited to theory and not applied, so there are still many young people who have low self-awareness of this issue, again and again, the impact that they want to achieve does not materialize. Indonesia must look in the mirror and learn from character education and the Japanese environment, the results of which we can see in real terms. Japan is one of the cleanest countries, this can be realized because the people have high awareness and make cleanliness their daily life. The Japanese government realizes that environmental education must start early so that children are formed into individuals who love and care about the environment [3] so that the government cooperates with educational institutions both formal and non-formal to make this happen. Children in elementary schools have been introduced to environmental education, not in the form of theory but in direct application, namely by giving responsibility to children to clean the school environment after lunch, collecting food waste, and returning food containers to their respective places. Things like this seem trivial,

however, if applied as early as possible, it will be embedded and become a good habit until adulthood which will also have an impact on the surrounding environment.

## **2 Research Method**

This research is qualitative research. Bodgan and Taylor argue that qualitative research is a research procedure whose results are descriptive data in the form of written or spoken words from the observed data [4]. The object studied in this study is environmental education owned by Japan and compared the difference with environmental education in Indonesia. Then the data was collected using library techniques, namely by collecting from various journals, research, books, articles, and the internet which were then analyzed using descriptive techniques, namely by explaining the results obtained in words.

## **3 Discussion**

Education is an important aspect for everyone because education can improve the quality of a person and even a country in various aspects. A person's education begins informally in the family environment, so it is important for parents to instill good values so that children are ready for society. However, informal education alone is not enough, concrete and theoretical sciences must be taught by someone who is an expert in their field. Therefore, schools and educational institutions as formal educational environments have vital functions and roles. The role of education is to create human resources who are reliable and able to compete in a healthy manner but still have a sense of togetherness with fellow humans [5]. Not only that, education also shapes civilized character and human beings both for fellow human beings and with the surrounding environment.

Environmental education is often underestimated and trivial, even though instilling a love for the environment from an early age, the impact is large and long-term for the environment which will later be related to human survival. Indonesia itself already has Environmental Education, but the question is whether the existing PLH has an impact on the environment and provides significant changes to students? Looking at the current state of the environment, it can be concluded that the existing modules or PLH have not given maximum impact. Indonesia can learn and reflect from Japan, where environmental education gets a large portion at the elementary and secondary school levels. Then what is the form of environmental education in Japan and how does it compare with Indonesia? The author will discuss it in the following points.

### **1.1. Environmental Education in Japan**

It is common knowledge that Japan is a waste-free country and its environment is kept clean. This situation can be realized because the people have high awareness and discipline in maintaining cleanliness, and the government is aware that instilling and growing such care and awareness cannot be done instantly, so the value of love for the environment is taught from a young age. Environmental education in Japan emerged because of technological and industrial advances that had an impact on the environment. It began with the Minamata pandemic in 1956, caused by mercury produced by the chemical industry in the city of Minamata. Then followed by air pollution in the city of Yokkaichi in 1977 which caused asthma, this incident is known as 'Yokkaichi Zensoku' or Yokkaichi Asthma. With a series of events and damage that occurred, educational leaders around the area created an educational program for the community to overcome the existing environmental damage and this was the beginning of environmental education in Japan. In 1991 the Japanese Ministry of Education officially included environmental education in formal

education and published (*kankyokyouiku shidoushiryou*) or Teacher's Guide for Environmental Education at the elementary school to high school level [6]. Initially, this guide has five points 1) Environmental education is applied at the family environment, school, and local level. 2) Environmental education is carried out by all ages with adapted development. At the level of children and adolescents focused on a direct introduction to nature to stimulate children's sensitivity to the environment, 3) Environmental education is not only to increase knowledge but also the ability and ethical development. 4) Environmental education develops a critical attitude in choosing environmentally friendly needs. 5) Through environmental education, people learn that environmental problems around them are related to environmental problems globally [7]. However, this guide has undergone many changes over the years to suit the current situation, the last change in 2014 changing a few things. The first is the environmental education perspective based on ESD or Educational Sustainable Development which aims to unite schools and social education in facilitating learning. The second is a clear environmental education policy regarding basic environmental materials for children at the kindergarten level.

Japan takes this program seriously because they have experienced and felt the bad effects of technological and industrial advances that are not matched by environmental care. Not only the government, but the community is also cooperative in carrying out various efforts made by the government so that the cleanliness of Japan that is now known to the world is realized.

Actually, in Japan itself there are no subjects on the environment, these environmental concepts and perspectives are included in other subjects, such as social sciences, sciences, social-environmental studies, household economics, moral education, and so on so that students remain to gain knowledge about the environment but do not leave the main subjects [4].

