

The Relationship between Environmental Concern Attitudes and Elementary School Students' Science Learning Outcomes

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Abstract

Objective: This study aims to analyze the relationship between environmental awareness and science learning outcomes of elementary school students in Madiun City. Environmental awareness is an important factor in science education, which is expected to increase students' awareness and understanding of science concepts related to the environment. **Novelty:** This study highlights the impact of environmental awareness on science learning outcomes, emphasizing its role in enhancing students' understanding and academic achievement, which has not been extensively explored in the context of elementary education in Madiun City. **Methods:** The research method used is quantitative with a correlational approach. The research sample consisted of elementary school students in several schools in Madiun City who were selected randomly. Data were collected through an environmental awareness questionnaire and a science learning outcome test. Data analysis used the Pearson correlation test to determine the relationship between the two variables. **Results:** The results showed that there was a positive and significant relationship between environmental awareness and students' science learning outcomes. The higher the students' environmental awareness, the better the science learning outcomes they obtained. **Conclusion:** This finding indicates that strengthening environmental awareness in science learning can contribute to improving students' understanding and academic achievement.

Keywords: Elementary School, Environmental Awareness, Science Learning Outcomes.

INTRODUCTION

Global environmental issues are often heard lately such as illegal logging and excessive exploitation of natural resources (SDA) causing severe environmental damage without sustainable protection. Rapid technological developments in various fields have positive and negative impacts on the environment. The negative impact is environmental damage which leads to a decrease in environmental quality (Nasution, 2016).

Attitude is a state of mental readiness to carry out a certain action in a situation where the situation arises. Attitude shows a person's willingness to do something, not actual behavior. Everyone reacts differently to stimuli. This is due to several factors that exist in each individual such as differences in skills, interests, experience, knowledge, intensity, emotions and also the surrounding situation.

In the phrase "care for the environment" there are three terms, namely attitude, care and environment. Therefore, the concept of caring for the environment can be seen from its basic meaning, namely attitude, care and environment. First, attitude means behavior, body movements, behavior in the big Indonesian dictionary. Ibing (2009) states that attitude is a thought, behavior, and feeling that motivates us to behave if we like or dislike something. So, attitude is a person's response to stimuli carried out by others. Second, caring in the big Indonesian dictionary means paying attention, being concerned about paying attention to Deviant et al. (2020) caring is caring about something or someone else. So people who have a caring attitude are people who pay attention to the object. Caring is not only about the environment but also about other people, the surrounding community and others. Third, environment means a place that influences human growth (Ginanjari, 2013). Fadlilah & Khorida (2013) define environment as a place or atmosphere (condition) that can influence human growth and development. The environment is very important for humans, preserving the environment properly requires an environment Highly conscious attitude. If the words attitude, care and environment are combined, it can be interpreted as behavior that pays attention to everything that needs to be maintained in the surrounding environment.

Caring for the environment is an attitude and action that always tries to avoid environmental damage and develop efforts to repair damage to nature/health that has occurred (Lestari & Hidayati, 2018). By protecting the environment, students understand not only the importance of protecting the environment around them, but also the importance of maintaining their own health and that of others. The practice of encouraging curiosity and concern for the environment can be implemented through the right learning model. This attitude is gradual.

Caring for the environment is an attitude and action whose goal is always to prevent environmental damage and try to repair damage to nature that has occurred (Asmani, 2013). This attitude must become a good habit for the younger generation (Rahmawati & Suwanda, 2015) so that it must be developed early on as a prospective generation of elementary school students who will actively become agents of change. . This good habit can be implemented through environmental protection learning.

According to Asep and Haris (2009), learning outcomes are the achievement of behavioral changes in the cognitive, affective and psychomotor domains of learning outcomes achieved within a predetermined period of time. The same thing was also stated by Reigeluth (1993): learning outcomes are observable behaviors that describe learning outcomes. Winkel (2005) also includes the definition of learning outcomes, where learning outcomes are

individual learning outcomes that include cognitive, sensorimotor and effective dynamics skills. For example, teachers must know the learning outcomes and progress of students who transfer from other schools before moving to their current school. Things that need to be known are the lessons mastered, learning skills. Natural Science (IPA) is a science that studies natural phenomena in both living and non-living things (Widhy, 2013), living things and the natural environment. In line with the opinion, Asrizal (2018) stated that science learning involves a real-world learning process, meaning that this knowledge can be implemented in the environment so that students' thinking skills develop as much as possible from the natural environment. So, IPA is a science that studies living things, inanimate objects and their symptoms.

