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Environmental Education Based on Local Values: Its Integration in the Indonesian Elementary School Curriculum

Asep Herry Hernawan*, Deni Darmawan, Mohammad Ali

Department of Curriculum Development, Universitas Pendidikan Indonesia, Bandung, Indonesia

Abstract: The scope of this research seeks to describe the needs analysis of the environmental education curriculum in elementary schools. The data is extracted from students and teachers when utilizing students' local wisdom. Critical environmental awareness is a necessity for all ages, including elementary school students. Proper understanding of environmental issues involves earlier initiation and introduction of students to the local content. This paper aims to describe the need to integrate environmental issues based on local wisdom within the elementary school curriculum. The authors seek to guide education planners in Indonesia on integrating environmental issues based on local values or local content in specific subject content for proper awareness creation among elementary school students. The target is to address gaps in the teaching of environmental education in primary schools across the archipelago. Elementary school students are the future citizens whose understanding of how the environment works from a localized perspective will help bring about better future environmental management. The study uses a survey method, applying two clusters of random sampling techniques. It was conducted in selected elementary schools around Bandung, the capital city of the West Java Province. For the data collection, structured questionnaires were used to examine. Then, the data was analyzed using simple statistical methods, which resulted in percentages. Conclusively, it has been established that specific environmental education themes based on local values and local content need to be included in the elementary school curriculum for more clarity and understanding of topics by the students. The suggested thematic topics should include issues related to overcoming environmental pollution, preventing global warming, the wise use of the environment flora and fauna, and appropriate values needed for environmental conservation and sustainability.

Keywords: school curriculum, local values, elementary school, environmental education.

基于地方价值观的环境教育：融入印尼小学课程

摘要：本研究的范围旨在描述小学环境教育课程的需求分析。数据是在利用学生的本地智慧时从学生和教师那里提取的。关键的环境意识是所有年龄段的必需品，包括小学生。对环境问题的正确理解包括更早地开始和向学生介绍当地的内容。本文旨在描述将基于地方智慧的环境问题纳入小学课程的必要性。作者试图指导印度尼西亚的教育规划者将基于当地价值观或当地内容的环境问题纳入特定学科内容，以在小学生中建立适当的意识。目标是解决整个群岛小学环境教育教学中的差距。小学生是未来的公民，他们从本地化的角度理解环境如何运作将有助于实现更好的未来环境管理。该研究采用调查方法，应用两组随机抽样技术。它在西爪哇省省会万隆附近的选定小学进行。在数据收集方面，采用结构化问卷调查。然后，使用简单的统计方法分析数据，得出百分比。最后，已经确定基于当地价值观和当地内容的特定环境教育主题需要包含在小学课程中，以便学生更加清晰和理解主题。建议的专题应包括与克服环境污染、防止全球变暖、明智地利用环境动植物群以及环境保护和可持续性所需的适当价值有关的问题。

关键词：学校课程、地方价值观、小学、环境教育。

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About the authors: Asep Herry Hernawan, Deni Darmawan, Mohammad Ali, Department of Curriculum Development, Universitas Pendidikan Indonesia, Bandung, Indonesia

Corresponding author Asep Herry Hernawan, asepherry@upi.edu

1. Introduction

The need to address environmental challenges is a global agenda, which demands urgent and specific measures, strategies and efforts to solve the problems of global warming, environmental pollution, poor waste disposal and many other profound and complex climate challenges with detrimental effects on human existence and all Earth's species [1]. The teaching and learning of environmental issues is one of the methods that can be used to stimulate varying responses and debates in students [2] as future stakeholders regarding climate change.

