

COBOY (Eco Board Play) : An Innovation of Learning Media Based on Environmental Education for Children in Kampung Bojong, Pamagersari Village, Jasinga, Bogor, West Java Province, Indonesia

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ABSTRACT

The problem of waste, and the bad sanitation of the environment in Kampung Bojong, Pamagersari Village, Jasinga Sub-district, Bogor Regency is a complex problem and touches all aspects of life. The destruction of the environment can serve as a link for the development of a chain of social problems, livelihoods and human well-being. These symptoms can be seen from the relationship between poverty with the low quality of the environment, health problems and the emergence of slum areas in Kampung Bojong, Desa Pamagersari, Bogor, West Java. The existence of slum areas can also be caused by the accumulation of contaminated garbage in large quantities caused by the lack of facilities and infrastructure, as well as garbage disposal facilities in the location. In addition, the lack of understanding of the community in managing the surrounding environment also contributed to environmental sanitation problems in Kampung Bojong getting worse. It needs an intensive handling through participatory movements and cooperation of every element of society, especially the role of the young generation. This research is done by making COBOY (Eco Board Play) as a learning media for the children, holding some activities to teach the children about environmental education and doing some pretest and posttest. The research results showed that from 30 participants including children around 5 – 14 years in Kampung Bojong, there is an increase in knowledge and attitude aspect toward the participant about environmental education based on pretest and posttest. It is an uniquely transformation how the attitude of the children can change about environmental activities through a learning media as a learner how we build an innovative education for sustainable development in the future.

Keywords : education, learning media, environment, COBOY.

INTRODUCTION

Environmental pollution is a very impactful problem on human life so that this is potential to produce disasters for now and for the foreseeable future. Pollution is an undesirable change of the environment that is largely a result of human activities (Darmono 1995). The destruction of the environment can be a link for the development of a chain of social problems, livelihoods and human well-being (Siahaan 2004). These symptoms can be seen from the relationship between poverty with the low quality of the environment, health problems and the emergence of slum areas. Slums are areas with high levels of population that have experienced deterioration in quality or having deteriorate on physic, and socioeconomic aspect (UNCHS 1982; in Sochi 1993). In addition, the existence of slum areas can also be caused by the accumulation of contaminated waste in large quantities as a result of uncontrolled population growth (Doxiadis 1968).

Kampung Bojong, Pamagersari Village, Jasinga District, Bogor Regency, West Java, Indonesia is an area of approximately 1100 inhabitants. Kampung Bojong is classified as a slum area because of many activities of the surrounding community who are less concerned about the environment. This can be observed from the presence of mounds of garbage on the banks of the Cikeam River, and dirty sewer channels around the settlement. Cikeam River is often used by the community as a source of life such as for washing and bathing. Environmental pollution by dumping waste into the Cikeam River has been done for years without any participatory awareness from the community to build the good environmental management.

The problem of waste and the bad sanitation of the environment in Kampung Bojong, Pamagersari Village, Jasinga Subdistrict, Bogor Regency is a complex problem and touches all aspects of life. It needs comprehensive handling through participative movement and cooperation from every element of society especially the role of young generation. The young generation is one of the people that will determine the future nation. From that, the author is willing to create an innovation of learning media based on environmental education that named "COBOY (Eco Board Play)". COBOY is proposed to create an educative and fun educational media in the form of a modification to the monopoly game that is environmentally friendly for children in Kampung Bojong, Jasinga, Bogor Regency. The goals of this research is to improve the knowledge and awareness about environmental education to the children and also to make a creative learning media based on environmental education.

METHODS

This research program is done in Kampung Bojong, Pamagersari Village, Jasinga Subdistrict, Bogor Regency, West Java Province Indonesia on March – June 2017. In carrying out this study, several methods were implemented, those are: literature study by reading books or scientific journals and articles that are related to environmental education and learning media. Primary data retrieval is done by doing a series of activities in COBOY programme like socialization, education, action and

advocacy in Kampung Bojong. There is also pretest and posttest to the participants to know about their progress in understanding environmental activities. Beside that, monitoring and evaluation is very important activity in this programme. Monitoring and evaluation activities are conducted on a regular basis once a week, in the third and fourth months.

