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Students' Attitude and Behavior toward Waste Management at Elementary School

(Case Study in Musi Banyuasin Regency South Sumatra)

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Abstract

The objectives of this research were to assess: 1) correlation between elementary school students' attitude toward waste management and individual behavior, 2) behavioral difference of the first and fifth grade students. The research was conducted to elementary school students at first and fifth grade in Musi Banyuasin regency, specifically focused on 'Adiwiyata' school candidate, 'healthy' school and school with no category. The data were analyzed descriptively with the percentage of attitude and behavior mean comparison and independent sample t-test. The result of study showed: (1) students' attitude toward waste management does not influence student behavior directly; however, determinant variable such as school environment condition seemed to have indirectly influenced the attitude toward waste management and also students' behavior, as these can be seen at healthy school and adiwiyata school candidate, although not at school with no category. The mean difference between healthy school and adiwiyata school candidate was 0.25 and behavior mean difference was 10.48. The highest difference happened when condition of healthy school was compared to school with no category. The attitude mean difference was 0.34 but the behavior mean difference was 42.99, while the difference between the attitude and behavior between Adiwiyata school candidate and school with no category was 0.09 but the highest mean difference was 32.51%; (2) In terms of students' behavior, there were differences between first and fifth grader caused by some factors such as knowledge, learning experience, and students' age.

Keywords: Attitude, behavior, students, waste management, type of school.

1. Introduction

Waste is a serious regional problem since the amount of it per day is getting bigger and the potency as environment contamination is great. According to Ministry of Environment in 1995, the average urban people in Indonesia produced 0.8 kg waste per day and in 2000, it increased into 1 kg/day. On the other side, the number of population also increased, and it could be predicted in 2020, the waste produced could reach 500 million kg/day or 190 ton/year. With this amount, waste could emit methane of 9500 ton/year. Methane itself has a

power to destruct 20-30 times bigger than CO₂ (JICA and Yayasan Pelangi, 2004). Thus, waste can be a very potential sector and it can accelerate the global warming. Methane gas which is in the atmosphere in 7-10 years term can increase the temperature to 1.3 Celsius per year (Climate Change Scenarios for Indonesia (leaflet). 1999).

The efforts to minimalism the waste amount are through the illumination program and training given to most of the society, as well as the implementation of Environment Education (EE) in formal education. Meanwhile, the solution of waste issue has not shown a great result. For example the waste issue in Jakarta, a flood of waste in Jakarta wasted into Kepulauan Seribu effected the tourism objects which were very beautiful (Detik TV, 2012). Waste issue in Bandung, published lately, Organic waste could reach 60% or 15.000 m³ (Walhi, 2012). According to Minister of State Environmental, when officially announced waste bank in Palembang, said that waste was not only an issue for big cities. "The issue of waste is a serious problem in Indonesia". At the same event, The Mayor of Palembang explained, the waste production in Palembang reaches 520 ton/day. Palembang government made some penetrations to create a clean, green and blue city, such as empowering the society to keep clean environment (Antaraneews, 2012). Meanwhile Musi Banyuasin especially Sekayu city, in 2011 the amount of waste reached 86/m³ per day with the number of population 34.377 people. Nowadays, the waste issue in Musi Banyuasin is in the attitude of society, they like to throw the waste to the river, the garden, and to the swamp area around their house. We should cope with this condition.

The environment damage was caused by the problems of human attitude and behavior to nature. It caused some natural disaster happened lately because of human hands, around 80 % of the disaster caused by human ignorance and greed in expressing and exploiting the nature (Slamet, 2007). This environment crisis can be overcome by changing the human attitude toward fundamental and radical environment. We need new life style, not only individually but also the whole society. To change human point of view toward the nature is through the formal education.

Formal education is the appropriate way to increase the awareness and love to the environment. Environmental Education (EE) roles to ensure the knowledge shape the better students behavior, based on the objective of the education itself.

Environmental education has been applied for 15 years in Indonesia. In that time, it is hoped that students have understood the concept of environment, students and school society can implement in life which is environmentally sound. Since the knowledge which was learned by the students was hoped to shape the attitude and behavior which concern with environment. Behavior is the result of learning process. In that process, it caused the interaction between personal and the surrounding environment. As the result of interaction, the answers can be seen from an individual will be influenced by some matters and events which were experienced by that individual as well as the situation nowadays. Then, the model is deserved to be enviable.