Teaching environmental issues through school curriculum is an unavoidable necessity for today's rapidly-changing universe where the climate is deteriorating and warming at terrible speed. Climate change is a real problem [1]. Integrating local environmental themes in the school curriculum is an important component [3] because teaching students about environmental issues by using local examples, observing the local situation, acting through role-play [4] and engaging them through critical thematic discussions allows them to learn easily. Environmental issues are easily learned when they are taught using local teaching techniques [4]. This study aims at addressing gaps regarding the teaching of environmental education content at the elementary level in schools within Bandung, a capital city of the West Java Province. The study seeks to help in establishing appropriate themes which may be used to guide education planners of Bandung City Education Administration department on how to integrate relevant thematic environmental issues in the elementary school curriculum based on localized content, with a focus on the need for proper implementation of environmental education. Thus, the main objective is to facilitate the development of a better environmental education curriculum relevant for local environmental conservation and sustainability. The author believes that the present study will contribute to stimulation and enhancement of knowledge for attitude and skill changes toward achieving better environmental policies and practices within Indonesia, hence contributing to the global environmental and climate campaign.

Indonesia is among the countries with poor records regarding the environment, due to the fact that countries face many environmental problems which include poor waste management and disposal, rampant water pollution, deforestation, and air pollution from widespread smoking and car emissions [5]. Environment problems have led the government, just like other governments, to become more serious with environmental education. This is due to the fact that exploration of environment and tackling the causes of pollution and any other environmentally destructive activities [4], [6] are inevitable components of national growth and development.

The main environmental issues faced by Indonesia compared to other countries include the effects of global warming and climate change [7]. The average temperature of the earth's surface has increased by 1.5^{o} through 4.5^{o} Celsius, and the average increase in the sea surface level has increased by 10 through 15 cm due to the Arctic Pole's ice melting in the summer season [8]. These have influenced the frequency of hurricanes, the decrease in sea resources, the destruction of coral reefs, and the disappearance of species which are sensitive to rising temperatures [9]. The environment problem relates to the increase of the world's population. The current world population is beyond the capacity of the earth and their exploitation of the environment for their needs fulfillment has threatened the environment conservation.

According to [10], in the effort to protect and preserve the planet from degradation, there is a need for sustainably managing the world's natural resources and taking required actions on climate change, in order to fulfill the demands of today and the coming years. The use of fossil fuel energy by vehicles and industry produces the emission of carbon, which threatens the atmosphere. The uncontrolled decrease of tropical forests, around 7.6 million through 10 million hectares each year, lowers the absorption of carbon, damaging biodiversity, and leading to the disappearance of some biospheres in the habitat [11].

In regard to overcoming the environment problem, both in terms of finding its solution and avoiding its further damages, amelioration efforts need to cultivate awareness of the people concerning the importance of environmental conservation. This is related to environment education beginning in primary school through which the related competencies, i.e., knowledge, psychomotor, and attitude of the environment conservation are cultivated and developed so students will be aware of as well as changing their behavior toward the importance of environmental conservation.

Since environmental problems vary among various communities, the primary school environmental education curriculum needs to be developed based on local needs. The problem of environment needs a solution, for it has a connection to the sustainability of human life. As a system, the environment has interrelated and interdependent components which every living creature needs. Conserving the environmental system so it is in good condition requires the people's awareness about the importance of its sustainability. The cultivation of this awareness comes through education. Therefore, one of the

education challenges, in this case, is how the education process should cultivate the youngsters' awareness of the importance of environmental conservation.

The focus of the research is to describe the need to integrate environmental issues based on local wisdom in the elementary school curriculum. This effort to integrate environmental content involves the role of the teacher. Teachers can convey it in class through environmental subjects. So the role of the teacher is important because the next generation of elementary school students will realize better environmental management.

2. Theoretical Review

Developing the youngsters' knowledge, attitude, and skill on local environmental conservation is among the attempts to cultivate awareness of the need for sustainable development. This must begin as early as possible, from childhood or in primary and junior secondary schools. For this reason the related subject matter is better included in the schools' curriculum as its content. From the perspective of curriculum theory, this effort is a part of micro-curriculum development. In curriculum development, the phases that should be followed in an attempt to make its content relevant or in line with the local community needs are: 1) conducting needs assessment, 2) formulating competencies the pupils should achieve, 3) defining learning materials, 4) planning a mode of learning, and 5) planning a proper evaluation strategy.