Science learning is learning that emphasizes more on understanding the environment in terms of physics, chemistry, and biology (Asrizal, 2019). All school residents can participate in the implementation of ecological education. There are many problems in learning in the current school environment. First, students who do not understand the concept of the environment, the method of implementing learning with environmental education is not applied in everyday life, school children's ignorance about the environment, inadequate facilities and infrastructure for implementing environmental education, and a lack of caring attitude towards the natural environment of students. Based on the description above, the focus of this study is the relationship between environmental care attitudes and science learning outcomes of grade 3 students of SDN 01 Taman. The purpose of this study is to determine the relationship between environmental care attitudes and science learning outcomes of grade 3 students of SDN 01 Taman.

RESEARCH METHODOLOGY

This research is a correlational research, according to Arikunto (2013) correlation research is part of quantitative research that aims to determine the degree of relationship between two or more variables without making changes, additions, or manipulation of existing data. Thus, the purpose of this correlation research is to see the relationship between two variables, namely variable X and variable Y, where variable X is the attitude of caring for the environment and Y is the result of science.

The research was conducted at SDN 01 Taman Madiun, precisely at Jl. Kemiri No.1, Taman, Kec. Taman, Madiun City, East Java-63131. The reason for choosing this location is because SDN 01 Taman is one of the highly accomplished Adiwiyata schools, and prioritizes the preservation of the school environment and also the cleanliness of the school environment. In addition, students who enter SDN 01 Taman are selected students who not all students can enter SDN 01 Taman, these students are selected through online tests, so that these students adapt and are motivated by the learning process at SDN 01 Taman.

The data collection method using the explanatory survey method was conducted in class 3 of SDN 01 Taman Madiun. A survey is a study that takes samples from a population and uses a questionnaire as a data collection tool, while an explanatory study is a study that tests a theory or hypothesis to support or even refute existing theories or research findings. So, explanatory investigation is a method to explain the causal relationship between research variables through hypothesis testing. This study uses descriptive statistical data analysis to provide a number of

data collected in the study, in order to get an idea of the status of the research subjects through samples or population data as not conducting analysis. and draw valid conclusions for the general public.

RESULTS AND DISCUSSION

Descriptive Analysis Results of Environmental Care Variables

Environmental care attitude questionnaire data can be described with the help of the IBM SPSS Statistics program. The results of descriptive variable measurements are presented in Table 1 below which summarizes the description of environmental care attitude data that has been classified based on the Likert scale, statistical descriptions with minimum, maximum, mean and standard deviation score measurements.

Table 1. Descriptive Statistics of Environmental Concern Attitudes

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
Environmental Care Attitude	21	36	108	144	2931	139.57	7.922
Valid N (listwise)	21						

Table 1 shows that the variable of learning discipline with the number of data (N) of 21 has a maximum score of the Environmental Care Attitude questionnaire of 144 while the minimum score is 108 with a difference between the maximum and minimum scores of 36, an average of 139.57 and a standard deviation of 7.922. The following table and frequency distribution diagram of the categorization results from the analysis of Environmental Care Attitude class 3 can be displayed as follows.

