The School's Policy in Developing Students Ecological Intelligence

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Abstract. The objectives of this research were to describe the efforts of the school in developing ecological intelligence and to calculate how much influence school`s policy of environmentally sound toward the development of ecological intelligence "Adiwiyata" high school students in Pandeglang. The method of this research was descriptive quantitative. The techniques in collecting the data's in this research were observation, questionnaire, interview and documentation, while data analysis technique used correlation coefficient test, simple regression test and coefficient of determination. The subject of this research was two Adiwiyata schools in Pandeglang, Banten Regency with 296 respondents. The Results of this research indicated that the schools have made a policy to develop an ecological intelligence of students as well as there was a significant influence from the school`s policy of environmentally sound toward the development of ecological intelligence Adiwiyata high school students. Other findings showed that the more environmentally school policy applies to the school, then the ecological intelligence of students will be higher. Based on those data's, the researchers recommend the schools to continuously improve and evaluate the policies of the school to support the development of the student's ecological intelligence.

1. Introduction

Environmental damage is largely caused by human. Human dependence on the environment is a major factor in environmental degradation. This is in line with what Keraf [1] says that: "The rise of these natural disasters is a mistake in the way of the human view of nature which refers to the ethics of anthropocentrism". This is supported by Awantara [2] who says that: "Environmental damage occurs when an error is also derived from human behavior to the views and error exploration of natural resources". This perspective led to patterns of human behavior that are exploitative, destructive and do not care about nature, so that by Maryani [3] Excessive exploration, let alone ignore these moral and ethical aspects that cause environmental damage. People who have the anthropocentric worldview according to Baltaci et al. [4] Preserving the environment simply because the environment is important for the survival of humans, especially humans and to improve the quality of human life.

To fulfill the needs of human life, the people exploit the natural resources in the environment, but they often do not pay attention to the consequences of their natural resources exploitation. They only think about the results they obtained much without thinking what will happen to the environment that has been exploited. Excessive exploitation will lead to a decline in the carrying capacity of nature. The desire of every human being to improve the quality of his life is a natural thing that is difficult to avoid, humans always want to meet the needs of his life without thinking about what will happen to

the surrounding environment. However, the degradation quality will happen because of limited natural resources.

In an effort to deal with the increasingly worrisome environmental damage, so it is required to have some people who have ecological intelligence. According to Supriatna [5], a person who has an ecological intelligence is a person who understands that every behavior and action, not only affects himself and others but also on the environment in which he lives. According to Goleman [6] if the emotional and social intelligence describes the ability of a person to understand other people and empathize with their fellow human beings, the ecological intelligence describes the ability to understand the natural system (natural system) with a combination of cognitive skills (cognitive skills) with empathy for all living creatures.

According to Bruyere [7], one effort that can be done in developing the ecological intelligence of students is creating an environmentally sound school policy that incorporates one of the subjects of Environmental Education in the school curriculum, whether integrated with other subjects as well as monolithic or stand-alone. Teaching and learning activities, especially in the subjects of Environmental Education have a strategic role in providing input knowledge about the environment to the students. Lendrawati et al, [8] Explained that Environmental Education has a function to improve understanding of environmental problems. However, Environmental Education alone is not effective in raising students' awareness of the environment. The research result Puk & Behm [9] In Canada shows that environmental studies or incorporating the environmental material into natural science and geography have limitations and are not effective in developing the ecological intelligence of learners. This is further supported by studies Legault and Pelletier [10] In Quebec, Canada and Spinola research [11] In Portugal that environmental education has made students have a good level of environmental knowledge, but still, needs improvement in aspects of attitude and especially aspects of environmentally responsible behavior.