Developing young people's knowledge, attitude, and skill in environment conservation from an early age in both formal education and informal/community settings is integral to sustainable development. Curriculum development consists of several phases that should be followed, in an attempt to make its content relevant to local community needs: 1) conducting needs assessment, 2) formulating competencies pupils should achieve, 3) developing learning materials, 4) planning a mode of learning, and 5) determining a valid evaluation strategy. From the perspective of curriculum theory, this effort is a part of micro-curriculum development.

Previously, environment education was a specific subject in the Indonesian junior secondary school (JSS) and senior secondary school (SSS) curricula, but was not explicitly incorporated into primary school learning; instead, it was included as an aside module in social studies. However, this subject has recently been dropped altogether from the social studies curriculum and has been shuffled over to geography in both JSS and SSS curricula.

Environment education curriculum consists of concepts on the following: the Earth is a continuous, interrelated, and interdependent ecosystem; human life needs biodiversity to survive; nature is homeostatic but has limited ability to support human life; advancements in science and technology contribute to damaging the environment but can also help to find solutions; the environment can be managed properly via strong government policy; and uniqueness of human intellectual capacity influences responsible behavior towards the environment [12].

According to [13], environmental problems stem from human behavior, which is known as *biological imperialism*. When those who occupy the environment do not have the capacity or desire to wisely manage it, such a relationship with the environment is unsustainable and will ultimately destroy both in the future. Therefore, a commitment to conservation and preserving biodiversity and human life is required. Making the necessary changes to preserve the natural world is among the challenges in conservation management.

[14] indicated constraints in implementing environmental education:

1) It is not that easy to develop environmental education content since it should apply a multidisciplinary approach;

2) Including environmental education in the curriculum implies more students' burden when the education system is centralistic;

3) Environmental education should have been an integral part of the value education, but in its implementation, both are taught separately;

4) Environmental education content is only a small part of the school instruction program, so it is not easy to cultivate value, awareness, and attitude toward environmental conservation responsibility.

According to [15], the environmental education curriculum lacks in-depth analysis, and the teachers' creativity in connecting environmental education to real daily life is also limited.

The new paradigm of environmental education indicates that it tends to change its direction towards making the learners environmentally literate. It aims to educate the learner to treat the environment so that it fulfills the human needs and for its conservation. Thus, environmental education should be implemented as education for the environment. This implies in its implementation that it gives the learners opportunity to conserve and improve the quality of the environment. Environmental education aims to facilitate the students' understanding of the environment as a system so that they are aware of the importance of its conservation. This is also regarded to allow them to become change agents in anticipating and finding the environmental problem solution.

The approach in environmental education implementation is not only within the classroom but also in the real environment so that the students acquire real problem solutions. This will develop their knowledge, awareness, and skill in environmental conservation. The constraint in using this particular approach is the teachers' understanding of environmental education as knowledge transfer, so the

students only acquire knowledge instead of attitude and behavior.

According to [16], behavior change is an indicator of maturity. This is in line with [17] stating that education makes the students more mature adults. According to [9], [18], behavior is connected with the *intention to act*. Prior to the action, there are influencing factors: readiness to act, knowledge of the strategy to act, knowledge of the related issue, and the individual personality factors, such as attitude, the locus of control, and responsibility. The condition in which an individual acts contributes to his or her behavior toward the environment. Thus, the implementation of environmental education should involve the stakeholder.

Development is a continuous, systematic process aimed at life improvement in the economic aspects, such as facility and infrastructure, and physical aspects. Development is a process of improving the quality of human life that the environment must support. On the one hand, the environment is an important resource in supporting the development in space, agriculture, mining, fishery, tourism, etc. [5]. On the other hand, the intensity of the environmental exploration, which puts economic growth as the priority, could cause environmental destruction, e.g., forest destruction, water and air pollution. Data on the environment indicates that 29% of the earth's soil has become a desert, 6% of which is categorized as severe.