Table 2. Frequency Distribution of Environmental Care Attitude

CRITERIA	CATEGORY	F	PERCENTAGE
>147,49	Very high	0	
139,57-147,49	High	16	76,19
131,65-139,57	Low	4	19,05
<131,65	Very Low	1	4,76

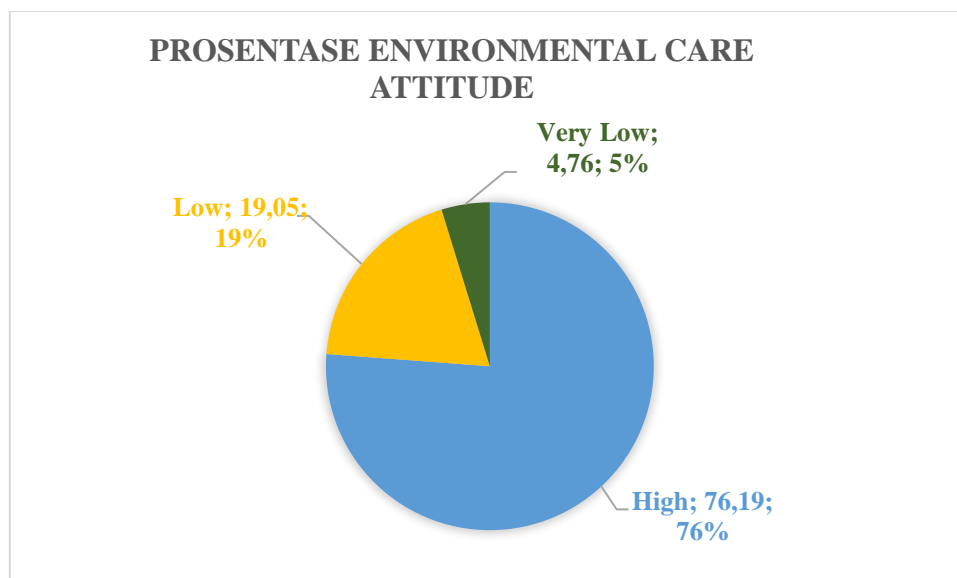


Figure 1. Environmental Care Attitude Questionnaire Diagram

From the description table of the measurement of students' environmental care attitude above, it can be seen that students who have environmental care attitude in the very high category are 0 students with a percentage of 0%, students who have environmental care attitude in the high category are 16 students with a percentage of 76%, students who have environmental care attitude in the low category are 4 with a percentage of 19%, students who have environmental care attitude in the very low category are 1 with a percentage of 5%. Thus, the majority of students in grade 3 of SDN 01 taman who have environmental care attitude are in the high category.

Results of Descriptive Analysis of Science Learning Outcome Variables

Statistical data analysis of science learning outcome variables can be described with the help of the IBM SPSS Statistics program. The results of descriptive measurement of variables are presented in Table 4.6 below which summarizes the Figures of science learning outcome data that have been classified based on Very high, High, Low, Very Low, statistical descriptions with minimum, maximum, mean and standard deviation scores.

Table 3. Descriptive Statistics of Science Learning Outcomes

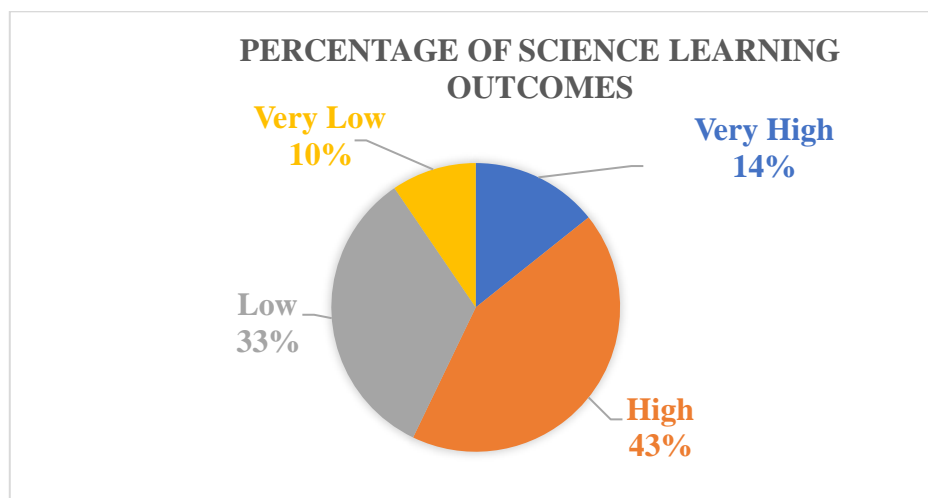
Descriptive Statistics							
	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
SCIENCE LEARNING OUTCOMES	21	15	80	95	1849	88.05	3.761
Valid N (listwise)	21						

