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# Attitude and Behavior towards Environment of High School Students in Vientiane, Lao People's Democratic Republic

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**Abstract**

The purposes of this research were twofold 1) to study the attitude and the behavior towards environment of high school students 2) to study the relations of attitude and behavior towards environment of high school students in Vientiane, Lao People's Democratic. The sample of this study consisted of 393 high school students in Vientiane selected by the purposive sampling target group in Semester II, Academic Year 2009. The instruments used in this research were 1) five levels closed end of rating scale questionnaire on the attitude and behavior towards environment and 2) opened end questionnaire on the opinion and behavior towards environment of high school students. Means ($\overline{X}$), Percentage, Standard Deviation (S.D), t-test and Pearson's Product Moment Correlation were used to analyze the data. The findings indicated that: 1) The attitude towards environment of the students was at good level ($\overline{X}$ = 4.32, S.D. = 0.39) and the behavior towards environment of the students was at fair level ($\overline{X}$ = 3.33, S.D. = 0.41). 2) The attitude and behavior towards environment of the students had positive relationship significantly at 0.01 level.

**Key words :** Attitude, Behavior towards Environment, Vientiane

## Introduction

Global warming is already changing the world around us. Worldwide, floods and storms are more severe, and heat waves are becoming more extreme. Rivers freeze later in the winter and melt earlier. The global mean sea level is rising. Such dramatic unusually changes have important implications for human society and affect fundamental Earth systems (UNEP, 2003) Current environmental situation in many countries around the world are in critical condition, more forest degradation, severe drought, dust, extinction of animals, pollution of the water sources, pollution from toxic waste and process waste. Environmental crisis becomes a social problem and affect the way of living of the population (Dulyarak, 1998).

Wiser Earth (2007) stated that based on current scientific evidence many of the human activities that modify or destroy natural ecosystems may cause deterioration of ecological services whose value, in the long term, dwarfs the short-term economic benefits society

gains from those activities. Human being is one of the most prominent agents of the change that lead to environmental degradation. Human use of the physical environment is often excessive and uncontrolled. Environmental degradation is often mentioned as the consequence of human negligence (Jamaluddin Md. Jahi, 2009).

Thus, it is important that people have knowledge and awareness in environmental problems, especially young people as an important force in solving the environmental crisis mentioned above. Education is vital to keep everyone, especially young people aware of environmental problems and its solutions. Human being is the most important agent who has destroyed the nature and environment with technology. Human activities cause the environmental degradation. Therefore, change of people behavior should be the best solution (Office of National Environment, n.d. cited in Suri, 1994).

Vientiane is the capital city of Lao People's Democratic Republic (PDR), as the center of the politic, economy, public health, social and cultural trade and has valuable sources of history and culture, as well as infrastructure and industrial facilities. (Tepthong & Foppes, 2002). Natural resources are important for economic and social development. However, economic expansion, population growth has coincided with declining environmental sustainability and an increasing strain on urban and rural environments and biodiversity (United Nations, 2002 and Tong, 2009). The increase in volume of wastes generated daily and the problem of waste disposal have become the environmental problems facing in Vientiane municipality. The waste disposal has caused the air pollution and polluted water. The poor management of landfill sites, lack of care of the relevant authorities, lack of laws on the environment and the advertising budget were the reasons indicated the environmental problems. In Vientiane, there have been some activities aimed at creating awareness and educating the students on environmental issues, funded by the Education for Development Foundation, in order to facilitate the education (Tepthong & Foppes, 2002).

The researcher as academic program coordinator of Mekong Institute whereas a training institute to educate government officials from the Greater Mekong Sub region (GMS) countries, is directly involved in coordinating the training, related in planning and decentralization of education in the GMS countries, interested in doing research on attitude and behavior towards environment of high school students in Vientiane, Lao People's Democratic Republic. The data and obtained results from the study can be used as information on planning to prevent and solve environmental problems, as guidelines for planning of the study on environment, to improve teaching and learning.

**The purposes of the research were two fold:**

1) To study the attitude and the behavior towards environment of high school students

2) To study the relations of attitude and behavior towards environment of high school students in Vientiane, Lao People's Democratic

**Materials and Methods**

**Methodology:** This study is a Survey Research.

**Population and sample:** The population in this study were 20,804 high school students in Vientiane, Lao People's Democratic Republic (Lao PDR) studying in Semester II, Academic

Year 2009. The sample of this study consisted of 393 high school students in Vientiane selected by the purposive sampling target group.

**The instruments**: The instruments used in this research were

1) Five levels closed end of rating scale questionnaire on the attitude and behavior towards environment.

2) Opened end questionnaire on the opinion and behavior towards environment of high school students.

Environmental topics were divided into four areas which were water, forest, energy and waste. The total number of questions included 80 items.