Tropical forest, which is 6% of the earth's surface and whose biodiversity consists of 50% of the world species, is in a risky condition. Every year, among 7.6 million through 10 million hectares of the tropical forest has been disappearing. Further, the use of fossil fuel by industry gives a significant contribution to the accumulation of CO2 in the atmosphere, and this causes the earth temperature of 1,5-4,5°C and ice melting in the north pole, which leads to a 25-40 centimeter increase in the sea level surface [28]. These damages made those concerned worried and led to organizing an international conference, United Nations Conference on Human Environment (UNCHE) (Stockholm, Sweden, June 1972) [29]. This was the first international conference on the environment initiated by the United Nations and attended by delegates from 114 UN member countries. The conference became the beginning of the global effort in earth conservation with the motto "Only One Earth" for all human beings. Since the conference's opening ceremony was on June 5, this date became World Environment Day.

The conference's agreements were the connection between development and poverty eradication, education improvement. The participants agree that poverty is the cause of environmental damage, so the forum agreed that environmental conservation efforts must be included in the national development. The forum also established United Nations Environmental Programme (UNEP), whose headquarter is in Nairobi, Kenya, tackling the environmental problem. This organization also promoted the sustainable development concept, preceded by the Brundtland report in 1987 on "Our Common Future," which formulated the basic principles of sustainable development [28].

Following the Stockholm conference, there was a polarization of developmentalism, which attempted to prioritize development without considering its effect on the environment and environmentalists concerned with environmental conservation. In the 1992 *Earth Summit* organized in Rio de Janeiro, Brazil [30], this situation was synchronized by the global effort of compromising the development and environment conservation. The conference discussed solutions to pollution, climate change, degradation of ozone, utilization of water and sea resources, widening of forest destruction, desert formation and soil degradation, dangerous waste, and biodiversity degradation.

The summit formulated and emphasized a plan for implementation that integrated economy, ecology, and social factors, based on good governance. The summit also promoted a green economy and a discussion about stopping global warming as themes for the following meeting organized in Bali, Indonesia, and Kyoto, Japan.

Limitations of the Earth to support human life became a major concern for humanity ever since Malthus' proposition that stated that population growth followed geometric progression while food growth followed an arithmetic one [19]. This means that, unless there is a serious effort to overcome the problem, the natural resources available will, at some point in time, no longer be able to satisfy the needs of humanity. The natural consequences of this will result in hunger, malnutrition, diseases, and natural disaster. Furthermore, a study [2] concluded that the degradation of the quality of our environment will reach destructive levels if the human consumption increased exponentially [20].

The environmental problem solution needs a longitudinal process, and its result can not be identified soon. However, [21] indicated that behavior change resulting from education guidance is a strategic environmental conservation effort. However, [22] indicated some factors influencing every person to act: readiness to act, knowledge of the strategy to act, knowledge on environmental issues, and personal factors, such as locus of control, attitude, and responsibility [23]. A study on environmental worldview as the basis for developing human behavior concerning global warming indicated a significant difference between the score mean obtained from Hong Kong, with the mean of 2.95, and that of the US people, with the mean of 3,65 [5]. This means that every stage of the society's development implies the environmental view, and the society will adopt this

according to the difference in economics, personality, and communication [3].

3. Research Methodology

This study employs a survey of Bandung's elementary school teachers (79) and students (139) selected randomly. So, the total size of the sample is 218 people.

3.1. Use of Questionnaires

This study used structured questionnaires for data collection. The questionnaires are in the form of the rating scale, consisting of four scores: 1 for "strongly disagree", 2 for "disagree", 4 for "agree", and 5 for "strongly agree". In this study, score 3 (uncertain-moderate) was removed with regard to avoiding respondents not choosing a suitable score of the scale and choosing score 3 (moderate).