Caring and responsible behavior towards the environment by Ozsoy et al. [12] More than just having scientific knowledge about the environment. Therefore, schools should provide applicable learning to develop environmentally responsible behaviors and learning environments should give students the opportunity to study outside the classroom, observe nature, practice and learn to examine environmental issues. Schools according to Mulyana [13] is a good place and appropriate to develop environmentally responsible behavior. In this regard, planting awareness of the preservation of natural resources and the environment in the school environment needs to be done early on through the formation of school policies that are concerned and environmentally friendly in order to form a sense of respect, possess and maintain natural resources in students. Environmentally-oriented school policies are expected not only to foster students 'knowledge of the environment, but the most important thing is to develop students' attitudes, skills and active participation in environmental conservation and management.

2. Methods

This research used descriptive method. The researchers chose descriptive method because we wanted to reveal the actual problems which often become the hot conversation at the present moment about the environmental problems. Moreover, by using descriptive method it can give a description about school`s policy of environmentally sound and calculate its influence to ecological intelligence of students in Senior High School “Adiwiyata” Regency Pandeglang Banten.

The type of investigation used in this research (types of investigation) was a causal relationship, the type of investigation that aims to determine the magnitude of the effect of the independent variable on the dependent variable. Independent variable in this research was the environmental school policy, while for dependent variable was the ecological intelligence of students.

In this research, the researchers used a quantitative approach (deductive), because this research was presented in the form of numbers meaningful. The quantitative approach is an attempt to measure the variables that exist in the study (variables X and Y variables) to then look for the influence and relationship of the two variables. Furthermore, the subjects of this research were SMA Adiwiyata in

Pandeglang Banten Regency, namely SMA Negeri 1 and 4 Pandeglang. The considerations on choosing those two schools to be our subjects were because those schools have already predicated as an Adiwiyata School, so the environmentally sound school policy is considered better than the result of the school that has not received the title as Adiwiyata School.

The population in this research was students in SMA Adiwiyata Pandeglang Banten regency. The population in detail in this research was students of class XI and XII in SMA Negeri 1 and 4 Pandeglang, each of them was 859 and 725 students. The reason for taking population only class XI and XII was because the students of class XI and XII have been longer in the school than class X so they have got a longer touch in Adiwiyata program. Determination of the number of samples used Slovin formula with 5% precision level, so the samples obtained amounted to 161 and 135 respondents. Data collection techniques used observation, questionnaires, and documentation, while data analysis techniques used statistical parametric test.

The hypothesis of the proposed research, namely: "the more environmentally sound school policy, the higher intelligence of ecological students:, the null hypothesis (H0) there is a significant influence on school policy in developing environmentally sound ecological intelligence cognitive, affective and psychomotor Adiwiyata high school students in Pandeglang Banten" and the alternative hypothesis (Ha) "there is no significant influence of the school policy on intelligence environmentally sound ecological aspects of cognitive, affective and psychomotor learners in high school Adiwiyata Banten Pandeglang". Hypothesis testing was done by interpreting the results of linear regression test. Mechanisms testing was done by comparing the calculated results with figures significance (probability) of 0,05. Decisions were taken using criteria "if the number of significant count <0.05; then H0 accepted", and "if significant numbers count> 0.05; then Ha rejected".

3. Results and Discussion

Statistical test conducted to determine the effect of execution of environmentally sound school policy in developing ecological students is correlation test, simple regression test and test of determination. All three statistical tests were done so that the researchers can interpret the data obtained during the research into information needed to answer the formulation of the problem. The following is the result of statistical test calculations using SPSS 21 software (table 1).

Table 1. Statistical test results of school policy influence on ecological intelligence.

No	Aspect	SMA Negeri 4 Pandeglang			SMA Negeri 1 Pandeglang			Information
		R	R *Square*	Sig. F	R	R *Square*	Sig. F	
1	X-Y_1	0,697	0,485	0,000	0,721	0,520	0,000	SMA Negeri 1 Pandeglang The Highest
2	X-Y_2	0,580	0,337	0,000	0,557	0,311	0,000	SMA Negeri 4 Pandeglang The Highest
3	X-Y_3	0,712	0,507	0,000	0,706	0,498	0,000	SMA Negeri 4 Pandeglang The Highest

The results showed that the variables of environmentally sound school policy have a significant influence in developing the ecological intelligence aspects cognitive, affective and psychomotor learners in SMA Adiwiyata Pandeglang Banten regency. First, based on testing of the linear regression between the variables of school policy environmentally sound with intelligence variable ecological aspects of cognition in SMAN 4 Pandeglang, the correlation coefficient of 0,697 (R2 = 0,485) and significant at the level of 0,000, the next to the affective aspects of the correlation coefficient of 0,580 (R2= 0,337) and significant at the 0,000 level, and the last one aspect of psychomotor obtained correlation coefficient of 0,712 (R2 = 0,507) and significant at the 0,000 level.