The unsuccessful of Environment Education lately was also delivered by President of Indonesia in commemorating World Environment Day on June 6th 2005 at Istana Negara Cipanas-Bogor. President said that since the independent day until today, we never did a simple but crucial thing concerned to the basic need for living, such as clean air and water as well as a healthy environment for the healthy life. Clean environment can be achieved if we

can manage the waste well. Therefore, we need a good process of education. Whereas, through the process of education, it is hoped that the students can get knowledge, change the attitude and aware manner to the environment. At the Environment Day on June 2006, we had a theme "Prevention of Environment Disaster". The Landslide of waste happened in Leuwigajah landfill, West Java. The theme asked and opened our eyes to be together to prevent the environment damage. At the Environment Day in 2008, with theme "Change the Attitude and Prevent Environment Disaster", President said the same thing. President stated us to have the education as younger as possible to avoid the damage of the environment. We need to prove enough trash can and clean environment at school to avoid the worst environment damage. Meanwhile, on June 5th 2012, we had a theme "Green Economic, Attitude and Increase the Quality of Environment" (Press, Media, and Informer of President Secretariat, 2012). We could see the importance of attitude and behavior in improving this country.

Education is one of the efforts to give knowledge and shape the better attitude for the students. According to the objective of the education itself, researcher conducted it at elementary school, with the consideration; on that age students had the retention to shape attitude and behavior. Behavior is the expression of someone. So if the attitude has been formed, it is hoped that the attitude and behavior can hold out. It means the reaction potential which has been formed in their mind will appear as the behavior to reflection of attitude.

The attitude has become the focus of explanation in social science since 20 century (Ramdhani, 2008). Oxford Learner's Pocket Dictionary (Martin, 1991) stated that attitude came from Italy, attitudinize which means "Way of feeling, thinking or behaving". Free online dictionary, (www.thefreedictionary.com), stated that attitude is a complex mental state involving beliefs and feelings and values and dispositions to act in certain ways.

The understanding of dynamic human attitude was also described by some people like Thurstone and Chave (Mitchell, 1990). They described the definition of attitude as:

The sum total of a man's inclination and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specific topic.

This opinion was differed from Thomas and Znaniecki (1918), they stated if attitude was not only determined by individual psychological internal aspect, but also involve the value from the group. According to Alport (1921), attitude was:

A mental and neural state of readiness, organised through experience, exerting a directive and dynamic influence upon the individual's response to all objects and situations with which it is related.

According to the psychological expert, attitude has correlation with behavior. Some research conducted by Warner and De Fleur (1969) in Ahmadi (2009), there are three postulates correlation between attitude and behavior.

- 1) Consistency postulate: the direct correlation between attitude and behavior.
- 2) Inconsistency postulate: attitude and behavior do not depend on each other.
- 3) Contingent postulate: the correlation between attitude and behavior depend on some situation factors in intervening variable.

Based on contingent postulate, the correlation between attitude and behavior depends on intervening variable. According Allen, Guy, Edgley (1980) in Ahmadi (2009), variable was distinguished into:

- 1) Social Constrains and social Distance
- 2) Situational and personality factors
- 3) Multiple Beliefs versus single belief
- 4) Social factors

Meanwhile, according to Icek Ajzen (Robert Kreitner Angelo Kinichi, 2005), attitude influences behavior, through the intention as the key between attitude and actual behavior. Behavior was formed by attitude which was influenced by three separated but interacting determining factors, someone's attention (planned behavior) to do something (actual behavior). The important is, the model just predicted the behavior under individual control, not the behavior because of the condition out of individual control. The first attitude to behavior refers to output quality, the second is social factor which is subjective norm, and the third is environmental control.

Based on learning theory there are two theories, behavioristic learning theory and social learning theory. In this research, researcher refers to social learning theory from Bandura (1986) in Winarno (2011). Learning is triangle interaction which influences each other and bound environment. Environment factor influenced attitude, attitude influences environment, personal/cognitive factor influences attitude. Cognitive factor includes faith, thinking strategy and intelligence. Personal factor and attitude include learning cognitive process.

Dotted departure from this phenomenon, this research was aimed to figure out the correlation between attitude and behavior, to prove whether there was difference in the study length experienced by students through the waste management behavior, whether there was difference in students' knowledge at healthy school and school with no category toward waste management.

Based on the explanation above, researcher bounded knowledge, students' attitude at elementary school dealing with knowledge, and special students' attitude toward waste management. In this research, researcher also bounded the definition of "waste management", it meant the one which is adjusted with elementary school students' condition, they are the effort to protect environment cleanliness, to use the waste and to prevent throwing the rubbish everywhere, and also the ability to group the waste into organic and inorganic.

2. Materials and Methods

This research was conducted at elementary school in Musi Banyuasin regency. The research was conducted to elementary school students at first and fifth grade in Musi Banyuasin Regency, specifically focused on 'Adiwiyata' school candidate, 'healthy' school and school with no category. The duration of the research was less than two months, started from February to April 2012.

The research was conducted using survey method because this research was used to get the data from authentic places; researcher collected the data using observation (direct observation), questioner and interview (Sugiono, 2007). In this research, there were three

sources of data, (1) personal, (2) place, and (3) paper. Personal source was the person who had a competence to give relevant information about the theme.