Before the execution of data collection, the questionnaires were tested in regards to assessing their readability and then revised accordingly. Furthermore, their content validity and reliability were also examined. The content validity was reviewed by three experts, as judges, and they judged it was reasonably valid. Its reliability was examined by using the Cronbach Alpha formula, and its reliability index was found to be 0.68.

3.2. Data Analysis

The data collected was analyzed by applying simple statistical methods of percentage followed by the chi-square (χ^2) test of independence. The former method was used for classifying the items by factors of the questionnaires for being included as the curriculum contents. Those who agreed (score 4) and strongly agreed (score 5) (more than 60% of both clusters of respondents (teachers and students)) were included as the curriculum contents. The latter method was used to test the dependence of the response by both sample clusters on each of the items. The χ^2 test applied stepwise procedures:

1) Putting the sorted items of each factor in a contingency table;

2) Calculating its χ^2 statistic;

3) Reviewing whether and at what p-value the $\chi 2$ statistic of every factor is significant;

4) Concluding the results of the $\chi 2$ significance by using $\alpha = 0.05$.

4. Results

The content on the environmental education curriculum is classified into three major categories, which have been revealed and discussed below.

These environmental aspects are the thematic concepts that can be introduced or integrated into teaching environmental issues at elementary schools. They were divided into five topics: environmental pollution caused by industrial wastes or by-products, transportation (or motor vehicle emissions), traditional market waste products, human activities (or mass concentration of people), and domestic wastes.

Tables 1-10 summarize the survey results on each of the five topics concerning environmental pollution and identified as potential for integration into the elementary school curriculum.

Table 1 Aspects of handling environmental pollution caused by traditional market (students' opinions)

Criteria	Indicator-1 (%)	Indicator-2 (%)	Indicator-3 (%)
Strongly agree	28.777	24.46	15.827
Agree	55.396	55.396	58.273
Disagree	15.827	15.827	25.18
Strongly disagree	0	14.388	0.7194
Total %	100	100	100

Table 2 Aspects of handling environmental pollution caused by traditional market (teachers' opinions)

Criteria	Indicator-1 (%)	Indicator-2 (%)	Indicator-3 (%)	Indicator-4 (%)	Indicator-5 (%)	Indicator-6 (%)
Strongly agree	51.316	47.368	55.263	36.842	42.105	51.316
Agree	46.053	44.737	42.105	57.895	52,632	46.053
Disagree	13.158	65.789	13.158	39.474	2,6316	13.158
Strongly disagree	13.158	13.158	13.158	13.158	26.316	13.158
Total %	100	100	100	100	100	100

Table 3 Aspects of handling environmental pollution caused by transportation (students' opinions)

Criteria	Indicator-1 (%)	Indicator-2 (%)
Strongly agree	37.41	64.748
Agree	57.554	33.094
Disagree	35.971	21.583
Strongly disagree	14.388	0
Total %	100	100

Table 4 Aspects of handling environmental pollution caused by transportation (teachers' opinions)

Criteria	Indicator-1 (%)	Indicator-2 (%)
Strongly agree	57.895	64.474
Agree	40.789	32.895
Disagree	0	0
Strongly disagree	13.158	26.316
Total %	100	100

Table 5 Handling environmental pollution caused by waste from people's mass concentration or human activities (students' opinions)

Criteria	Indicator-1 (%)	Indicator-2 (%)
Strongly agree	15.827	16.547
Agree	63.309	74.82
Disagree	20.144	57.554
Strongly disagree	0.7194	28.777
Continuation of Table 5		
Total %	100	100

Table 6 Handling environmental pollution from people's mass concentration (teachers' opinions)

Criteria	Indicator-1 (%)	Indicator-2 (%)	Indicator-3 (%)	Indicator-4 (%)	Indicator-5 (%)
Strongly agree	36.842	48.684	34.211	50	57.895
Agree	57.895	42.105	64.474	42.105	38.158
Disagree	39.474	78.947	0	65.789	26.316
Strongly disagree	13.158	13.158	13.158	13.158	13.158
Total %	100	100	100	100	100

