

## IMPLEMENTATION OF ADIWIYATA PROGRAM IN THE EFFORT TO CREATE ENVIRONMENTAL CULTURED SCHOOL IN BANDA ACEH

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**ABSTRACT:** This research examined the implementation of Adiwiyata Program in the effort to create environmental cultured school in Banda Aceh. This research used quantitative study paradigm by using survey technique. This study was conducted in ten schools in Banda Aceh from elementary to secondary school levels by involving 452 respondents, which consist of school principals/vice principals, Adiwiyata coordinators, administrative staff and students. Data collection was done through questionnaire and observation. The result of study showed that in general Adiwiyata Program implementation is in effective category. This described that in general the four components of Adiwiyata Program had been implemented effective. Nevertheless, result of study found various obstacles encountered by school in implementing Adiwiyata Program. This article delve and describe in depth the implementation of Adiwiyata Program, so various obstacles encountered by school can be found out in order to implement Adiwiyata Program in Banda Aceh. It is hoped that the result of study can give insight to stakeholder to take the steps forward in the effort to create environmental cultured school.

*Keywords: Implementation, Adiwiyata Program, Environmental Cultured School*

### 1. INTRODUCTION

In fulfilling their needs human always keep in touch with environment. Therefore, in all activities we should concern about environment protection and management aspects in order to maintain its balance and preservation. Awareness that the earth is the one and only place to live with its potential and its limitation in supporting human life sustainability, should be developed as share commitment. One commitment of international society in maintaining the earth from pollution and destruction is through the implementation of environmental education, which is the key to prepare community with knowledge, expertise, value and attitude to care about environment in order to participate actively in solving environmental problem [1].

In international level, the term environmental education was used for the first time in 1948 in Paris in International Union for Conservation of Nature and Natural Resources meeting [2]. The framework of environmental education emerged from documentation of international conference on environment in Tbilisi, Georgia in 1977 and in Rio de Janeiro, Brazil in 1977 in 1992 [3]. Environmental education is directed to develop understanding, motivation and

skill and accompanied by care toward the use and conservation of natural sources normally, environmental education become very important in the effort in responding globalization power [4].

The main focus of environmental education is to change the behavior to care about environment through knowledge of environment [5]. Environmental education aimed to help individual, community, and society to grow deeper feeling and moral responsibility to the earth and intrinsic wish to make a choice about life style and behavior which comprise three continuity (equity, economy and ecology) [6]. But environmental education not only effective to enhance students' care about environment [7][8]. The weakness at this time are material and method of environmental education which is not applicative, lack of support in solving environmental problem and not include practical things from daily life.

The result of study conducted by [9] in Canada showed that environmental learning or integration of environmental material into natural science and geography have limitation and not effective to enhance students' eco-literacy. This supported by [10] in Canada and study conducted by [11] in Portugal which showed that environmental education had made students to have

high level of environmental education, but it is still need to improve attitude aspect particularly in behavior aspect in order to responsible toward environment. However, according to [1] responsible behavior toward environment more than possessing scientific knowledge about environmental issues. Because of that effective learning practice should be given to develop responsible behavior toward environment and learning environment should give opportunity to students to study outside the class, observe the nature, practice and study to test the issues about environment. To response to this problem then eco School Program is developed [12].

Eco School is the form of environmental education implementation which is implemented in program in school [13]. Eco School program was developed in 1994 on the basis of the need for involving young people in finding solutions to environmental and sustainable development challenges at the local level [14]. Eco School Program is based on interdisciplinary principle, comprehensive and systematic approach, future oriented, relate the local environmental problems to global environmental issue and decision making democratically toward environmental issue by combining cognitive, affective and aesthetic aspects [15].

