
Promoting the use of environmentally friendly packaging materials for municipality school students

Adisak Singseewo* and Jintana Kimhanta

¹Environmental Educatio Research Group [EERG], Department of Environmental Education, Faculty of Environment and Resource Studies, Mahasarakham University, Kantarawichai District, MahaSarakhm, 44150, Thailand.

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The purposes of the present study were to examine and compare the knowledge, attitude and behavior of students before and after promoting the use of environmentally friendly packaging materials. The samples were 32 of SisawatWittaya Municipality School's Grade 7 students who were selected by the purposive sampling technique. The research tools included a manual and different forms of test to gauge the participants' knowledge, attitude and behavior. The data was analyzed by percentage, mean, standard deviation and paired t – test. The findings revealed that before promoting of the package, the students' knowledge was at the "should be improved" level, while the attitude was rated the "uncertain" level. However, after the promotion of the package, the knowledge aspect was rated at the "fair" level and the attitude was observed at the "agree" level, and their behavior to the "frequent" level. Descriptive statistics also showed that the students' scores on knowledge and attitude after the promotion were higher than the ones tested before the promotion of packaging system with the significance at the level of 0.05.

Keywords: promotion, packaging material, environmental friendly, attitude, behavior.

Introduction

In the past, people used natural and unprocessed materials for wrapping purposes to prevent damage on the goods during the transferring process. At present, high producing technology has been used to synthesize natural materials into higher quality packaging products which serve wider range of purposes. The package makes the good to be easily portable. Most importantly, the modernized packaging system helps protect the products inside the package more effectively. Suffice to say that, packaging system has emerged well into the modern way of living. However, the excessive use of packing leads to some environmental problems such as the over consumption of resource and the waste problems (Toroongrot, 2012). World Bankcited the result of a research work called, "What a Waste : a Global Review of Solid Waste Management" which showed that the annual global waste production is as high as 1,000 billion tons. The research estimated

* **CoresspondingAuthor:** Singseewo, A.; **E- mail address :** Singseewo@yahoo.com

that the number was risen by 1 percent per year. Based on this estimation, the world's waste toll is anticipated to reach 2.2 billions tons in 2025. The eradication of this waste will be more complicated and it will consume tremendous amount to budget (International Academic Center for Climate Change (2016). It was estimated that there were about 25 million tons of garbage in Thailand in 2014, which was equivalent to about 70,000 tons of waste production per day. Unfortunately, only about 30 percent of this garbage has been sanitarilly managed while up to 70 percent is left piling up like mountains in different areas of big cities and they a potential sourcesfor greenhouse gas emission(Pollution Control Department. [http:// www.pcd.go.th/ Info_serv/ RoadmadWaste.html](http://www.pcd.go.th/Info_serv/RoadmadWaste.html)). Environmental education is among the many effective ways for garbage management. It is a mean for environmentalsupport underpinning the idea of creating environmental awareness to the learners. The method also emphasizes on the creating close relationship between human and environment, a kind of bond that helps create positive attitude, desirable etiquettes and environmental participation (Singseewo, 2011a; Singseewo, 2011b; Singseewo, 2015 and Veeravattananond, 2012).

During the past decade, local administration offices have been more aware of the importance to have garbage renewable to generate incomes on the local areas and to reduce production costs (Pollution Control Department, 2016). A study into waste problems showed that human's inadequate knowledge and awareness about environmental management were crucial causes to make environmental problem solving far from success (Veeravattananond, 2012). Environmental problems are more prevalent nowadays since garbage is not correctly managed in many places. Some of the measures that have been implemented to manipulate the waste problems are the attempts to minimize, reuse, and recycle the packages. People are advised to use environmentally friendly products such as the green label products and the electronic products with Level 5 of power saving (Association for Green House Gas Management (Public Organization), (2016). Different social sections have participated in the campaign aiming to terminate the use of plastic bags. Their activities encourage people to use glass bottles instead of the plastic ones. Moreover, people have been advised to use materials that are produced with the energy saving methods. The green label products have been promoted (Soyraya, 2011).The researchers were interested in finding ways to eliminate garbage and reduce the amount of garbage disposal. Moreover, environmental education is believed to be an effective way for raising environmental awareness and reducing garbage disposal. The researchers were interested in promoting the use of products that are friendly toenvironment to the seventh graders at Mahasarakham'sSisawatWittaya Municipality School in order to trigger awareness and positive attitude on environmental problems and to encourage the use of green packaging.

Objectives

1. To compare the students' levels of knowledge and attitude tested before and after the promotion of the environmentally friendly package.
2. To investigate the students' behaviors relating to the use of the environmentally friendly package before and after the package promotion.

