THE ENVIRONMENTAL CONSERVATION BEHAVIOR OF UNDERGRADUATE STUDENTS IN PRINCE OF SONGKLA UNIVERSITY, PATTANI CAMPUS

NOPPHANON KACHORNSAKNUKUL

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF EDUCATION
(ENVIRONMENTAL EDUCATION)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2002

ISBN 974-04-1305-6

Thesis
entitled

THE ENVIRONMENTAL CONSERVATION BEHAVIOR OF UNDERGRADUATE STUDENTS IN PRINCE OF SONGKLA UNIVERSITY, PATTANI CAMPUS

.....
Mr.Nopphanon Kachornsaknukul
Candidate

.....
Lect. Pattaraboon Pichayapaiboon, Ed.D.
Major-Advisor

.....
Assoc.Prof. Rachanont Supapongpichate, Ph.D.
Co-Advisor

.....
Asst. Prof. Prakairat Sukumalchart M.S.
Co-Advisor

.....
Prof. Liangchai Limlomwongse,Ph.D.
Dean
Faculty of Graduate Studies

.....
Assoc.Prof. Waraporn Srisupan, M.Ed.
Chair
Master of Education Programme in Environmental Education
Faculty of Social Sciences and Humanities

Thesis
entitled

THE ENVIRONMENTAL CONSERVATION BEHAVIOR OF UNDERGRADUATE STUDENTS IN PRINCE OF SONGKLA UNIVERSITY, PATTANI CAMPUS

was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Education (Environmental Education)
on

March 26th ,2002

.....
Mr.Nopphanon Kachornsaknukul
Candidate

Pattaraboon Pichayapaiboon
.....
Lect. Pattaraboon Pichayapaiboon, Ed.D.
Chair

R. Supapongpichate
.....
Assoc.Prof. Ratchanont Supapongpichate, Ph.D.
Member

Winai Nutmagul
.....
Asst.Prof. Winai Nutmagul Ph.D.
Member

Prakairat Sukumalchart
.....
Asst. Prof.Prakairat Sukumalchart, M.S.
Member

.....
Prof. Liangchai Limlomwongse,Ph.D.
Dean
Faculty of Graduate Studies
Mahidol University

Suree Kanjanawong
.....
Assoc.Prof. Suree Kanjanawong, Ph.D.
Dean
Faculty of Social Sciences and Humanities
Mahidol University

ACKNOWLEDGEMENT

The accomplishment of the thesis and also with the achievement from this study except myself, would not be possible without many people, who really make all these good things happened. I deeply appreciate Lect.Pattaraboon Pichayapaiboon, my major advisor, for his valuable guidance and assistance, altogether with his time spending a reviewing my work. I would like to particularly express my sincere thanks to Assoc. Prof. Rachanont Supapongpichate and Asst. Prof. Prakairat Sukumalchart, my co-advisors, including Asst.Prof.Winai Nutmagul for their recommendation and assistance that helped me generate many idea and made this thesis complete.

This study work was made possible by the collaboration from students in Prince of Songkla University , Pattani Campus.

Moreover, I express gratitude to Ms.Suphanee Jirasteanphong and Ms.Surangkana Maitrawattana, for devoting themselves with their full capacities to help me without any obligation.

Finally I will not be what I am today without the most significant persons in my life, who are also the greatest giver I ever had. I am highly grateful to my beloved grandmother for her support, concern, good wish and warmth, always given to me when ever I dispirited and lost all my hope. I would also like to express my gratitude to my aunts and my wet nurse for not only taking care of me but also always supporting me and fulfilling my life up to now.

Nopphanon Kachornsaknukul

4237484 SHED/M : MAJOR : ENVIRONMENTAL EDUCATION ;
M.Ed. (ENVIRONMENTAL EDUCATION)
KEY WORDS : ENVIRONMENTAL / CONSERVATION / BEHAVIOR / STUDENT

NOPPHANON KACHORNSAKNUKUL : ENVIRONMENTAL CONSERVATION BEHAVIOR OF UNDERGRADUATE STUDENTS IN PRINCE OF SONGKLA UNIVERSITY, PATTANI CAMPUS. THESIS ADVISORS: PATTARABOON PICHAYAPAIBOON,Ed.D., RACHANONT SUPAPONGPICHATE Ph.D., PRAKAIRAT SUKUMALCHART M.S., 138 p. ISBN 974-04-1305-6

This study aimed to examine levels of environmental conservation behavior of undergraduate students at Prince of Songkla University, Pattani campus and to study the dependency of environmental conservation behavior and participation in environmental activities on gender, faculty, grade point average, source of information on environmental conservation, environmental problem perception and knowledge on environmental conservation.The research consisted of a survey using questionnaire for data collection. The sample, derived from the total population, was comprised of 374 undergraduate students at Prince of Songkla University, Pattani campus. Statistical techniques applied in analyzing data were: frequency distribution, percentage, mean, and standard deviation, including chi-square test.

