

The Implementation of Environment-Based Curriculum in Adiwiyata State Primary School

Lusia Dwi Septy Cahyanti¹, Setya Raharja²

¹ Educational Management, Postgraduate Program, Yogyakarta State University ² Educational Management, Postgraduate Program, Yogyakarta State University

¹ dwishepty@gmail.com, ^{2*} setya@uny.ac.id

Abstract: The Indonesian government implements Adiwiyata program in some schools to improve the next generation character of environmental caring. An important component of the Adiwiyata program is an environment-based curriculum that focuses on environmental management and protection. Some schools still face on the challenges of this curriculum and some have worked on it well. This study aims to explore the implementation of environment-based curriculum at an Independent Adiwiyata State Primary School in Yogyakarta. This is a qualitative study involving principals, teachers, committees, and students. The data was collected through in-depth interviews and observations. Then, the collected data was analyzed using Miles and Huberman qualitative analysis. This study shows that: (1) the implementation of environmental education is integrated to the national curriculum (K-13); (2) the environmental materials for each grade refers to the Outline of The Material Content or GBIM; (3) students are directly involved in the environmental activities through learning, extracurricular and habituation; (4) the environmentally-friendly facilities are used in the implementation of education; and (5) school establishes partnerships with various parties to support curriculum achievement. These findings can bring practical benefits as it can help the school to evaluate the curriculum, inspire other Adiwiyata schools by the principles found in this study. Besides, it also helpful for further researchers who concern on environment-based curriculum.

Keywords: *environment-based curriculum, Adiwiyata program, implementation*

INTRODUCTION

Environmental issues are crucial things that need to be addressed in the current era of globalization. Modernization and industrialization in human life have caused various problems such as global warming, environmental pollution, and exploitation of nature (Bhat, Zahid, Sheikh, & Parrey, 2017: 14). Besides creating policies solving these environmental issues, the government also puts some efforts on building the strong character of environmental care. Building character is an effective way to create a better situation. Here education is chosen as a solution to improve the character of environmental care. Education can be a means for future generations to be able to regulate attitudes, values, and abilities to make wise and appropriate decisions in the use of natural resources (Noguiera, 2018: 49). Through education, the future generations may learn how they should act and the values behind it so in the future, they can have a good environmental care character. Once they have a strong character, they can create a better environment and the environmental issues will be solved by the time. Having the same perception on how effective building the character of environmental care is, many countries have concerned on building this character started from young generation through education.

In some countries, one of the environment- based education programs that is widely applied is green school. Green School is an environment- based education program initiated by UNI Europe and the United States for creating the environmentally friendly learning atmosphere that aims to make learners care to the environment (Kocabas & Bademcioglu, 2017: 75). Here, it can be seen that green school has a major influence on the environmental conservation efforts as the essential factor named environmental care character of the people is strengthened through

education. Tucker & Izadpanahi (2017) revealed that students who attend schools designed based on sustainable environments have better environmental awareness than students who attend conventional schools. Thus, education at school that builds characters has the heart in improving the environmental care.

In Indonesia, the government designs *Adiwiyata* program to build and strengthen the environmental care character. This program is implemented in all educational levels. *Adiwiyata* school program is an agreement between the Ministry of Environment and the Ministry of Education and Culture to build awareness of the environment by implementing the program in schools (National *Adiwiyata* Team, 2012: 3). The highest level in the *Adiwiyata* program is Independent *Adiwiyata* School. Independent *Adiwiyata* School is a national *Adiwiyata* school that can provide *Adiwiyata* guidance to other schools, at least ten schools. The target schools need to get *Adiwiyata* awards at the regency/ city level (Indonesian Environment Ministry Regulation Number 5 of 2013). However, currently there are still many *Adiwiyata* schools that have not reached this stage due to the implementation of the curriculum that has not been optimized yet, whereas the vital aspect of *Adiwiyata* program is the curriculum. The curriculum is a component that can influence student achievement, teacher guidance in practice, and a framework for achieving educational goals (Ritter, Small, Mortimer, & Doll, 2017; Yates, 2016). *Adiwiyata* School has its own peculiarities in curriculum management, namely the environment-based curriculum. This curriculum emphasizes the implementation of education that is oriented towards increasing the awareness of the next generation to preserve the environment.