Eco School Program combine learning and action, so it is effective to change the behavior [1]. When school had been registered to follow Eco School Program, all school members commit to be involved actively in process of developing learning plan which focused on environmental problem and improve school environment [16]. In Indonesia, Eco School Program is implemented since 2006 which is called Adiwiyata Program. Adiwiyata Program is developed by Ministry of

Environmental Affairs and Ministry of Education and Culture with aim to create school members who are responsible in the effort to protect and manage the environment through good school governance to support sustainable building [17].

To achieve the aim of Adiwiyata Program, four components of that program are determined to become wholly unity in achieving Adiwiyata. Those four components are: (1) Environmental policy; (2) Implementation of Environmental Based Curriculum; (3) Participative Based Environmental Activity; and (5) The Management of Eco-friendly Supporting Infrastructure. In Banda Aceh, Adiwiyata Program begin to be socialized and implemented massively since 2010. Until 2017, Adiwiyata Program in Banda Aceh had been followed by more than 50 schools. Based on this, the purpose of this research is to describe in detail and deeply about the implementation of Adiwiyata Program in the effort to create environmental cultured school in Banda Aceh.

## 2. RESEARCH METHODS

This research used quantitative study paradigm by using survey technique. This study is conducted in ten schools in Banda Aceh. The selection of sample school based on criteria: (1) the school had followed Adiwiyata Program for the last five years, (2) the school had win the award as National Adiwiyata; from Indonesia Ministry of Environmental Affairs or Provincial Adiwiyata from Aceh Governor. Respondent/data source of study are school principal/vice principal, Adiwiyata coordinator, teachers, administrative staff and students. For teachers, administrative staff and students, the selection is done randomly in each school.

Table 1. The Numbers of Respondent Based on Status and Origin of School

No	School	Status					Total	(%)
		Principal/Vice Principal	Adiwiyata Coord	Teachers	Administrative Staff	Students		
1	ES 2	1	1	3	1	37	43	9.51
2	ES 16	1	1	3	1	27	33	7.30
3	ES 20	1	1	3	1	23	29	6.41
4	ES 67	1	1	3	1	20	26	5.75
5	JHS 1	1	1	4	2	42	50	11.06
6	JHS 2	1	1	4	2	41	49	10.84
7	JHS 19	2	1	4	2	21	30	6.64
8	JHS Model	2	1	4	2	71	80	17.70
9	SHS 3	1	1	5	2	47	56	12.39
10	SHS 4	1	1	5	2	47	56	12.39
Total		12	10	38	16	376	452	100.00

Note: ES: Elementary School, JHS: Junior High School, SHS: Senior High School

Data collection is done through questionnaire and observation. Instrument of study

is developed based on component and standard of Adiwiyata which is issued by Indonesia Ministry of

Environmental Affairs. Component and standard of Adiwiyata according to Indonesia Ministry of Environmental Affairs Regulation No. 05 Year of 2013 about Adiwiyata Program Implementation Guidance.

Data analysis descriptively toward each component of Adiwiyata Program in this study is done by IBM SPSS 21 software. This analysis comprise mean value, sum, deviation standard, variance, minimum value, and maximum value for each of Adiwiyata Program component.

### 3. RESULTS AND DISCUSSION

Study data about implementation of four component which is obtained from 452 respondents in ten schools in Banda Aceh is analyzed by descriptive statistic by IBM SPSS 21 software. Descriptive statistics analysis aimed to describe various data characteristic such as mean, sum, deviation standard, variance, minimum value, and maximum value (Table 2).

Table 2. Descriptive Statistic of Study Result

Variables	N	Min.	Max.	Sum.	Mean	SD	Var
School Policy	10	92.00	99.00	968.00	96.80	2.25	5.06
Curriculum	10	109.40	124.75	1184.46	118.44	4.28	18.38
Activity	10	74.27	92.60	806.89	80.68	6.23	38.89
Infrastructure	10	100.00	106.00	1036.00	103.60	1.57	2.48
Valid N (listwise)	10						

Based on descriptive statistics analysis, then analysis is done for each Adiwiyata Program components which is explained as follow:

#### 3.1 Environmental Policy Component

Response of respondents' answer in environmental policy instrument for each item moved from score 1 until 5 with the sum of

statement items is 24. The result of study showed that the lowest score for environmental policy scale is 92, and the highest score is 99, with mean of 96.80 and deviation standard of 2.25. Score is categorized into four categories, namely very effective, effective, less effective and not effective. This category is done to find out the score position of each school in continuum line of environmental policy which had been predetermined.