Table 1. COBOY programme

Activity	Description	Method
<i>Life Motivation and be Healthy action</i>	Activities that provide life motivation and socialization of healthy living to children. The purpose of this activity is to increase the motivation of children in protecting their environment	Presented in visual form of live motivation video and caring attitude towards environmental sustainability
<i>Knowing Your Environment</i>	This activity is done by giving a thorough knowledge about the environmental condition around the children. The purpose of this activity is to improve the motivation and positive attitude of children in protecting their environment.	Focus Group Discussion, Learning by Doing
Belimbing	Environmental action activity by doing tree planting	Field Study and Focus Group Discussion
Saturceria	This activity is intended to provide education related to the love of the environment and instilling clean and environmentally sensitive living conditions in children	Field Study and Learning by Doing
Tematik	the utilization of used goods to make the trash antique and organic potting unique, creative, and multifunctional, with the aim of providing knowledge to the participants related to the utilization of environmentally friendly second-hand	Focus Group Discussion, Learning by doing

	goods, and exercise the creativity of participants in making works.	
Proaktif	Activities for the utilization of used goods such as recycling packets of coffee for bag purposes, and bamboo wicker handicrafts aimed at the participants in order to provide educational utilization of eco-friendly used goods.	Workshop and Puzzle Game
Green Action	Environmental action activity by sorting the garbage in the river bank	Action, and Learning by Doing

RESULTS AND DISCUSSION

The data collected from 30 participants of 5-14 years old children in Kampung Bojong by using knowledge and attitude aspect produced the results as follows :

- a. Assessment at the participant's level of knowledge can be seen from the aspect of knowing the importance of environmental hygiene, the dangers of the dirty environment, the time to maintain the cleanliness of the environment, and the knowledge related to the person who must preserve the environment before and according to activities can be explained in the following results :

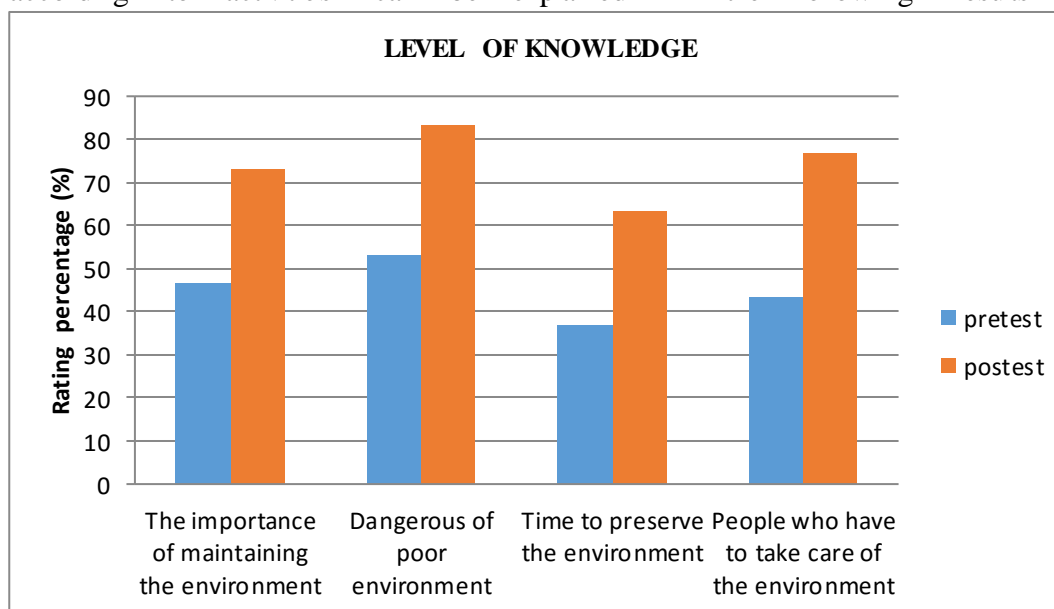


Figure 1. Pretest and posttest charts of participants' level of attitude

Based on the data, it can be seen that the level of knowledge from the participants before and after the activity has increased significantly both from the aspect of knowing the importance of maintaining the environment and knowledge of

environmental hazards dirty. This shows that the program was given a positive impact on the change of knowledge and mindset of participants in managing the environment.