Table 3 shows that the variable of learning discipline with the number of data (n) of 21 has a maximum score of science learning outcomes of 95 while the minimum score is 80 with a difference between the maximum and minimum scores of 15, an average of 88.05 and a standard deviation of 3.761. The following is a table and a frequency distribution diagram of the results of the categories from the analysis of environmental care attitude class 3 as follows.

Table 4. Frequency Distribution of Science Learning Outcomes

CRITERIA	CATEGORY	F	PERCENTAGE
>91,90	Very high	3	14,29
88,10-91,90	High	9	42,86
84,29-88,10	Low	7	33,33
<84,29	Very Low	2	9,52

From the table of description of science learning outcomes measurement above, it can be seen that students who have science learning outcomes in the very high category are 3 students with a percentage of 14%, students who have science learning outcomes in the high category are 9 students with a percentage of 43%, students who have science learning outcomes in the low category are 7 with a percentage of 33%, students who have science learning outcomes in the very low category are 2 with a percentage of 10%. Thus, the majority of students in grade 3 of sdn 01 taman who have environmental care attitude salatiga are in the high category.

**Figure 2.** Diagram Science Learning Outcomes

Hypothesis Testing Results

a. Normality Test

In the normality test, the data obtained from the research results were then calculated using the IBM SPSS Statistics program. The normality test used in this study was the One Sample Kolmogorov-Smirnov Test. In this study, if the significance of $p < 0.05$ or 5%, the data is not normally distributed, and vice versa, if the significance of $p > 0.05$ or 5%, the data is normally distributed. The results of the normality test of the measuring data for each variable of environmental care attitude can be seen in Table 5 below.

Table 5. Statistical Test of Normality of Environmental Care Attitude Data
One-Sample Kolmogorov-Smirnov Test

			ENVIRONMENTAL CARE ATTITUDE
N			21
Normal Parameters ^{a,b}	Mean		139.57
	Std. Deviation		7.922
Most Extreme Differences	Absolute		.185
	Positive		.185
	Negative		-.177
Test Statistic			.185
Asymp. Sig. (2-tailed) ^c			.059
Monte Carlo Sig. (2-tailed) ^d	Sig.		.057
	99% Confidence Interval	Lower Bound	.051
		Upper Bound	.063

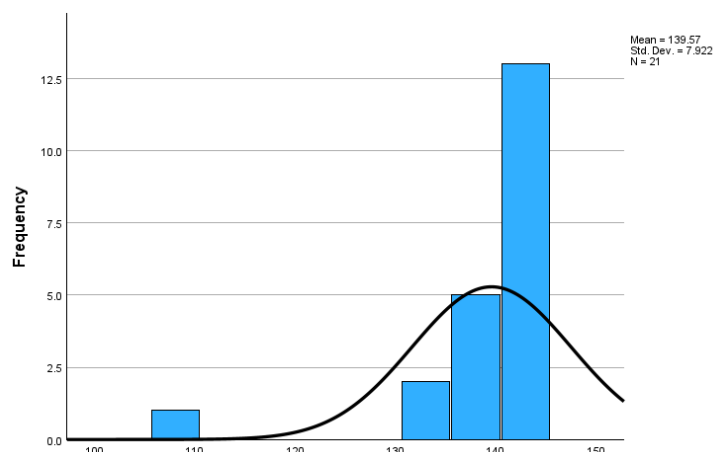
a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 334431365.