Table 7 Solid waste from households that can still be recycled and needs to be processed by involving the surrounding population (students' opinions)

Criteria	Indicator-1 (%)	Indicator-2 (%)	Indicator-3 (%)
Strongly agree	18.705	37.41	40.288
Agree	58.993	54.676	50.36
Disagree	20.863	64.748	79.137
Strongly disagree	14.388	14.388	14.388

Table 8 Handling environmental pollution from household waste (teachers' opinions)

Criteria	Indicator-1 (%)	Indicator-2 (%)	Indicator-3 (%)	Indicator-4 (%)
Strongly agree	47.368	43.421	48.684	50
Agree	51.316	48.684	46.053	47.368
Disagree	0	65.789	39.474	13.158
Strongly disagree	13.158	13.158	13.158	13.158
Total %	100	100	100	100

Table 9 Prevention of environmental pollution from industrial waste (students' opinions)

Criteria	Indicator 1 (%)	Indicator 2 (%)	Indicator 3 (%)
Strongly agree	41.007	11.511	15.827
Agree	47.482	49.64	48.921
Disagree	10.791	37.41	29.496
Strongly disagree	0.7194	14.388	57.554
Total (%)	100	100	100

Table 10 Prevention of environmental pollution from industrial waste (teachers' opinions)

Criteria	Indicator 1 (%)	Indicator-2 (%)	Indicator-3 (%)	Indicator-4 (%)
Strongly agree	60.526	23.684	46.053	19.737
Agree	36.842	61.842	44.737	53.947
Disagree	13.158	11.842	65.789	23.684
Strongly disagree	13.158	26.316	26.316	26.316
Total %	100	100	100	100

With respect to overcoming environment pollution, examining the independence of each teacher' and student' response indicates that each of the five topics χ^2 is not significant at $\alpha = 0.05$. The statistic chi-square of this category (overcoming environment pollution) is $\chi^2 = 3.80$, which is lower than χ^2 of the distribution table of 7.879. Each statistic chi-square of the five topics indicates overcoming pollution caused by industry $\chi^2 = 0.140$, caused by transportation $\chi^2 = 0.130$, caused by traditional marketplace $\chi^2 = 0.400$, caused by concentration of people $\chi^2 = 0.230$, and domestic waste 0.46, which also indicates lower χ^2 than that of the distribution table, implying that it is not significant. This means that the response of teachers and students in this particular category and the topic are related to or dependent on who interprets the category. Hence, all the five topics are included in the curriculum.

5. Discussion

5.1. Preventing Environment Pollution

This content category consists of five topics on pollution caused by the following: industry, transportation, traditional marketplace, concentration of people, and domestic wastes. Chi-square regarding examination of the independence of teachers' and students' responses on the content category of preventing environment pollution indicates that the χ^2 of each of the five topics is not significant at $\alpha = 0.05$. The statistic chi-square of this category (preventing environment pollution), however, is significant; $\chi^2 = 33.62$ is higher than χ^2 of the distribution table of 7.879. Each statistic chi-square of the five topics indicates that pollution caused by industry $\chi^2 = 0.210$, caused by transportation $\chi^2 = 0.250$, caused by traditional marketplace $\chi^2 = 3.110$, caused by concentration of people $\chi^2 = 0.110$, and domestic waste $\chi^2 = 0.840$, which also indicates lower χ^2 than that of the distribution table, which implies that it is not significant. This means that the response of the teachers and students in this category is significant, which can be interpreted as the response of teachers and students independent from one another. However, their response to each topic is related or dependent. The content category can be excluded from the curriculum, while all the five topics are included in it.

5.2. Wise Environment Usage

This content category consists of two topics: wise environment usage dealing with city space usage and water usage. Chi-square of this content category indicate $\chi^2 = 5.01$ which is not significant at $\alpha = 0.05$. The statistic chi-square of each of the two topics is not significant either, that is, wise environment usage dealing with city space usage, $\chi^2 = 1.420$, and wise environment usage dealing with water, $\chi^2 = 1.420$. Each of the statistic chi-squares is not significant, meaning that teachers' and students' responses to this content category and the topics relate to one another, which implies they can be included in the curriculum.