- a. Assessment of the participant's attitude and awareness aspect to the surrounding environment, including the assessment aspect of favoring clean environment, disposing of garbage in place, picking up garbage, and cleaning river participation, can be explained through on the following results below:

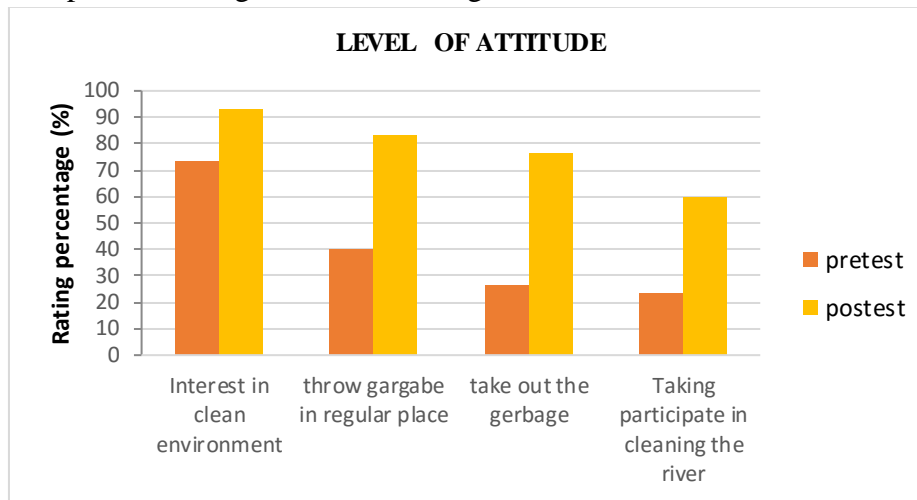


Figure 2. Pretest and posttest charts of participants' level of attitude

Based on the data, it can be seen that most of the community, before the program carried out the disposal of garbage in its place, the garbage collection is scattered and its participation in cleanliness programme is very low. After the activity, it can be seen that there is a significant increase in the four aspects mentioned above. This indicator shows that the level of community participation in maintaining environmental sustainability is increasing. This will certainly support the aspect of sustainability of environmental hygiene activities in Kampung Bojong.

Increased knowledge, understanding, and positive attitude of participants on how to manage the environment is evidenced by the pretest and posttest results as described in Figures 1 and 2. The increase in both aspects is achieved through motivation activities to the participants, conducted through Life Motivation And Be Healthy Action programme.

Implementation Program

Socialization

Socialization activities is conducted by face to face meeting with parents of participants, participants, and community leaders. The result of this activity is positive support from community leaders and participant parents related to programme implementation. This is achieved through the Grand Opening activities attended by participants, community leaders and participant parents. Another result obtained from this activity is the formation of COBOY community that is active in managing waste in Kampung Bojong. The other activity is achieved through COBOY Awards by way of the selection of young environmental leaders to the participants who have the appropriate characteristics to become environmental leaders for other participants.



Figure 3. Socialization activity

Education

Educational activities are conducted with the aim of providing a comprehensive understanding to the participants on how to manage the environment properly and correctly through the application of COBOY game media. The results achieved in this activity is a change in the pattern of positive behavior of participants and increased motivation of participants to maintain and manage the surrounding environment. In addition, participants can create the creation of used goods.. Then, another outcome of this activity is the drafting of the COBOY game manual and a collection of environmental knowledge for participants to empower the surrounding community in managing the environment through a positive environmental action approach.