The findings of the study showed that most of the sample group possessed environmental conservation behavior at a moderate level. Their environmental conservation behavior significantly depended on gender, at the 0.05 level. The electricity conservation behavior did not significantly depend on any variables, at the 0.05 level. Fuel conservation behavior significantly depended on gender and information on environmental conservation, at the 0.05 level. Water conservation behavior of the respondents did not significantly depend on any variables, at the 0.05 level. Their cleanliness behavior significantly depended on grade point average and knowledge on environment, at the 0.05 level. Participation in environmental conservation activities significantly depended on faculty, at the 0.05 level.

It is recommended that the University's activities should be focused more on environmental conservation participation, particularly for the students, and also on awareness and proper behavior for ecological ethics. The University should support all activities concerning environmental conservation as well as promoting in any different ways such as exhibitions, broadcasting on the radio, slogan boards, environmental problem education contests, environmental essay contests, journals and all above mentioned should be the responsibility of the student as well.

4237484 SHED/M : สาขาวิชา : สิ่งแวดล้อมศึกษา ; ศษ.ม. (สิ่งแวดล้อมศึกษา)

นพนนท์ ขจรศักดิ์นุกูล : พฤติกรรมการอนุรักษ์สิ่งแวดล้อมของนักศึกษาระดับปริญญาตรี มหาวิทยาลัยสงขลานครินทร์ วิทยาเขตปัตตานี (THE ENVIRONMENTAL CONSERVATION BEHAVIOR OF UNDERGRADUTE STUDENTS IN PRINCE OF SONGKLA UNIVERSITY, PATTANI CAMPUS.) คณะกรรมการควบคุมวิทยานิพนธ์ : ภัทรบูรณ์ พิชญไพบูลย์, Ed.D.,รัชชานนท์ ศุภพงศ์พิเชฐ พบ.ด., ประกายรัตน์ สุขุมาลชาติ M.S. 138 หน้า. ISBN 974-04-1305-6

การวิจัยครั้งนี้ มีวัตถุประสงค์เพื่อศึกษาระดับพฤติกรรมการอนุรักษ์สิ่งแวดล้อมของนักศึกษามหาวิทยาลัยสงขลานครินทร์ วิทยาเขตปัตตานี และศึกษาความสัมพันธ์ระหว่างพฤติกรรมการอนุรักษ์สิ่งแวดล้อมและการเข้าร่วมกิจกรรมที่เกี่ยวกับสิ่งแวดล้อมและการอนุรักษ์สิ่งแวดล้อม โดยศึกษาตัวแปรที่เกี่ยวข้อง ได้แก่ เพศ คณะที่กำลังศึกษา ระดับคะแนนเฉลี่ยสะสม การรับรู้ข้อมูลข่าวสารความรู้เกี่ยวกับการอนุรักษ์สิ่งแวดล้อม การรับรู้ปัญหาสิ่งแวดล้อม และความรู้ความเข้าใจเกี่ยวกับการอนุรักษ์สิ่งแวดล้อม ในการดำเนินการวิจัยครั้งนี้เป็นการวิจัยเชิงสำรวจ โดยใช้แบบสอบถามกับนักศึกษาระดับปริญญาตรีมหาวิทยาลัยสงขลานครินทร์ วิทยาเขตปัตตานี จำนวน 374 คน ทำการวิเคราะห์ทางสถิติโดยการแจกแจง ความถี่ ร้อยละ ค่าเฉลี่ย ค่าเบี่ยงเบนมาตรฐาน และการทดสอบความสัมพันธ์ด้วยสถิติไคสแควร์ ผลการวิจัยสรุปได้ดังนี้

