The contributions of discipline and environmental knowledge on clean behavior of students in Public Elementary School 19 Kampung Baru Pariaman, West Sumatra

Nurhasan Syah and Sanny Edinov
Postgraduate of Environmental Science, Universitas Negeri Padang, Indonesia

*nurhasan_s@yahoo.com

Abstract. This study aims to obtain a description of the contribution of discipline and environmental knowledge to the clean behavior of students in public elementary school of 19 Kampung Baru, Pariaman. Quantitative approach was used in this research. The sample of this research were the students in grade I-VI at public elementary school and taken by simple random sampling of 81 students. The data were collected by asked to fill in the questionnaires. Results showed that: (1) There was a contribution of discipline ($X_1$) to students clean behavior ($Y$) equal to 27.70%, (2) There was a contribution of environmental knowledge ($X_2$) to students clean behavior ($Y$) equal to 53.00% And (3) There was a contribution of discipline ($X_1$) and environmental knowledge ($X_2$) to the students clean behavior ($Y$) of 54.20%. The results suggest that the discipline ($X_1$) and environmental knowledge ($X_2$), either individually or jointly contributes to students clean behavior ($Y$). This provides some explanation as to why principals and teachers in school should monitor the students discipline and environmental knowledge. This knowledge can support the clean behavior to the surrounding environment. On the other hand, it is also advisable for students to always improve their own discipline and environmental knowledge.

1. Introduction
The school aims to prepare the students about the values and competencies that might be needed in the form of knowledge, attitudes and skills. Schools as educational institutions play an important role in train the character early on, during childhood phase. However, the school can also be the place of disease transmission if not appropriately managed. Children in the school age tend to get a various disease. The emergence of different disease that often affects children in the school age associated with clean behavior. Hence, teaching the children about clean behavior in school is an absolute necessity.

A good character must be built in everyone so that they will have responsibility for their behavior. The school has an important role in the development of children personality, for example in their way of thinking, acting and behaving. Clean behavior is one of the awareness that owned by individuals, families and groups to the personal and environmental hygiene. Clean living habits that taught since earlier in life indeed accompanied by a disciplined character that owned by the students. Discipline will help the students to build their behavior, develops their attitude of responsibility that includes increasing awareness which is useful for improving the quality of themselves. Individuals who are disciplined will perform a task with orderly and organized manners and follow the applicable rules.
Behavior is a form of real action. The theory states that behavior is a given action or response to a stimulus to achieve a goal or to survive their life [1]. Skinner, a behavioral expert, distinguishes the behavior becomes natural behavior (innate behavior) and operant behavior. Natural behavior is a behavior that brought since the organism was born, in the form of reflexes and instincts, whereas operant behavior is a behavior that is formed through the learning process. In the development of behavior, it is influenced by internal and external factors [2]. The internal factors that affect the development of behavior are the knowledge, intelligence, perception, emotion and motivation, whereas the external factors are both physical and nonphysical include climatic, human, socio-economic and cultural [3].

Roger explains revealed that before people acquire new behavior, there was an on-going process that happens inside the people [3]. Awareness was the first thing that arises in the process, where the person is aware towards the upcoming stimulus, then their interest will focus toward the stimulus. Next, evaluation, the people will evaluate whether the forthcoming stimulus was good for them, then try to do things according to the stimulus and finally adopt the new behavior following the knowledge, awareness and his attitude toward the stimulus. Torndike explains that the stimulus will cause a particular response. The intensity of the relationship between the stimulus and response can be induced through repeated practice. Thus, something that learned later (transfer of training) will influence subsequent behavior [4].

Environmental factors are the most significant factor in determining health status. Therefore, the environmental knowledge is important. Environmental education can increase understanding and awareness of society in the search for solutions and prevention of environmental problems. Some good habits regarding the clean behavior (i.e., taking out the trash to its place, using the toilet and cleaning it after use, etc.) are important to train as early as possible because they will implement this behavior into later in life.

SD Negeri 19, Kampung Baru, which is in Pariaman, a city in West Sumatera. This school is one of the favorite elementary schools which has obtained an A level in the accreditation status. As one of the institutions of formal education, this school is very influential on students’ formation. The total of class in this school are 13 class, where the total students in the academic year 2016/2017 as many as 408 people. Green Open Space such as trees, plants, living pharmacy, composter and the trash bin is environmentally friendly infrastructure that is already available in this school. The intensity of using the facilities as well as their environmental knowledge can encourage and improve their behavior to have a cleaner life. The behavior is essentially goal-oriented. Behavior is motivated by a desire to obtain a particular purpose. Some people with a high motivation to act can achieve certain goals that they want.

The Ministry of Health of the Republic of Indonesia explained that the definition of clean behavior is a set of behaviors that practiced based on consciousness as a result of learning that makes a person able to help themselves, which aims to realize a clean conduct public health. Clean behavior is part of a program that has been launched by the government, which is “Perilaku Hidup Bersih dan Sehat (PHBS)” or clean and healthy behaviors.