Pamuji [8] in his thesis entitled Environmental Education in Elementary Schools in Japan has data on subjects containing environmental education in elementary schools. The data is as follows below.

**Table 1.** Subjects Containing Environmental Education

Subjects	Material Title	Class Level	Learning objectives
Social Sciences	「私たちの生活と森本」 (Our Life and Forest)	Grade 5	<ul style="list-style-type: none"> <li>• Attract students' interest in the function of forest resources and learn about forest use and others.</li> <li>• Provide knowledge about forest resources and others by studying them based on existing statistical data with the assistance of visiting teachers.</li> <li>• Students can understand the importance of cultivating and protecting forest resources and the role of people working in these fields</li> <li>• Students can understand the importance of processing and protecting forest resources, community efforts in cultivating and protecting nature, and deepening the importance of land conservation.</li> </ul>

Science	「生き物と環境」 (Living Creatures and Environment)	Grade 6	<ul style="list-style-type: none"> <li>• Students can be aware of the problems of human interaction with living things and nature, as well as the impact of each interaction.</li> <li>• Investigate what problems are found in the surrounding life regarding human interactions with nature,</li> <li>• Summarizing the relationship between humans and the environment, both the surrounding and global environment based on observations.</li> </ul>
Socio-Environmental Studies	「生き物となかよし」 (Friendship with Animals)	Grade 2	<ul style="list-style-type: none"> <li>• Students can realize about human ecology and how humans can grow with their ecology through the study of the reproduction of living things.</li> <li>• Students can appreciate the importance of the meaning of life for all living things.</li> </ul>
Moral education	「自然のためにできること」 (What We Can Do with Nature)	Grade 5	<ul style="list-style-type: none"> <li>• Cultivate an attitude of mutual cooperation with others to protect the natural environment and engage directly while learning moral education.</li> </ul>
Special Activities	「自ら考え、協力する自然の教室」 (Nature Class: Thinking and Cooperating)	Grade 5	<ul style="list-style-type: none"> <li>• Creating and developing daily student learning activities by experiencing nature and culture outside of school.</li> </ul>
Integrated Study Period	「自ら考え、協力する自然の教室」 (Gift from Rice Field)	Grade 5	<ul style="list-style-type: none"> <li>• Students can understand the relationship of places with the surrounding environment as well as changes in the natural and social environment through research.</li> <li>• Students are motivated to protect the environment around them and are willing to put their own ideas into practice.</li> </ul>

Not only regulated through the curriculum, here are some student activities that stimulate discipline in protecting the environment.

1. Environmental education is taught directly through experimentation and observation. Students are allowed to touch nature and are invited to think critically about environmental problems that occur around them.
2. *Kyuushoku* is a Japanese school lunch culture. The purpose of *kyuushoku* is to build a sense of responsibility and independence in students [9]. Every day students have a turn to distribute lunch and clean up leftovers together, this makes students start to be responsible for cleanliness from a young age and are expected to be able to apply it on a large scale to the environment around them.



**Fig. 1.** *Kyuushoku* in Japanese Elementary School

3. Dispose of waste according to its respective types for recycling. This habit is cultivated since childhood, Japanese schools have trash cans on every corner and are divided into several sections according to the type of waste. So, it is important for students to know the correct way to dispose of garbage. This method can also provide knowledge to students about good and correct waste recycling, not only in the school environment but also in the surrounding environment.
4. Utilization of household and school organic waste to be used as compost. Students collect leftover vegetables, dry leaves, and others. This activity was carried out with the help of the students' parents and the fertilizer was used for plants around the school.
5. *Gakko Souji* or cleaning the school. This activity is carried out by dividing students into several groups to clean the school environment. *Gakko Souji* aims to foster responsibility and a sense of ownership of students towards school and environmental cleanliness, as well as foster an understanding that maintaining cleanliness is a natural part of life [9]. This activity is carried out evenly in all Japanese schools, so it is not surprising that schools do not have cleaning staff, because these roles are taken over by students and teachers [7].

#### 1.2. Environmental Education in Indonesia

Environmental education in Indonesia was initially only organized by the Jakarta Institute of Teacher Training and Education (IKIP) in 1975, then between 1977/1978 the Outlines of the Environmental Teaching Program were initiated and tested in 15 elementary schools in Jakarta. In 1984 subjects on population and the environment were included in the curriculum for all general and vocational secondary level subjects set by the Directorate General of Primary and Secondary Education, Ministry of National Education. Through this project, the Environmental Culture School or *Sekolah Berbudaya Lingkungan* (SBL) program was developed in 120 schools and grew to 470 schools in 2007. Then in the previous year, The Ministry of Environment is expanding the environmental education program at the primary and secondary levels through the Adiwiyata program, starting with 10 schools on the island of Java as an initial model [10]. Adiwiyata is an award given by the government, both the central government, provincial regions, and district/city governments to schools that are good at carrying out environmental care and cultured movements in schools. To become an adiwiyata school, schools are required to meet several requirements and files and start from the district/city stage first [11]. However, in fact, with the existing programs in implementation, various obstacles were found. Retnowati [10] describes these obstacles.