กลุ่มตัวอย่างส่วนใหญ่มีพฤติกรรมการอนุรักษ์สิ่งแวดล้อมในระดับปานกลาง ซึ่งเมื่อวิเคราะห์หาความสัมพันธ์ระหว่างพฤติกรรมการอนุรักษ์สิ่งแวดล้อมกับตัวแปรที่ศึกษาพบว่า พฤติกรรมการอนุรักษ์สิ่งแวดล้อมขึ้นอยู่กับ เพศ อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 พฤติกรรมการอนุรักษ์พลังงานไฟฟ้าไม่ขึ้นอยู่กับตัวแปรใดๆ อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 พฤติกรรมการอนุรักษ์พลังงานเชื้อเพลิงขึ้นอยู่กับ เพศ และ การรับรู้ข้อมูลข่าวสารความรู้เกี่ยวกับการอนุรักษ์สิ่งแวดล้อม อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 พฤติกรรมการอนุรักษ์พลังงานน้ำไม่ขึ้นอยู่กับตัวแปรใดๆ อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 พฤติกรรมการรักษาความสะอาดขึ้นอยู่กับ คะแนนเฉลี่ย และความรู้ความเข้าใจในการอนุรักษ์สิ่งแวดล้อม อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 การเข้าร่วมกิจกรรมเกี่ยวกับสิ่งแวดล้อมและการอนุรักษ์สิ่งแวดล้อมขึ้นอยู่กับ คณะที่กำลังศึกษา อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05

ข้อเสนอแนะที่ได้จากวิจัย ควรมีการปรับปรุงกิจกรรมในมหาวิทยาลัย โดยเน้นให้นักศึกษามีส่วนร่วมในกิจกรรมการอนุรักษ์สิ่งแวดล้อมให้มากขึ้น ปลูกฝังความตระหนักและพฤติกรรมที่เหมาะสมต่อจริยธรรมสิ่งแวดล้อม ในส่วนของมหาวิทยาลัยควรส่งเสริมให้มีการจัดกิจกรรมเผยแพร่ความรู้ต่างๆ เกี่ยวกับการอนุรักษ์สิ่งแวดล้อมในรูปแบบต่างๆ มากกว่าที่ปฏิบัติอยู่ เช่น การจัดนิทรรศการ การตอบปัญหาสิ่งแวดล้อม การจัดทำวารสาร เป็นต้น โดยเน้นให้นักศึกษาเป็นผู้รับผิดชอบและมีส่วนร่วมในกิจกรรมต่างๆ อย่างเสรี

CONTENTS

CONTENTS (Cont.)

CONTENTS (Cont.)

CONTENTS (Cont.)

LIST OF TABLES

LIST OF TABLES (Cont.)

LIST OF TABLES (Cont.)

LIST OF TABLES (Cont.)

LIST OF TABLES (Cont.)

LIST OF TABLES (Cont.)

CHAPTER I

INTRODUCTION

1.1 Significance of the Problem

Previously, the nature and environment have been gradually changed; it can be changed in self-balance. Man has related with the environment closely. Anyway, more increased and comfortable requirement of man, more demand and consumption of natural resources for basic of human living are beyond care. Though the birth rate control in Thailand is most successful at 1.4 percent in B.E.2543. However, the birth rate in some part of Thailand are still high such as hilltribe in northeastern and northern part and also different group of morns in southern part. These group are the lower income group (P. Nutalai, 1992: 97). In addition, the lack of knowledge and technology application of people, they cause the environmental problem run faster (The Environmental Research of Chulalongkorn University 1999:1) as K. Rungsyabhan (1978:1) said that the environment problem has 2 main causes are increase of population and advancement caused to the problem of economics and social; that is the deforestation, flood, water pollution, green house effect, air pollution in big cities.

As we studied the cause of the above environmental problem, we found that man is the main cause of that problem, the reason is that they consume and change the environment without knowing and understanding, as A. Charensilp (1982:97-99) said " Man is the main cause of environmental destruction." The action with or without intention of man, the rate and speed of natural resources destroyed are becoming more

and more because of lacking knowledge and understanding in environment: Thus the environment is indispensable to human being. It provides food, cloth, medicine, housing and other facilities for human being (K. Chankaew 1978:1)

To solve the problem of environment, it may be better to emphasize the human behavior rather than by applying the technology for the problems happened and lastlong arise (The board of national environment office 1978:18). In addition to develop and create the population mind and behavior on how to live together with nature properly is the main important factor, by changing mind of conquer environment to adapt how to live with nature peacefully called "Land Ethics" Dr.Praves Vasee gave the comment that the problem of environment arise because man is far beyond in subconscious for that all actions man do are the environmental behavior (cited by K. Kaewthep 1994:7) and Precha Paempongsarn (cited by board of national environment office, 1991) has the comment that environment problem can be solved by developing mind of people the environment, all of them should study and understand the ecology called "Ecological ethics- all doing to destroy environment and nature is not the wish".