The table describes the results of statistical tests on the distribution of Civics learning discipline data using the One Sample Kolmogorov-Smirnov Test technique. From the table, it can be seen that the mean = 139.57, standard deviation = 7.922 and the two-tailed asymptotic significance level with a 5% confidence level (asympt. Sig. 2-tailed) is 0.059. If the hypothesis is formulated, H_0 is a normal distribution, and H_a is an abnormal distribution. Then H_0 is accepted if $p > 0.05$, and H_0 is rejected if $p < 0.05$. The table above shows that $p = 0.059$. This means that based on the calculation of a 5% chance of error, $p = 0.059 > 0.05$. So H_0 is accepted, meaning that the Environmental Care Attitude variable is normally distributed. The normality figure for the distribution of learning discipline data can be seen in the graph below.



Graph 1. Distribution Curve of Environmental Care Attitude Variable

The normality test used in this study is the One Sample Kolmogorov-Smirnov Test. In this study, if the significance is <0.05 or 5%, the data are not normally distributed, and vice versa, if the significance is >0.05 or 5%, the data are normally distributed. The results of the normality test of the measuring data for each Science Learning Outcomes variable can be seen in Table 6 below:

Table 6. Statistical Test of Normality Data Science Learning Outcomes
One-Sample Kolmogorov-Smirnov Test

			SCIENCE LEARNING OUTCOMES
N			21
Normal Parameters ^{a,b}	Mean		88.05
	Std. Deviation		3.761
Most Extreme Differences	Absolute		.124
	Positive		.124
	Negative		-.114
Test Statistic			.124
Asymp. Sig. (2-tailed) ^c			.200 ^d
Monte Carlo Sig. (2-tailed) ^e	Sig.		.520
	99% Confidence Interval	Lower Bound	.507
		Upper Bound	.533

a. Test distribution is Normal.

b. Calculated from data.

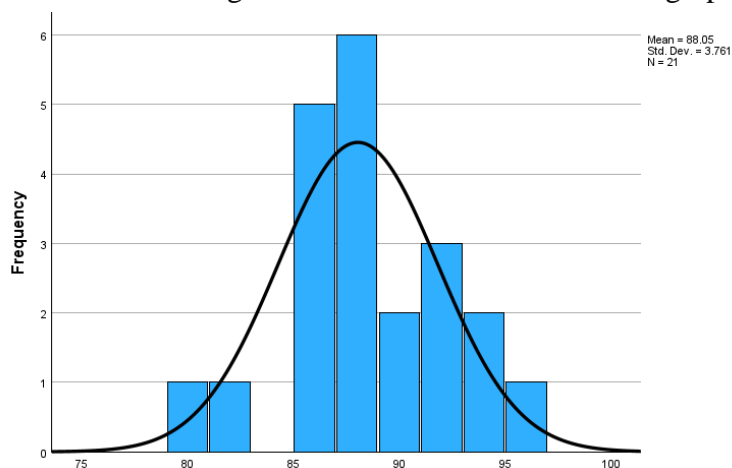
c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 743671174.

The table describes the results of statistical tests on the distribution of Civics learning discipline data using the One Sample Kolmogorov-Smirnov Test technique. From the table, it

appears that the mean = 88.05, standard deviation = 3.761 and the two-tailed asymptotic significance level with a 5% confidence level (asyp. Sig. 2-tailed) is 0.200. If the hypothesis is formulated, H_0 is a normal distribution, and H_a is an abnormal distribution. Then H_0 is accepted if $p > 0.05$, and H_0 is rejected if $p < 0.05$. The table above shows that $p = 0.200$. This means that based on the calculation of a 5% chance of error, $p = 0.200 > 0.05$. So H_0 is accepted, meaning that the Science Learning Outcomes variable is normally distributed. The normality figure for the distribution of learning outcome data can be seen in the graph below:



Graph 2. Distribution Curve of Science Learning Outcomes Variables

b. Linearity Test

The linearity test is used in this study to determine the relationship between the independent variable, namely Environmental Care Attitude, and the dependent variable, namely Science Learning Outcomes.

Table 7. ANOVA Table

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Science Learning Outcomes * Environmental Care Attitude	Between Groups	(Combined)	147.595	9	16.399	1.333	.322
		Linearity	80.785	1	80.785	6.565	.026
		Deviation from Linearity	66.810	8	8.351	.679	.703
	Within Groups		135.357	11	12.305		
	Total		282.952	20			

Based on the results of the linearity test using SPSS, the research results obtained showed a linearity of $0.026 < 0.05$ and a deviation of $0.703 > 0.05$ so that linearity was met.

c. Hypothesis Testing

The test results for this study can be seen in the table below.