In fact, there are still various obstacles in the implementation of the environment-based curriculum. The goal of the curriculum will not be achieved optimally if its implementation, the important role in determining the success of a curriculum, is not done well. Curriculum implementation can be used as field research for the needs of the curriculum system validation itself (Hamalik, 2013: 23). As a system, the goals, process of the implementation and the components of the curriculum should be in line. The obstacles found in the implementation may hinder the process of achieving the goals. Thus, the problems should be recognized and solved as soon as possible.

The problem was caused by the lack of information about the *adiwiyata* school curriculum so that references were needed regarding the implementation of the *adiwiyata* curriculum. In this regard, the researcher conducted a study related to an Independent *Adiwiyata* State Elementary School in Yogyakarta as reference material on curriculum management for *Adiwiyata* schools. The school has been able to maintain its environmental programs for many years to be able to become a school model through effective curriculum management. Through the implementation of a good and effective curriculum, efforts to improve the character of the environment of the next generation of the nation can be more easily achieved.

By acknowledging how the model school implements the curriculum effectively, the efforts to improve the environmental care character of the next generation can be more easily achieved. Schools and the related parties are well- informed as they have enough information on things that they have done well and the things they lack on. On other words, these findings can be useful as a means of reflection for *Adiwiyata* schools and related parties. Besides, this study may give an insight to those who concern on the environment-based curriculum to do further research.

METHOD

This study used a descriptive qualitative method. This qualitative study was conducted to explore the implementation of the environment-based curriculum of an Independent *Adiwiyata* State Primary Schools in Yogyakarta. These schools have implemented *Adiwiyata* program since 2012 and currently have received the Independent *Adiwiyata* award for being able to maintain the *Adiwiyata* program in a row. The participants of this study were the principals, teachers, school committees, and students of an Independent *Adiwiyata* State Primary Schools in Yogyakarta. Data were collected using in-depth interviews and observation techniques. The instruments used were interview guides and observation guidelines. Data analysis was performed using the Miles and Huberman data analysis model consisting of data reduction, data presentation, and conclusion drawing.

RESULTS AND DISCUSSION

The curriculum is an important aspect that has a strategic role in the education system as a guide in the implementation of this environmental education. In the Environment Ministry Regulation Number 5 of 2013, standards in implementing an environment-based curriculum consist of the ability of teachers to develop environment-based learning and students are allowed to take part in environment-based learning activities. This is related to the important role of the environment-based curriculum. An environment-based curriculum is sought to increase public awareness and knowledge about the environment and biodiversity conservation. Alonso-Yanez (2017) in his research revealed that the implementation of a science education curriculum can help students in understanding knowledge about the environment and determine efforts to overcome environmental challenges in the future.

Based on that, the school needs to provide students with many environmental-based activities and learning materials to give the student experience about environmental management. Related to this thing, there are 5 aspects concerned to meet the standard of curriculum implementation namely: (1) integration of environmental education in the curriculum; (2) development the environmental materials; (3) implementation of environmental-based curricular activity; (4) utilization the environmentally-friendly facilities; and (5) establishment the partnership in curriculum implementation. That aspects have to be considered by every *Adiwiyata* school to implement the environment-based curriculum effectively.

Integration of Environmental Education in the Curriculum

Based on the results of interviews and observations, it was found that environment-based education was integrated into the national curriculum, namely the 2013 curriculum through learning, extracurricular and habituation activities. In this case, education can be a means for future generations to build attitudes, values, and abilities for wise and appropriate decision making in using natural resources (Noguiera, 2018: 49). Therefore, the school determines various efforts to integrate environment-based education to achieve the school's vision, mission, and goals. The school's vision includes the element of environmental management stating "The realization of people who are faithful, devoted, superior in achievement, skilled, character, caring for the environment, and with a global outlook". Based on this vision, the mission is formulated into: "implement environmentally learning in a compulsory, special subject, and extracurricular subjects" and "train independent waste management in extracurricular activities".