The clean behavior is a series of various forms of behaviors/actions towards the waste managements. For example, behavior that pollutes the environments as an irresponsible action or actions to maintain the environment as the responsible one. Clean behavior can be expressed as an act or respond in an environmentally responsible behavior in order to be maintained the environment. Individuals who have the knowledge, skills, positive attitude towards the environment and towards pro-environmental behavior, typically tend to have responsible behavior [5].

People did not realize that they are part of this universe so that the environmental crisis is not yet a common concern. Indeed, humans are part of the environment. Both interact in and ecosystem, discipline does not happen by itself, but it must be generated from the actions of the people. Thus, it is important to train or teach people about the discipline, so they can regulate and control himself in order to do something that is socially acceptable to the environment and avoiding behavior that could...
damage the environment.

The emergence of self-consciousness in environmental disciplines related to the integration of environmental education that began at early age. Soegeng explains, the discipline can be considered as conditions that created and developed through a series of behaviors that indicate the values of obedience, loyalty and regularity that have become a part of behavior in life. Behavior was created through a process that guided by the family, education and experience. Discipline can be expressed as a conscious behavior of an organism to be obedient, submissive and accountable to the rule of order. In the application of discipline, it needed to make rules and regulations. Discipline is one of the supporting factors in improving the quality of education/school [6].

Environmental knowledge is already integrated in education curriculum that implement Adiwiyata program in their school. Environmental Education is the way to improve the knowledge, awareness and skills of the communities in sustaining the environment. Most of the knowledge gained through the eyes and ears. One's knowledge has different intensity and level [7]. Soekidjo argues that knowledge or cognitive domain is important for the formation of a person's behavior. In the cognitive domain, there are six level of knowledge, namely know, comprehension, application, analysis, synthesis and evaluation [3].

According to Indonesian’s Law No. 32 in 2009, The environment is the unity of objects, powers, condition and human including their behavior that will influence the situation itself and other living creatures. Thus, environmental knowledge can be defined as everything that is associated with environment after the direct contact with nature through the instrumentality of the senses and lead to an immediate impression in people’s mind.

Hiswari suggests that the level of understanding of the environmental knowledge is the results of an environmental learning process to the students' attitudes toward the environment. Environmental education is expected to be embedded and transformed on the students [8]. Discipline and environmental knowledge of the students are two factors that influence the success of the school in creating and maintaining the environment to keep it clean. The current study is the contribution of discipline and environmental knowledge toward clean behavior of students in the elementary school in Pariaman.

The problem statement from the current study is how much the contribution of discipline and environmental knowledge toward clean behavior of students in Public Elementary School 19 Kampung Baru Pariaman.

2. Methods
This research was conducted with a quantitative approach that belongs to the type of survey research. As a causative research, this study was aimed to reveal their relationship and the contribution of variables that exist. As these variables include the clean behavior of students (Y), discipline (X1) and knowledge of the environment (X2). In this research, as well as interviews to sharpen the results that have been obtained using a questionnaire instrument. The population were students in S Public Elementary School 19 Kampung Baru Pariaman. Proportional random sampling was used to gather the sample of the study and as a results there were 81 students that participated in this study.

To obtain the data from the variables, the researchers used questionnaires in the form of multiple choice where validity and reliability of the tools already met. A correlation and ANOVA were conducted to analyze the data using the SPSS for Windows Version 23.00. interview method was also conducted in order to get the deeper result and these results were reported in a descriptive or qualitative form.

3. Discussions
Based on the results of the normality test, a significance probability of students clean behavior (Y), discipline (X1) and environmental knowledge (X2), for 0.200, 0.181 and 0.056, respectively. These results suggesting that the distribution of data is normal (as seen in Table 1).

| Table 1. Normality Test Results Summary |
Variables | Significance | α (Alpha) | Information
--- | --- | --- | ---
Behavior Clean (Y) | 0.200 | 0.05 | Normal
Discipline (X₁) | 0.181 | 0.05 | Normal
Environmental Sciences (X₂) | 0.056 | 0.05 | Normal

As shown in Table 2, The first hypothesis was analyzed by simple regression correlation analysis. The results showed that the correlation coefficient between discipline (X₁) and students clean behavior (Y) was significantly correlated \[ r_{xy} = 0.526, \ p < 0.000 \]. Thus, there was a significant correlation between X₁ and Y with 0.277 coefficient determination (27.70% of contribution). These results suggest that the discipline remained significantly related to the variable Y, means that improvement of the students discipline will improve their clean behavior as well.

**Table 2.** Correlation Test Results Summary The Relationship between Discipline (X₁) with Students Clean Behavior (Y)

| Correlation | Correlation Coefficient | Probability Significance | Coefficient of Determination | Relationship X₁ and Y |
| --- | --- | --- | --- | --- |
| X₁ and Y | 0.526 | 0.000 | 0.277 | There Relations |

The second hypothesis analysis was shown in Table 3. The results showed that the correlation between environmental knowledge (X₂) and students clean behavior (Y) was significantly correlated \[ r_{xy} = 0.728, \ p < 0.000 \]. Thus, there was a highly significant correlation between variable X₂ and Y with 0.530 (53% of contribution) toward the students clean behavior. This suggests that environmental knowledge remained significantly related to the variable Y. The increasing of environmental knowledge will increase the students clean behavior.