Table 8. Coefficients of Simple Regression Analysis Test Results
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	52.638	12.870		4.090	<.001
	Environmental Care Attitude	.254	.092	.534	2.755	.013

a. Dependent Variable: SCIENCE LEARNING OUTCOMES

From the data, it is known that the t count value = 2.755 > t Table 1.725 and the significance value is 0.013 < 0.05, so H_0 is rejected and H_a is accepted, which means that it can be concluded that the variable X (Environmental Care Attitude) has an effect on the variable Y (Science Learning Outcomes). The output data above, obtained a constant value (a) of 52.638, while the value (b / regression coefficient) is 0.254, so the regression equation is as follows:

$$Y = a + bX$$

$$Y = 52.638 + 0.254X$$

The relationship between Environmental Care Attitude and Science learning outcomes with the equation $Y = 52.638 + 0.254X$. Thus, the form of the relationship between Environmental Care Attitude shows that every increase in one Environmental Care Attitude score can cause an increase in Science Learning Outcomes of 0.254 at a constant of 52.638. The regression equation that has been found can be used to predict how individuals in the dependent variable (learning outcomes) will occur if individuals in the independent variable (Environmental Care Attitude) are set at $Y = 52.638 + 0.254X$.

Table 9. Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.534 ^a	.286	.248	3.262

a. Predictors: (Constant), ENVIRONMENTAL CARE ATTITUDE

The r square (r^2) test is used as a calculator to determine how much influence results are caused by environmental care attitude with science learning outcomes. R square (determination coefficient) is 0.286 which means the influence of variable x with variable y is 28.6%. While to see the relationship (correlation) can be seen through table r of 0.534 which means that the results contain the meaning that there is a relationship between environmental care attitude (x) and science learning outcomes (y). So it can be concluded that variable x with variable y is included in the medium category.

Discussion

Environmental care attitude is an action or attitude that aims to prevent or repair environmental damage around so that it does not get worse and can create a comfortable and prosperous environment. By protecting the environment, students understand not only the importance of protecting the environment around them, but also the importance of maintaining their own health and that of others. The practice of encouraging curiosity and concern for the environment can be implemented through the right learning model. This attitude is gradually or simultaneously manifested in the behavior of students. Science learning outcomes are changes in behavior that occur as a result of an individual experiencing the process of learning science through three aspects, namely cognitive, affective, and psychomotor aspects, students are said to have succeeded in learning if they have achieved completion of the three aspects. Aspects of learning outcomes can be classified into three domains, according to bloom in sudjana (2010), namely the cognitive domain, affective domain and psychomotor domain. The cognitive domain refers to intellectual learning outcomes consisting of six aspects, according to bloom in sudjana (2010), namely: (1) knowledge or memory, including the ability to remember things that are learned and are still in the individual's memory; (2) understanding, includes the ability to grasp the essence of the meaning of things learned; (3) application, namely the ability to apply methods and rules to deal with existing and real problems; (4) analysis involves the ability to break down the whole into parts so that it can be understood well; (5) synthesis is the ability to form new patterns; (6) evaluation involves the ability to form opinions about several problems based on certain criteria.

The affective domain is concerned with attitudes consisting of five aspects, according to bloom in sudjana (2010), namely: (1) acceptance, includes sensitivity to certain things and the willingness to pay attention to these things. (2) participation is the desire, the desire to pay attention to and participate in a certain activity. (3) evaluation, is appreciation, appreciation, recognition, attitude formation. (4) organization is the ability to form a value system as a guide and guide for life. (5) lifestyle formation, namely. The ability to live based on values and form them into a value model for personal life.