**Statistics for data analyses:** frequency percentage means ($\bar{X}$), Percentage, Standard Deviation (S.D), t-test and Pearson's Product Moment Correlation were used to analyze the data.

## Results and discussion

The research findings from the study on attitude and the behavior towards environment of high school students and the relations of attitude and behavior towards environment of high school students in Vientiane, Lao People's Democratic, showed in Table 1-7.

### 1. The attitude towards environment of high school students

**Table 1:** Results of the attitude towards environment of high school students

| Environmental Topics | Attitude Towards Environment | | |
|---|---|---|---|
| | ($\bar{X}$) | SD | Meaning |
| Water | 4.39 | 0.46 | good |
| Forest | 4.43 | 0.37 | good |
| Energy | 4.26 | 0.49 | good |
| Waste | 4.20 | 0.56 | good |
| Total | 4.32 | 0.39 | good |

From the table 1, it showed that overall of the attitude towards environment of high school students was at "good" level ($\bar{X}$ = 4.32, S.D. = 0.39). Based on the data analysis of attitude towards environment in 4 areas sorted from the highest to lowest as follows: attitude towards forest was at "good" level ($\bar{X}$ = 4.43, S.D. = 0.37) attitude towards water was at "good" level ($\bar{X}$ = 4.39, S.D. = 0.46) attitude towards energy was at "good" level ($\bar{X}$ = 4.26, S.D. = 0.49) and attitude towards waste was at "good" level ($\bar{X}$ = 4.20, S.D. = 0.56)

Gender

From the test values (t-test) showed that the variable "sex" did not affect attitudes towards the environment. The attitudes towards environment of female and male students were not different (Table 2).

**Table 2:** Results of comparison of attitudes towards the environment of male and female students

| Environmental Topics | Attitude Towards Environment | | | | | |
|---|---|---|---|---|---|---|
| | **Male** | | **Female** | | | |
| | **($\bar{X}$)** | **SD** | **($\bar{X}$)** | **SD** | **t-value** | **p-value** |
| Water | 4.40 | 0.47 | 4.38 | 0.44 | .561 | .575 |
| Forest | 4.44 | 0.36 | 4.41 | 0.38 | .589 | .556 |
| Energy | 4.28 | 0.51 | 4.23 | 0.48 | 1.006 | .315 |
| Waste | 4.17 | 0.60 | 4.23 | 0.51 | -1.107 | .269 |
| Total | **4.32** | **0.42** | **4.32** | **0.36** | **.227** | **.821** |

The results showed that attitude towards the environment of junior high school students and secondary school students had the difference of statistically significance level of 0.01 (Table 3) However, only two aspects of environmental topics which were attitude towards water and waste showed the difference of statistically significance. The secondary school students' attitudes towards water and waste were better than junior high school students. Attitudes towards forestry and energy were not different (Table 3).

**Table 3:** Results of comparison of attitudes towards the environment of junior high school and secondary school students

| Environmental Topics | Attitude Towards Environment | | | | | |
|---|---|---|---|---|---|---|
| | Junior High school | | Secondary school | | | |
| | ($\bar{X}$) | SD | ($\bar{X}$) | SD | t-value | p-value |
| Water | 4.34 | 0.49 | 4.44 | 0.40 | -2.187 | .029 (*) |
| Forest | 4.39 | 0.37 | 4.46 | 0.36 | -1.836 | .067 |
| Energy | 4.21 | 0.51 | 4.31 | 0.47 | -1.841 | .066 |
| Waste | 4.12 | 0.58 | 4.30 | 0.51 | -3.170 | .002 (**) |
| Total | 4.27 | 0.41 | 4.38 | 0.37 | -2.762 | .006 (**) |

* Significant at the 0.05 level
** Significant at the 0.01 level

Medany et al. (2003 cited in Kritsada, 2008) found that the factors of age and education were the key factors affecting knowledge and attitudes of the community in implementation of reuse water. Simmalee (2008) examined the water utilization rate and water saving attitude of housing estate communities in Khon Kaen province. It was found that factors affecting the level of attitudes towards water saving of single housing estate communities were age, education level and frequency of receiving information about water saving. Factors that affect attitude towards water saving of townhouse communities were family status, education level, total of income in the family, and the frequency of receiving information about water saving.

**The location of the school**

The finding showed that the attitude towards environment of students studying in government schools in the municipality area and the students studying in government schools outside the municipality area was significant at the 0.01 level. The students studying in government schools in the municipality area had better attitude towards environment than the students studying in government schools outside the municipality area (Table 4).