- a) The low participation and role of the community in PLH are due to a lack of understanding of environmental problems that occur, low abilities and skills, and low community commitment to solving environmental problems.
- b) Limited understanding of education actors on PLH. This is due to the diverse perceptions of life education actors.
- c) Lack of commitment by education actors, where many schools feel that PLH is not so important.
- d) The existing materials and methods are deemed inadequate so that students' understanding is not complete, plus the materials and methods of implementing PLH are not applicable so they do not support the resolution of environmental problems experienced by their respective regions.
- e) Lack of availability of PLH funds and the attention of the government that has not been able to allocate and increase the budget.
- f) Weak coordination and communication between institutions and education actors concerned so that PLH is less developed. It can be seen from the PLH movement which is sporadic, not synergistic, and overlaps with each other.
- g) There is no government policy that supports the development of PLH.

The above constraints are also reinforced by the data that the authors managed to obtain from previous research by [8] who conducted research on 24 elementary schools in South Kalimantan, the authors took 3 schools as samples.

1. SDN Tatah Belayung Baru received the Adiwiyata award in 2017. The school environment is beautiful, there are separate trash bins for organic and non-organic waste, lots of plants around the classroom and school grounds so the atmosphere is cool, and there are sinks and shoe racks, for school cleanliness, it is the responsibility of teachers and students, the water source was smooth. However, unfortunately, environmental learning only begins in grades 5-6, not being nurtured since entering school.
2. SDN 1 Komet received a national level adiwiyata award in 2017. This school has a neat cleaning system, there are trash bins for organic and non-organic waste, management of compost from the household waste collected by students and parents, canteen supervised by staff health so that the suitability of food is maintained.
3. SDN Beringin Jaya. This school is far from the city so the surrounding area is still surrounded by rice fields and trees. Waste processing is carried out by directly burning the existing waste because there are only ordinary trash bins, reforestation efforts are only a learning material but cannot be applied due to inadequate soil conditions. Environmental education is not carried out optimally due to a lack of funds.

The next data is taken from the research of Wahyuni Purnami and colleagues who researched the development of the Environmental Education module in 18 elementary schools in Manggarai, East Nusa Tenggara. Of the 18 schools, there are 17 schools that do not have Environmental Education subjects, two of which are only BKL (Local Skills Culture) and SBK (Social, Culture, and Skills) subjects. With the conclusion that 6 schools really need Environmental Education subjects, 10 only need them, and two schools do not need Environmental Education subjects because they are quite good at inculcating awareness and concern for the environment. From the data above, almost all schools in Indonesia have only implemented Environmental Education in grade 4 or 5 of elementary school. It is unfortunate that environmental education was not taught earlier.

### 1.3. Differences in Environmental Education in Japan and Indonesia

From the two points above, it can be concluded that the differences in Environmental Education in Japan and Indonesia are as follows.

**Table 2.** Differences in Environmental Education in Japanese and Indonesian Elementary Schools

Aspect	Japan	Indonesia
Application of PLH	Direct practice and incorporated into the subject.	Some hands-on practice and applied to several subjects.
Subjects that contain PLH	Science, Social Sciences, Socio-Environmental Studies, Moral Education, Special Activities, Integrated Study Period	IPA (science), IPS (social), SBK (art)
Education Level of PLH Implementation	Class 1 to 6	Grade 5 to 6
Things Taught	Processing waste, disposing of garbage in its place, direct environmental observation, cleaning the school environment, and implementing a picket system for the task of distributing and cleaning lunch.	Processing plastic waste into works of art, picket per class, decorating flower pots, and community service in several schools.
General PLH Distribution Pattern	Sporadic	Centralized

## 4 Conclusion

Japan and Indonesia both insert environmental education into the main subjects, so that students still gain an understanding of the environment without being left behind in the main subjects. The significant difference is direct application and observation. Indonesia only prioritizes theory and lacks in practice. So that the material obtained about the environment does not have a maximum impact on students. Environmental education in Japan is also taught as early as possible, and the Japanese government emphasizes that environmental education starts from the family, while in Indonesia the module for environmental education is for fifth graders.

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