Hypothesis

After the promotion of the environmentally friendly package, the levels of knowledge and attitude and positive behaviors of the seventh graders in Maharakham's Sisawat Wittaya Municipality School would be higher than the scores observed in the pretest.

Methodology

Research Area is Sisawat Wittaya Municipality School in Maung District, Maharakham Province.

Population consisted of 505 students, 292 males and 213 females, from Sisawat Wittaya Municipality School in Maung District, Maharakham Province.

Samples were 32 of the seventh graders from Sisawat Wittaya Municipality School who were selected via the Specific Random Method.

Research Variables

Independent variable was the manual for the promotion of the environmentally friendly packaging.

Dependent Variables consisted of the following;

1. Knowledge about the environmentally friendly packaging
2. Attitude about the environmentally friendly packaging
3. Behaviors relating to the use of the environmentally friendly packaging

Data Collecting Duration: Three phases of data collection were conducted from August, 2015 to May 2016 .

Phase1: Surveying school information

Phase2: Designing and testing of the research tool's quality. The Manual for the promotion of the environmentally friendly package was divided into four units.

Unit 1: Packaging Materials: This unit is about the meaning, the importance, and the types of packaging.

Unit2: Environmental Impact of Packaging: This unit discusses the environmental effects of the package which are related to waste, energy consumption and ozone depletion

Unit3: Measures for Problem Solving: This unit discusses the idea of 7Rs consisting of; Rethink, Reduce, Reuse, Recycle, Repair, Reject and Return.

Unit4:Modern Packaging: This section is about the Green Label products.

Phase3: Knowledge Training: The twelve-hour activities were introduced to the students in a period of 4 weeks, each was three hours.

This Quasi Experimental Researchclassified the participants into an experimental group. The pretest and posttest scores relating the knowledge, attitude and behaviors about the packaging were compared (Srisa-ard, 2000).

Table 1: Experimentation Plan

Group	Pretest	Implementation	Posttest
E	O₁	X	O₂

Symbols in the experimentation plan

E = Experimental Group

O₁ = Knowledge and attitude before the promotion

O₂ = Knowledge, attitude and behavior after the promotion

X = The promotion of the environmentally friendly package

Research Tools

The following tools were used in this research.

Tool for data dissemination

Manual for the promotion of the environmentally friendly packing

Tools for data collection and assessment

1.Knowledge Test Form to evaluate the students' knowledge about the environmentally friendly packing.

2. Attitude Test form to evaluate the students' attitude on the environmentally friendly packing.

3.Behavioral Test Form to evaluate the students' practices about the environmentally friendly packing.

Statistics used in data analysis included percentile, frequency, mean, standard deviation, and Paired T-test.

Results

The following results were observed after the environmentally friendly packaging material was introduced to the students in SisawatWittaya Municipality School in Mahasarakham Province.

1. The students' knowledge and attitude tested during the pretest and the posttest

1.1 The students' overall knowledge in the pretest was presented at the "should be improved" level, (\bar{X} =6.47) or about 32.35 percent while it was observed at the "moderate" level, (\bar{X} = 10.16) or 50 percent in the posttest. The posttest knowledge score was reported to be higher than one observed in the pretest with the significance at the level of .05.

1.2 The overall attitude in the pretest was rated at the "uncertain" level, (\bar{X} = 2.14) while the posttest attitude score was observed at the "agree" level, (\bar{X} =2.45). Further analysis revealed that the students' attitude score in the posttest was higher than the one observed in the pretest with the significance at the level of .05.

2. After the promotion of the green packaging to the students, it was observed that the seventh graders at SisawatWittaya Municipality School reported to have used the environmentally friendly packaging at the "frequently use" level with the average score of 2.58.

Discussion

The following paragraphs discuss the results observed from the promotion of the environmentally friendly packaging.

1. The students' knowledge tested in the posttest was significantly higher than the score rated in the pretest. Specifically, the pretest and the posttest knowledges were placed at the "should be improved" and the "moderate" levels, respectively. This result shows that the manual used in the green packaging promotion helps promote the students' knowledge on the use of the environmentally friendly packaging. The students earned more knowledge after the program because during the application of the manual, the participants were encouraged to ask questions and do the summary of the content in front of the class. The students had more chance to review what they had learnt in the class. Moreover, the researchers exemplified different types of environmentally friendly packaging to the students during the promotion activity. Singseewo (2011) advocated that, in the environmental education, students be trained to appreciate the value of natural resources and the contribution they have to human lives. Positive environmental attitude and awareness should also be cultivated among the students to help them make good environmental decision and create environmental etiquette. The students' environmental awareness is a factor that engages the students in environmental activities. Somnarm (2014)