**Table 4:** Results of comparison of attitudes towards the environment of high school students studying in government schools in the municipality and the students studying in government schools outside the municipality

| Environmental Topics | Attitude Towards Environment | | | | | |
|---|---|---|---|---|---|---|
| | government schools in the municipality | | government schools outside the municipality | | | |
| | **($\bar{X}$)** | **SD** | **($\bar{X}$)** | **SD** | **t-value** | **p-value** |
| Water | 4.49 | 0.39 | 4.26 | 0.47 | 4.360 | .000 (**) |
| Forest | 4.52 | 0.35 | 4.31 | 0.37 | 4.858 | .000 (**) |
| Energy | 4.41 | 0.48 | 4.10 | 0.46 | 5.259 | .000 (**) |
| Waste | 4.38 | 0.52 | 3.99 | 0.55 | 5.832 | .000 (**) |
| Total | **4.45** | **0.38** | **4.17** | **0.36** | **6.267** | **.000 (**)** |

** Significant at the 0.01 level

Mapaew (2000) found that grade 6 elementary school students under the office of Trad Provincial Primary Education had attitude towards conservation of natural environment at good level. However, the attitude towards conservation of natural environment of students studying in the municipality area and the students studying outside the municipality area had the difference of statistically significance level of 0.01.

**2. The behavior towards environment of high school students**

The result in table 5 indicated that overall of the behavior towards environment of high school students was at "fair" level ($\bar{X}$ = 3.33, SD = 0.41). Based on the data analysis of behavior towards environment in 4 areas sorted from the highest to lowest as follows: behavior towards forest was at "good" level ($\bar{X}$ = 3.58, SD = 0.40) behavior towards water was at "fair" level ($\bar{X}$ = 3.16, SD = 0.53) behavior towards energy was at "fair" level ($\bar{X}$ = 3.31, SD = 0.66) and behavior towards waste was at "fair" level ($\bar{X}$ = 3.27, SD = 0.58).

**Table 5:** Results of the behavior towards environment of high school students

| Environmental Topics | Behavior Towards Environment | | |
|---|---|---|---|
| | **($\bar{X}$)** | **SD** | **Meaning** |
| Water | 3.16 | 0.53 | Fair |
| Forest | 3.58 | 0.40 | Good |
| Energy | 3.31 | 0.66 | Fair |
| Waste | 3.27 | 0.58 | Fair |
| Total | **3.33** | **0.41** | **Fair** |

From the result above, it was alarming that the behavior of students in Lao PDR should be urgently fostered, especially behavior towards water conservation. The behavior of students is not appropriate in using and saving water. Their behavior will affect the environment and cause environmental problems and impacts in Lao PDR in the future.

This is consistent with research of Gilg, Barr (2006 cited in Simmalee, 2008) that attitude and behavior towards water saving of people living in urban communities in Devon, UK was at good level. The results showed that most of sample turned off the tap while brushing teeth and washing dishes. However, they did not reduce the use of water while taking shower and flushing toilets.

**Education**

The result in table 6 indicated that in general behavior towards the environment of junior high school students and secondary school students was not different. However, the behavior towards water of junior high school students was better than the secondary school students significant at the 0.01 level.

This is consistent with research of Traipipattanapong (2000) that Bachelor degree holders had better behavior than the higher education level in environmental quality development. Sornjai (2001) mentioned that the difference of education level was the factor affecting the differences of knowledge and behavior towards environment.

Thus, related authorities, who are involved in the education planning should review the teaching and learning program and curriculum for better development and implementation. Students should have knowledge, understanding and awareness towards environment, as well as a high level of concern for environmental problems. The involvement in environmental actions and conserving natural resources should be more promoted.

Thathong and Sukriyapong (1988) stated that human being caused the change of environment. Therefore, each person should have knowledge, understanding and positive attitude towards environment. Practice on the environment was required to make changes to the environment in a good way.

**Table 6:** Results of comparison of behavior towards the environment of junior high school and secondary school students

| Environmental Topics | Behavior Towards Environment | | | | | |
|---|---|---|---|---|---|---|
| | Junior High school | | Secondary school | | | |
| | **($\bar{X}$)** | **SD** | **($\bar{X}$)** | **SD** | **t-value** | **p-value** |
| Water | 3.25 | 0.57 | 3.06 | 0.47 | 3.569 | .000 (**) |
| Forest | 3.59 | 0.42 | 3.58 | 0.38 | .219 | .827 |
| Energy | 3.31 | 0.71 | 3.30 | 0.60 | .174 | .862 |
| Waste | 3.24 | 0.58 | 3.30 | 0.59 | -.925 | .355 |
| Total | **3.35** | **0.44** | **3.31** | **0.37** | **.943** | **.346** |

** Significant at the 0.01 level

**Gender**

Based on the research, compared the variable "sex" by the test values (t-test), the result showed that the variable "sex" affected behavior towards the environment with the difference of statistically significance level of 0.01. The behaviors towards environment of male were better than female (Table 7).