On the learning, the material for environment-based education is not delivered through a special subject, but it is integrated into all subjects that are proven through curriculum structure

documents. In the curriculum structure, there must be character education developed in the content of each subject, especially about the environment- based character. It goes the same with the research results of Warju, Harto, Soenarto, & Hartmann (2017) which showed that environmental learning material is integrated into all compulsory subjects as outlined in the curriculum structure. This is following the Indonesian Environment Ministry Regulation Number 5 of 2013. In this regulation, it was stated that the curriculum structure in *Adiwiyata* school contains various compulsory subjects, local content, and self-development related to the environment. In the learning activities, the integration of environment-based education is carried out in accordance with the themes studied by each grade level. The teacher delivers material about the environment according to the theme being studied, for example, as stated by the classroom teachers, that they are trying to develop environmental material following the theme and linking it with the surrounding environment.

Development of the Environmental Materials

Learning material is an essential component of the contents of a curriculum which can be defined as a set of learning experiences that students get through planning in such a way to achieve educational goals (Sudin, 2014). The results of the interview indicated that the environment- based material was taken from the GBIM (the Outline of The Material Content) that was designed for each grade. It contains the environmental learning material that was arranged by the Indonesian Environment Ministry. In learning activities, the environment-based materials are adjusted to the theme being studied. Based on the results of the observations, this integration of environmental material is written in the lesson plan. All of this adjustment is designed in the lesson plan so the learning will be well- planned and well-structured. In the learning activities, teacher also gives advice, stories, and encouragement to students to carry out environmental management activities.

Nevertheless, there are still some teachers who have difficulties in delivering materials about the environment. Some of the teachers interviewed said that sometimes they had difficulty in determining environmental material that was following the learning theme. This phenomenon was also found in the research done by Warju, et al. (2017: 1496) in which some teachers have not been able to integrate environment- based material into the learning. Therefore, principals often assign several teachers to take part in environmental training. The information that they get then has to be conveyed to other teachers. The training is often held by the environmental department both in the district and province level.

Implementation of Environment- Based Curricular Activities

One aspect of implementing an environment-based curriculum is the development of curricular activities namely intra-curricular, extra-curricular and habituation activities. Based on the results of interviews and observations, it can be seen if the teacher strived to provide direct experience to students about environmental management. In learning activities, the teacher seeks to convey environment-based materials in accordance with the basic competence learned. Recorded on the observation, the teacher invited the students to practice directly in managing the second- hand goods and then gave exemplary and advice to be responsible for maintaining the cleanliness.

The extracurricular activity also sought to provide direct experience in managing the environment. The extracurricular activity related to the environment is Independent Waste Management or PSM. In this activity, the students were collecting and sorting the waste, and transforming it into fertilizers using decomposer. The results of managing these fertilizers can

be used to fertilize plants in schools or being taken home by those who need them. Besides, the results of fertilizer processing can also be shown to the public in any exhibitions held.

In the aspect of habituation, the school has various environment-based programs and policies to achieve the school's vision, mission, and goals related to the environment-based character. The environmental programs consist of "sumut gumulai" activities (use your time in ten minutes and the environment will be beautiful) or clean Friday, healthy food through lunch and catering, cleaning competitions that are announced every Monday, and emphasis on plastic waste. These activities provide opportunities for students to be actively involved in environmental management.

The intra-curricular, extra-curricular and habituation activities show that the school seeks to involve the students directly in various environmental activities. In addition, through practical and direct involvement, the students will find it easier to gain meaningful experiences. Following the characteristics of primary school students, children's thinking is limited to concrete objects and experiences (Susanto, 2013: 77). This can be interpreted that primary school students need to be facilitated with concrete objects as a source of learning to learn more optimally. Besides that, every environmental activity held by the school can strengthen the student's environmental awareness. As supported by Tucker & Izadpanahi (2017), they found that students in a school-based environment have good environmental awareness than in conventional schools. Students participated actively in many environmental activities, such as in cleaning the school environment, making solar panels, and the other outing class activities.

Utilization of the Environmentally-Friendly Facilities

Facilities are important in environmentally-friendly learning activities at *Adiwiyata* school. Regarding this, the school provides a variety of facilities that can be utilized for environmental management activities. The facilities consist of a composter, sink for washing hands and eating utensils, a school garden with a variety of plants, a healthy canteen, and a shaded schoolyard. Various facilities can be utilized by the students directly to improve their ability to manage the environment. It shows that the school has tried to meet the standards as an *Adiwiyata* school. In accordance with Indonesian Environment Ministry Regulation Number 5 of 2012, the standard for *Adiwiyata* schools in the management of environmentally friendly supporting facilities is in the form of the availability of environmentally friendly supporting facilities and the quality improvement of the environmentally friendly facilities and infrastructure management.