conducted a research into the cultivation of a type of plant called “Samortai” to reduce the effect of global warming in Ban Nong-Oom School of Mahasarakham’s Gantarawichai District. It was shown in this research that the students’ pretest knowledge score was averaged at the “good” level while the posttest knowledge score was rated at the “very good” level. In this study, the posttest score was reported to be higher than the pretest one. Woraparp (2014) conducted a research on the promoting of waste classification in order to improve environmental condition in Thakhonyang School, in Mahasarakham’s Muang District. Woraparp (2014) found that the students’ knowledge score of the posttest was higher than the pretest score with the significance at the level of 0.05. Similar result was observed in a study by Sutaboon (2013) who set a campaign for household waste management in Nongpling village, Mahasarakham’s Muang district. Sutaboon found that the students’ knowledge in the pretest was rated at the “good” level and posttest score was at the “very high” level. The knowledge tested on the posttest was reported to be higher than the knowledge that the students possessed prior to the application of the program, with the significance at the level of 0.05.

2. The students’ attitude was improved after the application of the manual. The averaged attitude score in the pretest was observed at the “uncertain” level and the figure soared up to the “agree” level after the implication of the manual. The students’ attitude was improved since they were exposed to the manual that exhibited comprehensive content of environmental studies. The activities were designed to help increase the students’ knowledge, attitude and environmental value. Veeravatananond (2012) said that environmental process is the method for environmental knowledge dissemination that is aimed to cultivate positive attitude and value for environmental protection. Environmental studies should be conducted in the way that underpins the students to take part in the environmental problem solving. Chartnarasin (2012) evaluated attitude of the consumers in Bangkok and found that on the overall, the participants had high level of understanding about the type of packaging materials that can be decomposed naturally. The participants reported to be knowledgeable on what materials can not be degraded and what materials can lead to waste problem. Sittigittigorn (2011) investigated the impact of packaging strategies on the consumers’ attitude and found that the consumers had better attitude toward the products with packaging strategies.

3. The behavior of the Sisawat Wittaya Municipality School’s students on the use of the environmentally friendly packaging after the promotion of the program was risen. Specifically, the students’ overall behavioral score rated after the promotion of the green package was at the “often use” level. The itemized analysis showed that the most practiced behavior among the students was the “reusing the classified packaging” and the least practiced behavior was placed on “using water containers in place

of plastic bottles". The use of the green packaging in this promotion was implemented in form of knowledge training to insist the behavioral change among the students. Based on this training, the students were acknowledged to be selective in using the environmentally friendly packaging. One of the activities that was set in order to make change on the students' attitude toward packaging was donating the used milk cartons. In the first week, only one student brought the carton for donation. In the later weeks, however, the number of the students was increasing, which evidenced that the students had changed their attitude in a better way. Tansakul (1998) explained that behavior is all reactions and activities-both concrete and abstract that human exhibit. Behavior is comprehensible via the sensing of verbal and acting expressions. There are two behavioral types, overt behavior and covert behavior. Overt behavior is the external behavior which can be evaluated by using particular measuring tools or by observation. Covert behavior, on the other hand, is an internal behavior relating to thought and mental process which cannot be observed by others. Suttirattanasak (2009) conducted a research into the consumers' behavior on the packaging made from the by-products of sugarcane waste. It was revealed that most of her participants knew about the packaging that was produced from the sugarcane waste but they did not buy this product on the first place. However, the people decided to buy the natural friendly packaging after they had learnt about its environmental and health values. Similar result was observed in a study of Siriwongsanon (2005) who investigated the consumers' attitude on the canned drinking products. It was reported in this study that most participants were acknowledged about the pros and cons of different types of packaging materials. The participants rated bottle containers as the packaging that had the best quality, followed by plastic and aluminum containers. Carrying convenience was a criteria that helped people decide what packaging material they would buy. The above studies show that the environmental studies manual is an effective tool that makes the students become more aware of the importance of environment. Additionally, the use of environmental promotion manual also triggers positive behaviors relating to environmental protection.

Suggestions

Suggestions for the application of the research result

1. The manual for the promotion of environmentally friendly packaging should be introduced to all levels of students in the school in order to generate holistic environmental improvement in the school.
2. The students should spread their knowledge about the promotion of the environmentally friendly packaging to the community.

3. The manual should be applied as a part of the school instruction to cultivate the sense of environmental preservation to all students in the school and to encourage the students to use the products with the packaging that is save for the nature.

Suggestions for future research

1. Comparative study should be conducted to investigate the effects that different types of packaging have on the environment.

2. The future research should investigate the time that it takes for different kinds of packaging to decompose.

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