**Table 7:** Results of comparison of behavior towards the environment of male and female students

| Environmental Topics | Behavior Towards Environment | | | | | |
|---|---|---|---|---|---|---|
| | Male | | Female | | | |
| | **($\bar{X}$)** | **SD** | **($\bar{X}$)** | **SD** | **t-value** | **p-value** |
| Water | 3.26 | 0.52 | 3.05 | 0.52 | 3.988 | .000 (**) |
| Forest | 3.65 | 0.41 | 3.52 | 0.39 | 3.146 | .002 (**) |
| Energy | 3.43 | 0.66 | 3.18 | 0.64 | 3.787 | .000 (**) |
| Waste | 3.35 | 0.62 | 3.18 | 0.54 | 2.797 | .005 (**) |
| Total | **3.43** | **0.41** | **3.24** | **0.38** | **4.670** | **.000 (**)** |

** Significant at the 0.01 level

Ornphueng (2002) mentioned that gender had correlation to the environmental conservation behavior. Traipipattanapong (2000) also found that knowledge, attitude and behaviors of the male administrators on the environmental development were higher and better than the females.

In order to develop and improve well behaviors in the conservation of natural resources and environment of the students, it is important that parents, teachers, related authorities and various media should work together seriously. Moreover, providing students knowledge, understanding and appreciation of natural resources and environment will enhance awareness and behavior towards environment of students, as well as sustain the environment.

**3. The relationship of the attitude and behavior towards environment**

The result of the study showed that the attitude and behavior towards environment of the students had positive relationship significantly at 0.01 level (Correlation = 0.389). Ornphuen (2002) and Yutisri (2002) found that attitude and behavior towards environmental conservation had relationship to each other. It also showed that attitude towards electricity energy saving was a factor affecting behavior towards electricity energy saving

The results above showed that attitude and behavior towards environment had relationship. That means if a person has good attitude towards environment, he will also behave well and appropriate in conserving natural resources environment. The maintenance (conservation) is accurate and appropriate environment. Environmental education processes can help and support to make people have good attitude and behavior towards environment. Because environmental education is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution (Stapp et al. 1969)

Office of Natural Environmental Board (2002) concluded that the education received will affect positive attitudes and lead to behavior changed, awareness, involvement in environmental actions conserving environment and environmental responsibility. Therefore, enhancing knowledge and involvement in environment action are needed for solving environmental problems. Education helps people having awareness, moral, values, skills, attitude, and behavior that contribute to sustainable development. However, education should not be served to people with knowledge about biophysical environment only, but education should provide knowledge about value of environmental economic and social, as well as human development (Kanhasuwan, n.d. cited in Yensabai, 2008).

## Conclusion

The findings indicated that:

1. The result indicated that behavior towards environment of high school students was at "fair" level ($\bar{X}$ = 3.33, SD = 0.41) and attitude towards environment of high school students was at "good" level ($\bar{X}$ = 4.32, S.D. = 0.39).

2. The behavior towards environment of male and female students was found to be significantly different at 0.01 level; female ($\bar{X}$ = 3.24, S.D. = 0.38) and male ($\bar{X}$ = 3.43, S.D. = 0.41). However, the attitude towards environment of male and female students showed no difference; female ($\bar{X}$ = 4.32, S.D. = 0.36) and male ($\bar{X}$ = 4.32, S.D. = 0.42)

3. The attitudes towards environment of the students who study at different level were found to be significantly different at 0.01 level, junior high school students ($\bar{X}$ = 4.27, S.D. = 0.41) and secondary school students ($\bar{X}$ = 4.38, S.D. = 0.37). However, the behavior towards the environment of the students who study at different level showed no difference.

4. The attitude and behavior towards environment of the students had positive relationship significantly at 0.01 level.

## Recommendations

The result from the study showed that attitude towards environment of students was at "good" level. However, behavior towards environment of students was at "fair" level.

Therefore, it is urgent needs to change behavior towards environment of the student in the better way. Thus, parents, teachers, related authorities and various media should work together and find out how to support, promote, develop and enhance knowledge, understanding and awareness towards environment of students to help minimise environmental impact and problems. Participation and involvement in environmental activities of students, use of natural resources effectively and conserving natural resources can help to sustain environment and natural resources.

**General recommentdations**

1. Environmental crisis and degradation in many countries caused by human activities and many social factors. Therefore, learning and teaching must be integrated. Knowledge about environment should be added and integrated into the curriculum and every learning subject.

2. Environmental Education process (education *in* the environment, education *about* the environment and education *for* the environment) should be used in learning and teaching about environment, especially education *for* the environment should be emphasized because this study focuses on the students to practice their own thinking processes to solve the environmental problems that occur in the context of learners.

**Suggestions for further research**

1. Should study the factors affecting behavior in practice and conserving natural resources and environment of students, such as teaching about environment, receiving information about environment, etc.

2. Should study, how schools play the role in promoting sustainable environment and the learning on the environment issues and environmental education.

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