**Table 3.** Correlation Test Results Summary The Relationship between Environmental Knowledge (X₂) with Students Clean Behavior (Y)

| Correlation | Correlation Coefficient | Probability Significance | Coefficient of Determination | Relationship X₂ and Y |
| --- | --- | --- | --- | --- |
| X₂ and Y | 0.728 | 0.000 | 0.530 | There Relations |

The third hypothesis results were presented in Table 4. The correlation between discipline and environmental knowledge was highly significantly correlated \[ r_{xy} = 0.737, \ p < 0.000 \]. Therefore, there was a significant correlation between discipline and knowledge of the environment together with a coefficient of determination 0.542 (54.20% of contribution) towards the clean behavior of students.

**Table 4.** Multiple Correlation Test Results Summary

| Correlation | Correlation Coefficient | Probability Significance | Coefficient of Determination | Contributions X₁ and Y |
| --- | --- | --- | --- | --- |
| X₁ and X₂ with Y | 0.737 | 0.000 | 0.542 | There Relations |

Based on the results of the F test, \( F (2,80) = 46.234, \ p < 0.0001 \). Thus, the multiple linear regression equations were significant and could be used to express the magnitude of the relationship between independent variables and the dependent variable in this study.

**Table 5.** Test Results Summary F

| Model | Sum of Squares | Df | Mean Square | F | Significance |
| --- | --- | --- | --- | --- | --- |
| Regression | 8515.196 | 2 | 4257.598 | 46.234 | 0.000 |
| Residual Total | 7182.828 | 78 | 92.088 | | |
The results of interviews revealed that the disciplinary of the students in keeping the environment clean is already good enough. It can be seen from the observations of the cleanliness of the school, as there was not much trash scattered or deliberately discarded by the students are not in place and the cleaning schedule goes according to the plan. Friday cleaning day is held every week by the school. However, to develop the students disciplinary behavior is not easy. Students should be familiar and care with the environment.

The formation of students disciplinary was influenced by the existence of the rules at school. The interviews result suggesting that students are happy to undergo the existing regulations, especially regarding the cleanliness. There were many obstacles that students experience while developing the disciplinary. Thus, the principals may create solutions to make a punishments or penalties for the students who are coming late or break the rules. Rewards and Punishments can be a motivation for the students to implement the disciplinary.

To achieve the implementation of discipline in the students behavior, the awareness of the students is necessary. The support and cooperation from school to facilitate the implementation of current knowledge that owned by the students. Teaching and guiding the students to care about the environment should be a priority. The students expressed their complaint through the interview about the lack of facilities and infrastructure in the school environment also become obstacles to maintain the sanitary condition. For example, the lack of waste management and the lack of toilet hygiene because there was not enough water. In connection with the above findings, the need for particular attention to all parties to improve student disciplinary in order to enhance the students' clean behavior. With the increase of discipline, the students will develop better response on the social environment that will ultimately impact on the comfort and safety of the school environment.

Furthermore, the results of interviews conducted with the students also revealed that the environmental knowledge of the students in maintaining the environment cleanliness was excellent. Students have a good understanding of the environment because the school has been integrating the environmental education in teaching materials. Theories related environmental knowledge that gained since childhood will help in increasing the awareness of the importance of a clean environment because it is also closely related to the health of students in the school. Behavior that is based on understanding will be last longer compared to behavior that is not based on knowledge.

A good knowledge about the environment will improve student awareness in the importance of environmental hygiene so that a clean environment can be maintained. A Cleanliness environment leads to a healthy life of the students. Health, in this case, cannot refer to aspects of treatment but instead refers to the prevention aspect, so it needs to be appropriately addressed so as not harmful to health. Students knowledge in environmental hygiene would be useful in waste management. For example, separate the garbage (organic and inorganic), maintaining the cleanliness of the bathrooms and clean water usage. With the increased knowledge of the environment, the behavior of students will be better for the environment that will ultimately impact on the comfort and safety of the school environment.

The student’s behavior should be controlled in order to achieve a clean environment. The role of schools in helping the implementation of the clean behavior of students is crucial so that when the children are in school, teachers need to pay more considerable attention to them, either directly through teaching them in the class or by application.

4. Conclusion
There was a positive and significant contribution to the discipline with the clean behavior of students. Student discipline was one of the factors that influence the clean behavior of students. Based on the results, students have a pretty good control to keep the environment clean. Students are still under the supervision of teachers so that their disciplinary of clean behavior were not optimal yet. There was a
significant and positive contribution to clean behavior and environmental knowledge with students. Environmental understanding of student was one of the factors that influence the clean behavior. Based on the results, the students have a good experience in protecting the environment to keep it clean. The integration of environmental knowledge in the teaching material given by the teacher adds confidence the students to behave in a clean environment. Increased discipline and knowledge about the environment, it also can improve the behavior of students towards a clean environment so that the environment can be protected and have a positive impact on health.

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