This, to solve the environment problem can be done in short term and long term. For short term, the main campaign is the protection of hazardous substances concerned to the environment, more law control, for long term, the most potential for permanent solving the environment is the education, the reason is that the education will change the behavior, value, mentality of man not to behave or act like the previous and also it will create the knowledge, comprehension, recognition, problem knowing ability and good relation between man and nature. It must be for encouraging the knowledge, thinking, tactic, ideal for ourselves, social and

environment in order to solve and support each other between life, social and environment (V. Kongpul, 1976:39). Environmental education is the standard of permanent solving problem (V. Veerawattananont 1986:24).

S. Lukanavichien (1972:85-88) is one who comments regarding the environment problem solved by education "To educate people for knowing, understanding, recognizing to the environment, participating, undo some transaction in order to solve the problem is the development of environment". In addition, Pasom Tonchamras (cited by S. Yuwachat 1989:2) has the guideline of education or nature and environment conservation as follows:

1.To educate the natural resources utilization at the primary school all over the country.

2.To educate the natural resources and environment conservation at all level of education from primary to high school.

3.To provide curriculum of natural resources and environment conservation related to the other curriculum as science, social science, engineering, economics and etc. in order to make the students more understand and action in proper way.

4.To educate and gain experience to the natural resources and environment conservation must be acted both inside and outside classroom for getting more profound understanding.

To solve the environment problem by education at Belgrade conference concentrate to the achievement of environment study by participation. That means to encourage people and social concern to solve the problem in all level. Moreover, Famham (1975:8) has the same comment that is to teach the environment study in the

best way must be provided the activities in the curriculum for teachers and students to find out the real environment at the outside class. This supports the speech of Dr. Kovit Vorapipat (cited by Y. Supanwongse and R. Lowwachrasanti 1988:6) that the campaign for solving the environment should concentrate on the teenagers on the real practice.

Education is indispensable for all people since the environment problem will be declined. To educate for gaining idea and guide to the right action is the core or environment conservation. It must be done continuously in order to effectively solve the problem all over the world. As we know, the efficiency conservation is come for the effective education.

Prince of Songkla University, Pattani Campus is the sector of Ministry of University Affairs provides the 3 faculties and 1 college as Faculty of Humanities and Social Sciences, Faculty of Science and Technology, Faculty of Education and Islamic College. The university recognizes the environment by setting the course of environment social sciences as the core course in the curriculum of bachelor degrees. It is managed by Department of Geography in Faculty of Humanities and Social Sciences in order to purpose the study of the relation between man and environment, consideration of influence of environment between social, population, economics and culture through the effect of social development to the environment. It will lead to protect and solve the environment problem including the effective conservation.

Prince of Songkla University, Pattani Campus create the students for labor market in mass, the student in university level will have the high adjustment and change in physical body, mental and vision. The curriculum of environmental education has been purposed to train the students for recognizing the effect of

environment to social and create the philosophy of environmental education to protect and solve the present environment problem. The student has the potential ability to solve the problem and participate to environment conservation.

Prince of Songkla University, Pattani Campus 's student is the teenager who has the knowledge of environment according to the curriculum provided. They have the social mind to conserve and act to the environment as well because they adequately maturize to learn, acknowledge the problem, conservation and side effect of the environmental problem. After their graduation, they will be the key role in social to protect and solve the said problem. Therefore, researchers are interested in studying the conservation behavior of Prince of Songkla University, Pattani Campus 's student in order to encourage and adjust or rectify the behavior further. In addition, it will be the relevant data in setting and effective developing the curriculum of environmental study.

1.2 Objectives of the Study

1.To study the level of environmental conservation behavior of Prince of Songkla University, Pattani Campus students.

2.To study the dependency of the environmental conservation behavior of students on gender, faculty, grade point average, information perception on environmental conservation, environmental problem perception, knowledge on environmental conservation.

3. To study the dependency of the participation of student in environmental conservation activities of university on gender, faculty, grade point average, .

information perception on environmental conservation, environmental problem perception, knowledge on environmental conservation.

1.3 Research Questions

1.Which level of the behavior of environmental conservation of Prince of Songkla University, Pattani Campus students possess?