In addition to providing these facilities, the school also put various efforts to improve the quality of facilities through the RKAS (Activities and the Budget Planning). In this planning, various indicators need to be achieved for strengthening the character of the environment care. The school gives attention to renew, improve, and care to the various types of environmentally friendly facilities by listing them in the budget planning. In addition to providing these facilities, the school also put forth various efforts to improve the quality of infrastructure through the RKAS. In the RKAS various indicators need to be achieved in terms of strengthening the character of the environment. This is illustrated in the following table:

Table 1. List of environmental character strengthening in RKAS

No.	Environmental Character Strengthening	The current state of education	The future state of education	Real Challenge
1	Clean culture	80 % implemented	100% implemented	20 %
2	Healthy, beautiful, cool environment, etc.	75 % implemented	90 % implemented	15 %
3	Sanitation/drainage system	70 % implemented	90 % implemented	20 %
4	Collaboration with relevant institutions in the field of education and health	40 % implemented	70 % implemented	30 %

(Source: Document of RKAS SD Negeri 4 Wates, School Year 2018/2019)

The table shows that efforts to procure and maintain are carried out so that facilities can be used optimally in curriculum implementation. These are the facilities needed so people can use them to improve the environment care character and create a green environment. It is also in line with Tucker & Izadpanahi (2017) showing that the use of various environmentally-friendly facilities can help students to gain direct experience in environmental management. Besides that, Jamaluddin, Fahliza, & Rahmi (2018) also stated that school facilities have the essential effect to create an effective environment-based education.

Partnership in Curriculum Implementation

The school establishes partnerships with various parties to support the implementation of the environment-based curriculum. Based on the results of the interview, it can be seen that the school guarantees partnerships with various parties because of their important role in the successful implementation of the curriculum. The parties involved consisted of parents, community leaders and various related government agencies such as the Office of Environment and local health center or PUSKESMAS. The teacher revealed that parents have an important role in habituating students. Therefore, the teacher strives to establish effective communication to achieve optimal support from parents. While, the partnerships with other instances play a role in the provision of environmentally friendly facilities (composter, trash cans, medical equipment), and help students familiarize themselves with the character of environmental care.

These roles need to be understood and realized by all stakeholders so that they want to be involved and actively participate in the entire of *Adiwiyata* school program. Bartle (in Gichohi, 2015: 13) stated that the stakeholder involvement in the use of existing resources plays an important role in realizing the stated goals. Their active involvement and participation in carrying out their duties and roles and contributing positively to the achievement of the objectives of the *Adiwiyata* school. This is following the research by Bath, et al. (2017: 19) stating that stakeholder empowerment has a signification role to motivate people to participate in environmental program and strengthen their environmental awareness. Besides that, Paparang (2017) also stated that *Adiwiyata* program's goals can be achieved well if all school stakeholders participate in creating an environmental culture.

CONCLUSIONS

Based on the study was done, it is concluded that there are five aspects implemented by the independent *Adiwiyata* Schools revealed. These five aspects are the articulation of the standards in implementing an environment-based curriculum set by the Environment Ministry in which the teachers should be able to develop the environment-based learning and the students are allowed to take part actively in the environment-based learning activities. These five aspects are seen in these conditions:

- 1) Environmental education is integrated into the national curriculum, namely the 2013 curriculum. This integration is carried out through intra-curricular that adjusted with learning theme, extracurricular and habituation activities.
- 2) Materials about environment-based education are delivered following the theme learned. These materials are designed based on the Outline of The Material Content (GBIM).
- 3) Letting the students experience various environmental-based activities held through intra-curricular, extra-curricular and habituation activities has made them involve actively and directly in environmental management.
- 4) Environmentally friendly facilities provide opportunities for students to have direct experiences in managing the environment. Thus, there should be an effort for renewal and improvement listed in the school activity and budget planning (RKAS).
- 5) Collaboration with various parties such as parents, community leaders, and government agencies can increase the effectiveness of curriculum implementation.

By implementing these five aspects, *Adiwiyata* schools can optimally build and strengthen the environment care character of the students nowadays and recognized as the independent *Adiwiyata* school too.

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