In composing the instrument of this research, the procedures were:

Prepare the attitude test grating and artificial instrument which were used to measure behavior. To do behavior observation, researcher conducted three times test to first graders and fifth graders at elementary school which became the sample.

The data analysis in this research used data analysis descriptively to know the correlation between attitude and behavior, t test analysis to see the difference of first graders and fifth graders behavior, t test statistic to know the difference of students' behavior at healthy, Adiwiyata school candidate and school with no catagory. The data analysis used SPSS 17 program for t test analysis.

3. Result and Discussion

The result of data and information from this research can be seen in the table. Then, they were calculated and analyzed to prove hypothesis. The data analysis used the percentage mean correlation and independent sample t test statistic test.

Table 1. Data of Fifth Graders' Attitude and Behavior

No		Attitude	Behavior
1	Healthy school	37.94	92.71
2	Adiwiyata school candidate	37.69	82.23
3	School with no catagory	37.60	49.72

Source: Research Result Data

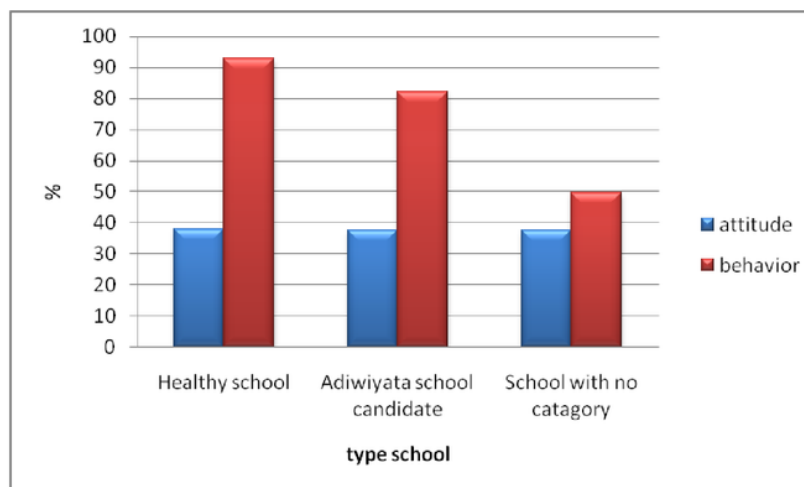
Table 2. Data of First Graders and Fifth Graders' Behavior

School	Treatment	First Graders (%)	Fifth Graders (%)
Healthy school	1	73.33	93.75
	2	76.67	96.88
	3	65.52	87.50
Mean		71.84	92.71
School with no catagory	1	27.03	30.30
	2	54.05	47.06
	3	54.05	70.59
Mean		45.00	49.00
Adiwiyata school candidate	1	50.00	76.70
	2	43.33	83.30
	3	36.67	86.70
Mean		43.33	82.23

Source: Research Result Data

3.1. Hypothesis 1 Discussion

The correlation between students' attitude and behavior from those three schools could be analyzed from the mean difference of attitude and behavior. In seeing the correlation between attitude and behavior, researcher used mean data of fifth graders' behavior since the attitude data which could be achieved through the questionnaire was the fifth graders data. Researcher saw the difference attitude and behavior at each school by using graph.



Source: Excel program

Figure 1. Graph of attitude and behavior correlation

Based on the graph above, number 1 showed the attitude difference toward waste management and behavior between healthy school and adiwiyata school candidate. From the data, the mean difference between healthy school and adiwiyata school candidate was 0.25 and behavior mean difference was 10.48. The highest difference happened when condition of healthy school was compared to school with no category in table 1. The highest difference happened when condition of healthy school was compared to school with no category. The attitude mean difference was 0.34 but the behavior mean difference was 42.99, while the difference between the attitude and behavior between Adiwiyata school candidate and school with no category was 0.09 but the highest mean difference was 32.51%, there was conspicuous difference between behavior mean at healthy school, adiwiyata school candidate, and school with no category.

Based on the result, it can be said that there was correlation between attitude and behavior toward waste management was valid at healthy school and adiwiyata school candidate. But this condition was not valid if we compared between healthy school and adiwiyata school candidate or between adiwiyata school candidate and school with no category. It meant this correlation condition could not be generalized. According to Warner and De Fleur (1969) in Ahmadi (2009), there are three postulates in attitude and behavior correlation. From the postulates, we can see that attitude was not related directly to behavior. Contingent postulate: students' attitude toward waste management does not influence student behavior directly; however, deterrent variable such as school environment condition seemed to have indirectly

influenced the attitude toward waste management and also students' behavior, as these can be seen at healthy school and adiwiyata school candidate, although not at school with no category.