Psychomotor domain related to learning outcomes of skills and ability to act. There are six aspects of the psychomotor domain, according to bloom in sudjana (2010), namely: (1) reflex movements, (2) basic movement skills, (3) harmony or accuracy, (4) complex skill movements, (5) expressive and interpretative movements. According to damiati, et al. (2017) attitude components include three aspects, namely cognitive, affective and conative components. The cognitive component is in the form of understanding, knowledge, views and beliefs of a person towards the object of attitude. The affective component is a feeling of pleasure or displeasure towards the object of attitude. The conative component is the tendency to act towards the object of attitude which shows the intensity of attitude, namely the intensity of action or behavior of a person towards the object of attitude. This section is the initial steps in analyzing the results data that have been obtained and processed descriptively. The main focus that will be seen is the relationship between environmental care attitudes and science learning outcomes of grade 3 students of sdn 01 taman. In the attitude indicator, the cognitive/knowledge domain according to bloom in sudjana (2010). Namely (1) knowledge; (2) understanding; (3) application; (4) analysis; (5) synthesis; (6) evaluation. In the affective domain according to sudjana (2010), namely: (1) accepting; (2) responding; (3) assessment;

(4) organization; (4) characteristics. In the conative domain according to sudjana (2010). Namely (1) perception; (2) readiness; (3) guided response; (4) mechanism; (5) complex visible response; (6) adjustment; (7) creation. The results of the study on the environmental care attitude variable with science learning outcomes obtained results that overall stated the highest frequency in the environmental care attitude variable in the high category, namely 16 students with a percentage of 76.19% and the least frequency was in the very low category, namely 1 with a percentage of 4.76%. The results of data analysis show that there is a relationship between environmental care attitude and science learning outcomes. These results are very logical because learning outcomes are the abilities that students have after receiving their learning experiences (nana sudjana, 2006).

Based on the results of the research that has been done, the results obtained that the regression equation model $y = 52.638 + 0.254x$ explains that every increase of 1 score / value of variable x (environmental care attitude) will result in an increase in the number / score of variable y (science learning outcomes) by 0.254 at a constant of 52.638. The magnitude of the science learning outcomes variable is determined by the environmental care attitude variable and can be known by squaring the simple correlation coefficient value. The result of squaring the determination coefficient value is 0.286, which means that the influence of variables x and y is 28.6% statistically this value provides an understanding that approximately 28.6% of the variation in changes in science learning outcomes is determined or influenced by environmental care attitude and the rest is influenced by other influences. Furthermore, in the hypothesis test of this study using a simple linear regression test that there is a relationship between environmental care attitudes and science learning outcomes as evidenced by the calculated t value $> t$ table ($2.755 > 1.725$) and a significance value of $0.013 < 0.05$, then H_0 is rejected and H_a is accepted, which means that it can be concluded that the variable x (environmental care attitude) has an effect on the variable y (science learning outcomes). From the results that have been obtained, it can be interpreted that the relationship between environmental care attitude and science learning outcomes is significant and has a positive relationship. This is because students who have environmental care attitude are one of the factors that are interrelated with science learning outcomes.

CONCLUSION

Based on the results of the study and discussion, it can be concluded that there is a significant positive relationship between environmental care attitudes and science learning outcomes of grade 3 students of SDN 01 Taman. This relationship shows that the higher the environmental care attitudes of students, the higher the science learning outcomes of students, conversely the lower the learning discipline of students, the lower the learning outcomes of students. The existence of a significant positive relationship between learning discipline and learning outcomes is shown by the regression equation model $Y = 52.638 + 0.254X$ explaining that every increase of 1 score/value of variable X (environmental care attitudes) will result in an increase in the number/score of variable Y (science learning outcomes) by 0.254 at a constant of 52.638. The results of the influence caused by environmental care attitudes on science learning outcomes. R Square (determination coefficient) is 0.286, which means that the influence of variable X on variable Y is 28.6%. while to see the relationship (correlation) can

be seen through the R table of 0.534 which means that the results contain the meaning that there is a relationship between environmental care attitudes (X) and science learning outcomes (Y). So, it can be concluded that the X variable with the Y variable is included in the moderate category of contributions from other factors outside the learning discipline (intelligence, learning motivation, concentration, talent and interest, self-confidence, learning tools, atmosphere and time).

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