2.Do the environmental conservation behavior of students in Prince of Songkla University, Pattani Campus depend on gender, faculty, grade point average, information perception on environmental conservation, environmental problem perception, and knowledge on environmental conservation?

3.Do the participation of student in environmental conservation activities in university depend on gender, faculty, grade point average, information perception on environmental conservation, environmental problem perception, knowledge on environmental conservation?

1.4 Scope of the Study

This research aimed to study merely the students studying in Faculty Humanities and Social Science, Faculty of Education, Faculty Science and Technology, as well as Islamic College in Prince of Songkla University, Pattani Campus in second semester, academic year 2000.

1.5Definition of the Terms

1.Behavior means the manner of conducting oneself or the response of an individual to its environmental conservation

2.Environmental conservation means preservation, prevention, maintenance, and knowing the way to consume energy economically. In this research, environmental conservation means taking the most advantages from consuming electricity, fuel energy, water, including cleanliness in the university and domicile area as well as in public.

3.Grade Point Average means the average grade from the first semester to the current one which were devided into 3 groups:

3.1 The students with grade point average between 1.00-1.99 possessed the low level of learning achievement

3.2 The students with grade point average between 2.00-2.99 possessed the moderate level of learning achievement

3.3 The students with grade point average between 3.00-4.00 possessed the high level of learning achievement

4.Knowledge on environmental conservation means fact, information, rules, things, people, and details on environmental conservation from experiences or observation which the sample group had been accumulating and ready to express out through their behavior.

5.Environmental Problem Perception means to provide stimulate causing the students interpretation, knowledge, understanding, as well as individual vision on environmental problems inside and outside the university.

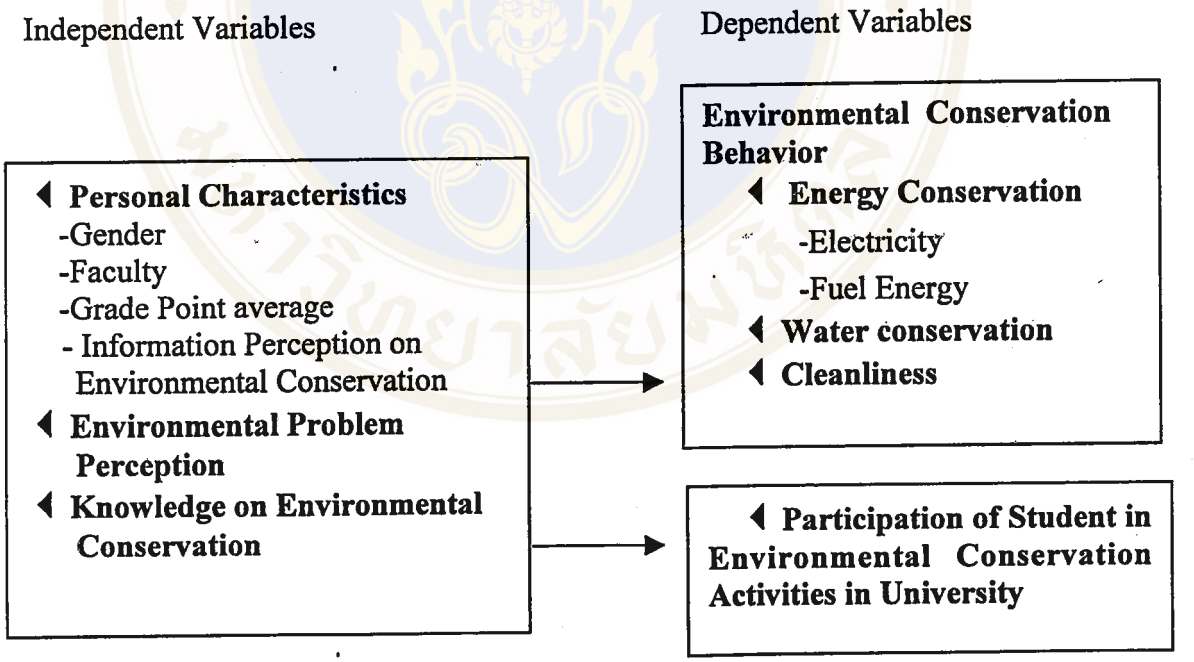
6.Information Perception on Environmental Conservation means to perceive knowledge on environmental conservation i.e. electricity, fuel energy, water, cleanliness through media such as radio, television, VDO, newspaper, magazine, article, internet, and document.