Second, testing the linear regression between the variables of school policy environmentally sound with intelligence variable ecological aspects of cognition in SMAN 1 Pandeglang, the correlation coefficient of 0,721 (R2 = 0,520) and significant at the level of 0,000, the next to the affective aspects

of the correlation coefficient of 0,557 (R2 = 0,311) and significant at the 0.000 level, and the last one aspect of psychomotor obtained correlation coefficient of 0,706 (R2 = 0,498) and significant at the 0,000 level.

Based on the criteria used, then the significance of the count of 0.000 <0.005; then H0 is received and Ha rejected. This means that there is a significant influence of environmentally sound school policy in developing the ecological intelligence aspects of cognitive, affective and psychomotor learners in SMA Adiwiyata Pandeglang District. There is a different influence on school policy in developing environmentally sound ecological aspects of cognitive intelligence (X1) effective (X2) and psychomotor (X3) the participants in the respective schools were the subject of research. The influence of environmentally sound school policy on the highest cognitive aspect was achieved by SMA Negeri 1 Pandeglang, while the affective and psychomotor aspect was achieved by SMA Negeri 4 Pandeglang. Overall statistical test results indicated that the most environmentally sound school policies had an effect on the psychomotor aspect of the learner, followed by the cognitive aspect and the last was the affective aspect. Based on test results and interpretation, the proposed hypothesis can be accepted.

The results of this research did not indicate the overall aspects of the ecological intelligence of learners, but only explained how the influence of environmental school policies in developing the ecological intelligence of learners. The ecological intelligence of learners comes not only from school policy. Development of the ecological intelligence of learners can be from family factors, community environment, informal or no formal education, playmates and other influences. These factors have their respective roles in improving the ecological intelligence of learners.

An environmentally sound policy is a rational political decision to encourage the process of investing (developing ecological intelligence) to proceed according to the rules of value in education. Basically, the policy in education is intended for the implementation of education can be realized in accordance with the purpose of education. To improve the ecological intelligence of learners it is necessary to model school management that supports the implementation of Environmental Education. All school children participated in supporting the implementation of school policies that fit the basic principles of the Adiwiyata program, which is participatory and sustainable.

The research findings in the field, environmentally sound school policies that have been applied in SMA 1 and 4 Pandeglang already contains safeguards and environmental management. Environment-based school policies can be seen from the vision, mission and objectives and curriculum that are implemented in schools. For example, can be seen the vision of SMA Negeri 4 Pandeglang is "Becoming a School of Excellence of the Religious and Care for the environment". Environmental elements in the mission SMA Negeri 4 Pandeglang seen on the second point is "Inculcating the values of habituation and sensitivity to care and environmental conservation". Furthermore, the objectives of the schools related to the environment are in the fourth point of "Increasing the comparative advantage as well as competitive schools both locally, regionally and nationally, improving the culture and the role of schools as the center for the development of values and norms of environmental conservation".

Environmentally-oriented school policies require vision, mission and goals and an environment-based school curriculum. These are the cornerstones of the school in carrying out activities in schools. Any policy taken by schools should pay attention to environmental aspects. In addition, schools are also required to facilitate learning or facilities and infrastructure in supporting environmental education as contained in the vision, mission, goals, and curriculum that have been formulated and established in schools.