Figure 4. Education activity

Advocacy

Advocacy activities are undertaken to obtain agreement in implementing the program and regulate the regulation of environmental hygiene activities in Kampung Bojong together with community leaders and Head of Pamagersari Village. The results obtained are the formulation of the draft of environmental hygiene practices to be considered in the determination of Pamagersari Village Regulation (Perdes). In addition, in implementing the development of the program, it also has formed a partnership letter with HIMAGA (Garut Student Association) to make Kampung Bojong as Village Project for similar community service activities.



Figure 5. Advocacy activity

Action

This activity is done by carried out river cleaning action by participants, and activities of utilization of used goods to become creative products that are environmental friendly. The result of action activity is increasing knowledge and attitude to environment such as knowing how to planting good and correct seedlings, able to sort the waste by its kind and able to utilize plastic waste for making pot vertical garden.



Figure 6. Action activity

Monitoring and Evaluation

COBOY monitoring activities is done by contacting the village head about the programme. In addition, monitoring was also conducted by the head of the Rukun Warga 02 with the formation of a draft of environmental hygiene practices in Kampung Bojong which has been endorsed by local stakeholders such as Pamagersari Village Head and RW 02 Chairman who must be obeyed by every community in Kampung Bojong. The results of monitoring during this time indicate that the participants have started to do good actions in maintaining the surrounding environment such as throwing garbage in place, helping the parents in cleaning the house, and trying not to throw garbage into the banks of the river.

Monitoring and evaluation activities is also conducted by Bogor Agricultural University (IPB) to assist the implementation of research programme. The result of this activity is the input from the reviewer in the implementation of the program and the direction for preparation of monitoring and evaluation from Ministry of Higher Education, Research, and Technology (Kemenristekdikti) Republic of Indonesia.

Potential Outcomes and Sustainability

COBOY programme is an educational activity based on environmental awareness for children in Kampung Bojong, Pamagersari Village, Bogor Regency. With this activity, children can gain comprehensive insight and knowledge of the environment and conservation efforts. COBOY activity has also been supported by the existence of a complete game facilities as a medium of environmental counseling for children. In addition to game media, game guide books and pocket book activities are also available to support the sustainability of the COBOY programme.

In developing the program capacity, COBOY has been cooperating with related partners such as Public Relations Bureau of the Ministry of Environment and Forestry Republic of Indonesia (KLHK RI), IPB Mengajar, HIMALOGIN (Agroindustrial Technology Student Association) and HIMAGA (Garut Student Association) for expansion of program benefits. The various partners appreciate and support the smoothness of COBOY programme. KLHK RI will also adopt COBOY game as educational media of environmental counseling to children through government program. In addition, Kampung Bojong will also be used as Village Project of HIMAGA to conduct similar community service activities.

Socialization of the program is one of the most important things in supporting the sustainability of the program. COBOY has done the publication on several mass media such as on Ministry of Higher Education, Research, and Technology (Kemendikbud) website, IPB website, IPB Magazine, Radar Bogor, RRI Bogor and Okezone.com. After disseminating the program, it is necessary to have an institutional process internally in Kampung Bojong. This institutional process can be seen from the creation of environmental sustainability arrangements made by the author with community leaders in order to maintain the commitment of environmental sustainability in the future. The order is also being attempted to enter as a draft of Pamagersari Village Regulation (Perdes). COBOY programme is currently also proposing a draft of intellectual property to the Directorate of Innovation and Research, Bogor Agricultural University in supporting the legality of innovation from the learning media.

CONCLUSION

COBOY program effectively gives positive impact for children of Kampung Bojong in the form of knowledge and attitude improvement to preserve the environment. The activities of socialization, education, advocacy, and action and the use of COBOY learning media for children's learning are very supportive component to help the implementation of the program. In addition, the COBOY program has also worked with several local and national media, related organizations, village governments for regulation and the Ministry of Environment and Forestry Republic of Indonesia to ensure the sustainability of the program in the future.

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