Table 3. Categorization in Environmental Policy Component

No.	Category	Frequency	Percentage (%)
1.	Very Effective (score 97-120)	7	70
2.	Effective (71-96)	3	30
3.	Less Effective (47-70)	0	0
4.	Not Effective (24-46)	0	0
	Total	10	100

Based on Table 3, from 10 schools which were sampled, 7 schools (70%) are very effective in implementing environmental policy, whereas 3 schools (30%) is categorized effective in implementing environmental policy. Schools which are very effective in implementing environmental policy are schools which had implemented most of standard and indicators of environmental policy. The indicators which had been implemented well among others are the socialization of vision, mission and school aim, school curriculum had contain the material which is related with environment, and School Activity and Budget Plan had contain the effort to protect and manage the environment.

Three schools are categorized effective in implementing environmental policy. Those three schools are in effective category because in a whole they had not been maximally in implementing several standards and indicators which have been mentioned earlier. Additionally, those schools had not been utilized external resource persons to enhance environmental learning, school principal and vice principal had not been become resource persons in environmental learning, such as in seminar or workshop, and school had not gave support to community or another school in enhancing the effort to protect and manage the environment.

### 3.2 The Implementation of Environmental Based Curriculum Component

The result of study showed that the lowest score for the implementation of environmental based curriculum scale is 109.40, and the highest score is 124.75, with mean of 118.44 and deviation

standard of 4.28. Score is categorized into four categories, namely very effective, effective, less effective and not effective. This category is done to find out the score position of each school in continuum line of the implementation of environmental based curriculum which had been predetermined.

Table 4. Categorization in the Implementation of Environmental Based Curriculum Component

No.	Category	Frequency	Percentage (%)
1.	Very Effective (score 126-155)	0	0
2.	Effective (95-125)	10	100
3.	Less Effective (64-94)	0	0
4.	Not Effective (31-63)	0	0
Total		10	100

Total of 10 schools (100%) are in effective category in implementing environment based curriculum. Educator staff in general had applied the learning method which involve students actively in learning and they also had developed local issue related with environmental problem in Banda Aceh such as garbage and flood problems. The indicator in curriculum implementation which had not been implemented effectively is that educator staff had not been involve parents and community in environmental learning, and they had not communicated the result of environmental learning innovation. According to them, it is because the limitation of time and there is no willingness/motivation to publish their scientific work. Most of educator staffs only focused on

teaching in class, lack of attention to problems beyond the learning.

### 3.3 Participative Based Environmental Activity Component

The result of study showed that the lowest score for participative based environmental activity scale is 74.27, and the highest score is 92.60, with mean of 80.68 and deviation standard of 6.23. Score is categorized into four categories, namely very effective, effective, less effective and not effective. This category is done to find out the score position of each school in continuum line of participative based environmental activity which had been predetermined.

Table 5. Categorization in Participative Based Environmental Activity Component

No.	Category	Frequency	Percentage (%)
1.	Very Effective (score 105-130)	0	0
2.	Effective (79-104)	4	40
3.	Less Effective (53-78)	6	60
4.	Not Effective (26-52)	0	0
Total		10	100

Total of 6 schools (60%) still less effective in implementing participative based environmental activity, only 4 schools (40%) which can be categorized as effective in implementing participative based environmental activity. School principal's understanding about the importance to build eco-friendly culture which is started from school environment very determine the effort to build school culture which is eco-friendly. In general school had implemented several indicators in participative based environmental activity component, among other is school had involved all school members to maintain school building such

as cleaning the room and mutual cooperation which are done routinely.