Meanwhile, according to Icek Ajzen, attitude influenced behavior determined by intention and condition. Based on the analysis result with artificial instrument and school environment observation which were done by researcher could analyze situation and school environment condition. Healthy school is a school which has cleanliness standard and school health program appropriate with the standard of three departments; they are Health Department, Department of Religion, Department of Education and Culture. Adiwiyata school candidate or we can say environmental school is program appropriate with the standard of two departments. The environment condition like this can influence students' behavior toward environment cleanliness. School with no category is a school which does not meet the two standards, they still have double shift since big number of students and lack of classroom. From this condition, the control of environment is less than the other two schools. It can influence behavior.

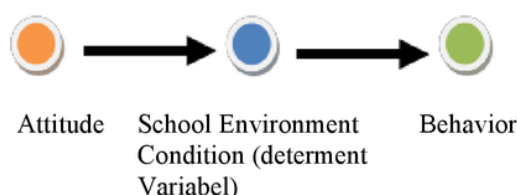


Figure 2. Correlation between attitude and behavior

3.2 Hypothesis 2 Discussion

Ho: $\mu_a \geq \mu_b$, there was no difference in first graders and fifth graders' behavior toward waste management.

Ha: $\mu_a < \mu_b$, there was difference in first graders and fifth graders' behavior toward waste management.

Table 3: Behavior mean from program SPSS. 17

		7 N	Mean	Std. Deviation	Std. Error Mean
Behavior	First Grade	9	53.4056	16.48739	5.49580
	Fifth Grade	9	74.7422	22.33962	7.44654

Source: SPSS 17.0

Analysis

Fifth graders' behavior mean toward waste management is better, it was 74.74 with deviation standard 22.34 and mean standard aberration = 11.38, compare with first graders' behavior mean = 53.41 with deviation standard 16.49 and aberration mean = 5.50.

2
Table 4: Independent samples test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Behavior	Equal variances assumed	0.638	0.436	-2.305	16	0.035	-21.33667	9.25499	-40.956	-1.717
	Equal variances not assumed			-2.305	14.721	0.036	-21.33667	9.25499	-41.096	-1.578

From table 4, we got $F=0.638$ ($p=0.500$) since $p=0.436 < 0.05$, so there was no difference in first and fifth graders' waste management behavior score variant. In other words, the variant was homogeneous. Since the homogeneous data, equal assumed variances data was used, $t=-2.305$, $df=16$ ($p=0.035 < 0.05$) so H_0 was rejected. It can be concluded that there was difference in first and fifth graders' waste management attitude. T score was counter -2.305 (negative), it meant first graders' waste management attitude was worse than fifth graders. It can be seen in table 3; descriptively, first graders' waste management attitude was 53.41 and fifth graders' was 21.34.

From the result above, there was difference in first and fifth graders' attitude statistically, it happened because there were differences in: knowledge, learning experience, and students' age. There was 4 years length difference between first and fifth grade. It can influence students' behavior. Bandura stated in his famous theory about knowledge difference, fifth graders follow environmental education longer than the first graders. Fifth graders' learning experience was more than first graders. Fifth graders were also older 4 years than first graders. Based Theory of Bandura, this factor influence difference in first and fifth graders' attitude.

Based on Social Learning Theory, it was stated that environment influences behavior, behavior influences environment, cognitive/personal factor influences behavior. Cognitive factor includes faith, thinking strategy and cleverness. Personal and behavior factor toward waste include the process of learning cognitive in this case about waste management. From the difference of grade and age, cognitive factor between first and fifth graders were different. Generally, fifth graders had higher cognitive/knowledge toward waste management than first graders. It was because fifth graders' learning experience was longer than first graders. Based on this social learning theory, it can be assumed that fifth graders' waste management behavior was higher than first graders. Statistically, there was difference in fifth and first graders behavior.

4. Conclusion

Based on the research result data analysis, it can be concluded:

1. Students' attitude toward waste management does not influence student behavior directly; however, deterrent variable such as school environment condition seemed to have

indirectly influenced the attitude toward waste management and also students' behavior, as these can be seen at healthy school and adiwiyata school candidate, although not at school with no category. The mean difference between healthy school and adiwiyata school candidate was 0.25 and behavior mean difference was 10.48. The highest difference happened when condition of healthy school was compared to school with no category. The attitude mean difference was 0.34 but the behavior mean difference was 42.99, while the difference between the attitude and behavior between Adiwiyata school candidate and school with no category was 0.09 but the highest mean difference was 32.51%;

2. There was students' behavior difference between first and fifth grader, with $t=-2.305$, $df=16$ ($p<0.05$). Descriptively, mean of first graders' behavior waste management was 53.4056 and fifth graders' was 74.7422. students' behavior, there were differences between first and fifth grader caused by some factors such as knowledge, learning experience, and students' age.

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