5.3. Enculturation of Environment Conservation

This content category consists of two topics: acculturation of throwing garbage and environment betterment. The chi-square for this content category indicates $\chi^2 = 7.58$, which is not significant at $\alpha = 0.05$ since the chi-square of the distribution table is 7.879. The statistic chi-square for each of the two topics is not significant either, that is, acculturalization of throwing garbage, $\chi^2 = 8.490$, and wise environment usage dealing with water, $\chi^2 = 4.650$. Each of the statistic chi-squares is not significant, meaning that teachers' and students' responses to this content category, and the topics relate to one another, which implies they can be included in the curriculum.

Environment conservation is one of the three main dimensions of sustainable development. Therefore, its education, which is the main content of environment education (EE), can be connected to education for sustainable development (ESD). ESD is UNESCO's global action program (GAP), so with regard to achieving its goals (ESDGs) within the decade of 2015–2024, the implementation of EE is among the efforts in achieving certain ESD goals.

The implementation of EE with respect to ESD is cultivating awareness, value, knowledge, and skill toward environment conservation in particular and sustainable development in general. According to [24], in the implementation of ESD, it is recommended that principles, values, and practices of sustainable development should be integrated into all aspects and levels of education and learning starting from early childhood.

Theoretically, ESD can be integrated into all school subjects [25]. The integration is done in the form of themes; each includes various subjects, such as education to eradicate poverty, human rights, gender equality, democracy, and good governance. Since the EE can be viewed as one of the ESD dimensions, this also can be integrated into particular school subjects' curriculum in the form of themes related to the environmental problems to be solved.

Some environmental problems are commonly encountered at a national level and some specifically encountered at a local level. Bandung city, therefore, encounters problems both as it is commonly encountered at the national and local levels. Because EE at primary school needs to be connected to the local environmental problems, its curriculum is better formulated based on the local related needs.

This study findings consist of four contents:

1) Overcoming environment pollution: This content category consists of five topics: overcoming environment pollution caused by industry, transportation, traditional market, people's concentration, and domestic waste;

2) Preventing environmental pollution: This content category also consists of five topics: preventing environmental pollution caused by industry, transportation, traditional market, people's concentration, and domestic waste;

3) Wise environment usage: This content category consists of two topics: wise environment usage dealing with city space usage and water usage;

4) Enculturation of environment conservation: This content category consists of two topics: acculturalization of throwing garbage and environment improvement.

The findings based on this study are needed as the primary school EE curriculum contents. Regarding implementing the curriculum, each topic is elaborated into themes. This study has also assessed the themes as the elaboration of each topic. These are topics of overcoming environmental pollution caused by industry consisting of two sub-themes: recyclable solid waste and usable solid waste.

The topic of overcoming environmental pollution caused by transportation consists of two sub-themes, namely minimizing the negative effect of air pollution through developing city parks and minimizing the negative effect of air pollution through planting trees in house yards. The topic of overcoming environmental pollution caused by the traditional marketplace consists of two sub-themes: recyclable solid waste and overcoming liquid waste.

The topic of overcoming environmental pollution caused by a concentration of people, such as in the railway, bus stations, hospital, etc., consists of two sub-themes, namely the provision of diversified trash and the planting of trees to decrease air pollution. The topic of overcoming environmental pollution caused by domestic waste consists of two sub-themes, namely separating organic and non-organic waste and sorting nonorganic waste.

The topic of preventing environmental pollution caused by industry consists of two sub-themes, namely recyclable solid waste and usable solid waste. The topic of preventing environment pollution caused by transportation consists of two sub-themes, namely minimizing the negative effect of air pollution through developing city parks and minimizing the negative effect of air pollution through planting trees in house yards.