The indicator which had not implemented effectively is in general school had not utilized well school's land and facilities in accord with the rule of environmental protection and management. This can be seen from school parks which is poor maintained, lack of activity to cultivate and germinate medicine plants, garbage recycle/management not operated well and there is no activity of compos and biogases making. This is because of budged limitation owned by school and lack of educator staff willingness to be involved

directly in guiding students in outside of class and in managing school's land and facilities.

### 3.4 The Management of Eco-Friendly Supporting Infrastructure Component

The result of study showed that the lowest score for the management of eco-friendly supporting infrastructure scale is 100, and the

highest score is 106, with mean of 103.60 and deviation standard of 1.57. Score is categorized into four categories, namely very effective, effective, less effective and not effective. This category is done to find out the score position of each school in continuum line of the management of eco-friendly supporting infrastructure which had been predetermined.

Table 6. Categorization in the Management of Eco-Friendly Supporting Infrastructure Component

No.	Category	Frequency	Percentage (%)
1.	Very Effective (score 109-135)	0	0
2.	Effective (82-108)	10	10
3.	Less Effective (55-81)	0	0
4.	Not Effective (27-54)	0	0
Total		10	100

Total of 10 schools (100%) are in effective category in managing eco-friendly supporting infrastructure. Some indicators which had been implemented effectively in school is that generally infrastructure in school had been available such as clean water, separated garbage can, septic tank, garbage recycle container/composter, green place, school park, fish pool and biosphere. Then all classrooms in all schools have air and light ventilation naturally. The other indicator which had been implemented effectively is that in all schools there is rule in school facility utilization and management and there is mechanism element in managing and maintaining school facility, which consist of implementer and supervisor, and there had been the effort to utilize electricity, water and office equipment efficiently, even though had not been maximal in its implementation.

The indicator which had not implemented effectively is that there is not available in school waste water management tool, there is no grassland, the small numbers of medicine plants, and there is no green house and facility of biogases making. From observation result, in school canteen there are still found unhealthy food/drink being sold, such as instance noodle and packaged food which pollute the environment, such as plastic and styrofoam. This is because there is no regulation about food/drink standard which are sold in school canteen and there is no supervision of food/drink which are sold.

Education plays an important role in changing one's life. Education is obtained through information transfer inside or outside the classroom [18]. Adiwiyata Program is a comprehensive program in the effort to create environmental cultured and cared school. In Adiwiyata Program, there are four components which should be

implemented concurrently. The implementation of Adiwiyata four component influence the success and failure of Adiwiyata Program policy implementation. The existence of environmental cultured and cared school very helpful in the effort to overcome environmental destruction which happen today and in the future. It is hoped that the existence of this school capable to change the habit and behavior which not respect the environment to become good ethical behavior and care about environment.

Curriculum of Adiwiyata should contain the effort to preserve environmental function, prevent pollution, and environmental destruction in required subject component, and/or local content, and/or self-development. Based on finding of study, in all school, the policy which related to effort of environment protection had been articulated in school policy and had been included in school curriculum. Total of five schools implement Environmental Education by using monolithic approach, which means that school had integrated Environmental Education subject into curriculum as separated subjects in group of required subjects or local content subjects. In Indonesia, the local curriculum becomes an important part of the national curriculum and is given to regions to develop local governments [19]. Total of another five schools use integrated approach, that is the effort to preserve environmental function, prevent pollution, and environmental destruction is integrated into another required subjects, such as Social Science, Natural Science, Geography, Biology, Chemistry, Art, and another subjects.