Furthermore, to support the implementation of such environmentally sound school policies, the school or in this policy stakeholders (principals, teachers and school committees) allocates a school budget of 20-30% of the total budget. The budget is allocated for environmental protection and management activities such as educational activities, curriculum and learning activities, capacity building of educators and education personnel, the provision of environmentally friendly facilities, infrastructure and partnerships and the last is for the development and improvement of school quality.

In an environmentally sound school policy, student involvement is essential in a variety of

environmental protection and environmental management activities in schools, in order to create a sense of belonging, respect, and love for the environment in students and for students to have practical competence in environmental management and protection. The findings of the research, the school has various activities in the protection and management of the environment, such as activities: 1) Maintenance activities/maintenance of school infrastructure by school residents such as class pickets, clean activities, the waste sorting and so forth. 2) Utilization of school land for Environmental Learning, such as plant inventory, nursery, cultivation of plants, school forest, checking the content of dyes and hazardous materials on cafeteria snacks and so forth. 3) Develop environment-based extracurricular activities such as Nature Lovers, PMR/UKS, Scouting, Achievement Sports, Wall Magazine, ICT Club, Paskibra, KIR, Theater Arts, Film, and others. 4) Participate in and carry out various environmental action activities and environmental day commemorations through various activities, for example: campaigns for the use of environmentally friendly modes of transport, painting competitions, photo contests, mading competitions, poetry contests, hygiene contests, writing contests, tree planting, Planting fish seeds, clean environmental action, seminars, environmental theme poster contest, and so forth.

By engaging students actively in the protection and environmental management of schools, schools have not only instilled a caring and environmentally friendly culture in students, schools have directly provided practical learning to students in terms of environmental protection and management. The importance of active student participation is also expressed by Orr [14] That ecological intelligence becomes more difficult, not because at least the book deals with nature, but because there is no chance of direct experience in nature. Learners directly involved in participatory activities generally have better ecological participated compared to learners who are not participating in participatory activities. Involvement of learners in participatory activities has a positive influence in improving the ecological intelligence of the learners themselves. This was confirmed by the results of previous research stating that the participatory-based activities will increase the participation of young people and ecological intelligence [15-17].

In the effort to develop and improve the ecological intelligence of learners, the role of a principal is very important. Principals should be role models and motivators for subordinating as well as learners in performing various activities to improve ecological intelligence. In addition to the headmaster's leadership factor, which also plays an important role in establishing a school culture is the teacher. Teacher's commitment and motivation in learning, teacher discipline and teacher attitudes and behaviors have a huge role in shaping the ecological intelligence of learners. Teachers should be role models for learners, by providing a good example of hope and learners can follow the example of the behavior of teachers and thus learners can imitate the behavior of teachers in care for the environment. Teachers have a strategic position in school education. Teachers must function as role models, not by command and punishment. The teacher takes precautions and creates a conducive atmosphere. It is as expressed by Yandless [18] "Education is about teachers by modeling learners". It shows the teachers act as facilitators of learning once role model emulated by learners.

In addition, of principals and teachers, the role of the family and the surrounding community is crucial to support the successful increase in ecological intelligence. It is as proposed by Utina [19] that synergy between schools, families, and communities in support of improved ecological intelligence is required. The school is a second home for children to develop ability they have, while the family is the primary educational facilities to support the educational success. Schools not only encourage students to have knowledge of existing norms. Learners learn to practice in everyday life, both in school and in their environment including family.

4. Conclusions

Based on the results of research and discussion can be concluded that: (1) the school has the policy to develop an ecological intelligence, including preparation of vision, mission and objectives of the school load protection and environmental management; and (2) There is a significant influence school policy on the development of environmentally sound ecological intelligence students.. First, based on

testing of the linear regression between the variables of school policy environmentally sound with intelligence variable ecological aspects of cognition in SMAN 4 Pandeglang, the correlation coefficient of 0,697 (R2 = 0,485) and significant at the level of 0,000, the next to the affective aspects of the correlation coefficient of 0,580 (R2= 0,337) and significant at the 0.000 level, and the last one aspect of psychomotor obtained correlation coefficient of 0,712 (R2 = 0,507) and significant at the 0,000 level.

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