The topic of preventing environmental pollution caused by traditional marketplace consists of two sub-themes: recyclable solid waste and overcoming liquid waste. The topic of preventing environmental pollution caused by a concentration of people, such as in a railway, bus station, hospital, etc., consists of two sub-themes, namely the provision of diversified trash and the planting of trees to decrease air pollution. The topic of preventing environmental pollution caused by domestic waste consists of two sub-themes, namely separating organic and non-organic waste and sorting nonorganic waste.

The topic of wise city space usage consists of two sub-themes, namely the identification of the city's empty space, and the establishment small city parks. The topic of wise water usage consists of three sub-themes, namely recycling water waste, usage of water usage for fuel, and usage of water waste for agriculture. The topic of wise solid waste recycling consists of two sub-themes, namely the waste of handicraft industries and the sorting of usable domestic and dry waste.

The topic of the acculturalization of throwing garbage and regarding environmental conservation, consists of three sub-themes, namely using organic garbage for fertilizer, providing spaces for trash in public and on the streets. The topic of acculturalization of environmental improvement, regarding environmental conservation, consists of two sub-themes, namely the betterment of the environment, the betterment of drainage, and the planting of trees to decrease air pollution.

Environmental education basically should cultivate an understanding relationship between themselves and other creatures as well as their relationship with the natural environment. Modern education teaches us the value of appreciating other creatures and the value of understanding diversity and differences. It also teaches us about justice, responsibility and tries to bring elicit conversation on the subject. That is why education can be an important means to promote the values to achieve ESD. In its implementation, it must be adjusted to the local environmental and socio-economic conditions.

Educational reorientation, which focuses on developing knowledge, skills, perspectives, and norms related to the EE, becomes very important for the present and future generations. Based on the objectives, contents and teaching method of the existing curriculum are required to develop a trans-disciplinary understanding of social, economic, and environmental issues. Awareness of such matters should be introduced since childhood.

Developing the related curriculum is also necessary to develop an effective teaching-learning strategy and its evaluation. Its implementation should emphasize practical experience to cultivate awareness, attitude, and value system toward environment conservation. This is in line with the concept formulated by [26]: "According to our experience, it seems to be reasonable to use experiential education as a theoretical background for ESD programs". Furthermore, according to [27], the keys to teaching and learning success are critical, joyful, and competitive learning on environmental improvement; these are long-term processes.

Following the proven research focus, the main findings of this research show that the inculcation of environmental care attitude must be in the form of a curriculum from an early age, as this study has been conducted on elementary school students in Bandung.

6. Conclusion

Environmental education needs to be included in the Bandung primary school curriculum concerning cultivating the students' values related to environmental conservation. Its implementation should be connected to education for sustainable development. The environmental education contents for inclusion in the Bandung primary school curriculum consist of four content categories. Each of the four curriculum content categories consists of topics concerning environmental education, which should be elaborated into themes that need to be included in the Bandung primary schools' thematic curriculum regarding cultivating the students' awareness and competencies related to the local environmental conservation.

The Bandung primary school environmental education curriculum, which is developed based on this study, should also be implemented in sustainable development education with the early cultivation of sustainability awareness among the students. Several other studies have analyzed this environmental education from the media and learning model perspectives. This study focuses on elementary school students in terms of content based on local wisdom.

The implications of this research identify environmental education content involving students' attitudes in using it and the strategic steps that teachers must take in formulating it in the environmental education curriculum.

This research finding has been able to support the ESD program and the sustainable development program through the development of an early environmental education curriculum.

However, this research still has limitations from the aspect of the target sample that has not been carried out for all levels of education. Like at the high school and college level.

In the future, this environmental awareness program should be a core curriculum program at all levels of education.

The scientific novelty of this research includes the identification of environmental education curriculum content. The findings are supported by students' opinions and teachers' roles based on local wisdom and demanding an ESD program. This attitude is explored and instilled so that elementary school students can quickly and easily practice it in everyday life, as was done in Bandung.

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