In implementation of environmental policy in school level, the main implementers who are most decisive is school principal and teachers. The school principal has full authority and



responsibility to conduct all educational activities at their school [20]. School reforms would be even more successful through establishing school principals as professional agents of change, who help teachers transform their instructional behavior and improve learning [21]. Therefore, schools which will implement Adiwiyata Program should have adequate and competent human resources. The result of [22] study support this finding, that school which implement Adiwiyata Program should prepare skillful human resources who can facilitate students to care about environment. This can be done through collaboration with Environmental Office, Board of Education, and another Adiwiyatas in the form of training and workshop.

In learning process, teacher should apply learning approach, strategy, method, and technique which involve students actively. The result of study showed that teacher in general had applied learning approach, method and technique which involve students actively in learning. Some methods which are often applied and very preferred by teachers and students in learning about environment is Problem Based Learning and Outdoor Learning. Problem Based Learning can enhance students' ability to solve environmental problems, particularly environmental problem in Banda Aceh. In learning, teacher relate environmental problem in Banda Aceh, particularly garbage and flood problem with learning material. The result is students not only acquire new knowledge about environment, but also capable to enhance students' attitude and behavior to care about environment. This finding of study corroborate the study finding of [23] that is implementation of Problem Based Learning strategy with help of 6M based garbage management module can enhance students' attitude and behavior particularly in garbage management.

The finding of study showed that not all school members were involved actively in school environmental protection and management. There were still some students who break the rules and not participate actively. In this case, school principal and teachers play big role to give motivation, supervision and role model to students in order that they have eco-friendly behavior. The finding of [24] study support this and stated that school principal and teachers have very strategic role, particularly as role model to students' attitude and behavior. School should instill responsibility in all school members to maintain sanitary, beauty, and comfort without exception. This is one characteristic of participative based activity, in which all school members have same responsibility to support Adiwiyata policy.

Related with the effort to save the resources, all schools have policy to reduce the use

of water, electricity, and office equipment. But in its implementation based on finding in field, the awareness of importance to utilize the infrastructure wisely had not been applied entirely. Basically, the operation of resource and energy conservation policy very depended on the form of policy made, policy socialization, and supervision. The result of [25] [26] [27] [28] [29] [30] [31] study showed that it is possible that all schools which had applied Adiwiyata capable to do energy conservation, but the level of success very depended on the form of policy which is adopted by school and its supervision. Therefore, in order that energy and resource conservation can be success, then tight supervision should be done both by school principal and teachers toward activity which use energy and resources.

Based on finding of study, the availability of school infrastructure had not been able to be utilized maximally to support learning. This is because the lack of school members' care to manage the garbage. The utilization of school infrastructure is an important part and cannot be separated in learning in school. Therefore, in addition of learning facility and equipment, the utilization of learning facility also become important part in learning.

#### 4. CONCLUSION

Based on result of data analysis and discussion, it can be concluded that in general implementation of Adiwiyata Program in Banda Aceh is in effective category, thus all sample schools can be categorized as environmental cultured school. Four components of Adiwiyata in general had been implemented effectively, even though facing various obstacles. Some obstacles faced in implementing Adiwiyata Program in Banda Aceh are (1) There is no enough funding to school to provide and manage eco-friendly supporting infrastructure; (2) There are still teacher who less care about environmental problem and there are still students who break the rule and not participate actively in the effort of environmental protection and management in school; (3) School had not gave maximal contribution to community and another school as the effort to enhance environmental protection and management; and (4) The availability of school infrastructure to support learning had not been utilized maximally, such as composter, school garden and separated garbage bin.

Based on finding of this study, the author give some recommendations as follow: (1) for school principal and teacher, it is hoped that they have high care toward environmental problems, become motivator and role model for all school members to always have eco-friendly attitude and

behavior and supervise school members activity in utilizing school facility; (2) for government, it is hoped that they can enhance the quality and quantity of technical guidance in implementing Adiwiyata Program to schools which are following or will follow Adiwiyata Program; and (3) for parents and community in general, it is hoped that they care and are involved in the effort of environmental protection in school.

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