1.6 Variables of the Study

1. Independent variables such as gender, faculty, grade point average, . information perception on environmental conservation ,knowledge on environmental conservation, environmental conservation activities participation of students of the university, the environmental problem perception.

2. Dependent variables are the behavior of environmental conservation as energy conservation (electric and fuel energy), water conservation, cleanliness, and participation of students in environmental conservation activities in university.

1.7 Conceptual Framework of the Study



1.8 Research Hypotheses

1.The undergraduate students possessed the moderate level of environmental conservation

2.The behavior level of environmental conservation of Prince of Songkla University, Pattani Campus students depend on gender, faculty, grade point average, . information perception on environmental conservation, environmental problem perception, knowledge on environmental conservation at the 0.05 level.

3.The participation of student in environmental conservation activities in university depend on gender, faculty, grade point average, information perception on environmental conservation, environmental problem perception, knowledge on environmental conservation at the 0.05 level.

1.9 Assumptions

In this work, limitation of the research is using the questionnaire as a tool to study environmental conservation behavior as the result of the respondents who might not have answered on the true basis. The researcher, therefore, would like to inform you that all answer from the respondents were regarded as the truth.

1.10 Contribution of the Study

The result in this research depicted environmental conservation behavior of the undergraduate students in Prince of Songkla University ,Pattani Campus as well as factors relating to behavior which could be useful and be guidelines for educational management and development of teaching and learning in environmental conservation for undergraduate students. In addition, this could lead to promote attitude towards environmental conservation for practical performance.

CHAPTER II

LITERATURE REVIEW

The researcher studied for a base and a way to research on environmental conservation behavior of the undergraduate students in Prince of Songkla University Pattani Campus. The study is consisted of five parts: study of behavior, concept of knowledge, concept of perception, study of environmental conservation and the relevant researches.

2.1 Study of Behavior

2.1.1 Meanings of the behavior

P. Suwan (1983: 15) said "Behavior means all kinds of activity human done visibly or invisibly such as walking, speaking, feeling, attention." It is in agreement with C. Witchawut (1980: 1), stating that behavior means human actions with conscious or unconscious and whether others observe the actions such as speaking, walking, twinkling, hearing, understanding, getting angry and thinking, etc. All actions are behavior.

According to definitions, behavior means action or reaction of human occurred objectively and contemplatelively as well as others can observe or can not observe.

For this research, it gives the meaning of behavior that action or reaction of the undergraduate students of Prince of Songkla University Pattani Campus on environmental conservation measured by questionnaires of the researcher.

2.1.2 Composition of Behavior

P. Suwan (1983 : 15 -17) said that Psychologists believe behavior derived from action of man or organism to environment and referred to a theory of Benjamin S. Bloom consisted of three parts :

1. Cognitive Domain it is concerned with perception and recognition truth including capability and intellectual skill development for using judgement to decide. This behavior is composed of many level of capability such as Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation.

2. Affective Domain it means attention, opinion, manner, satisfaction, dissatisfaction, valuation, change acceptance or value improvement. These are behaviors in one's mind hardly explainable. The behavior consist of five steps : Receiving or Attending, Responding, Valuing, Organizing and Characterization by a value.

3. Psychomotor Domain this behavior is ability of physical expression including action or behavior in a situation or it may be tardy behavior that a person does not act immediately but anticipate to act next. The psychomotor domain is the last step behavior to the purpose of studying depend on the above-mentioned level of behavior.

2.1.3 Types of Behavior

Action and expression of human not only thinking and word but also action and manner are important because people live together in a society. There are many ways to classify human behavior. S. Supanthad (1983 : 98) classified 2 types of human behaviors :

1. Covent Behavior is action or activity in a person. The brain serves the function of compiling and commanding to act. The concrete action such as heart-beating, intestine-squeezing and abstract action such thought, feeling, attitude, belief and value that are in one's brain can not be observe.

2. Overt Behavior is a reaction or activity of a person. Words, action, manner as speaking, laughing, eating, cleaning and planting are visible actions. Overt behavior is the most essential factor to live with other people and significantly cause environmental conservation.

2.1.4 Measurement of Behavior

Each person has various behavior both covent behavior and overt behavior. Therefore, there are many ways to study behavior. Overt behavior can be studied directly and indirectly. While covent behavior can be measured indirectly by interview, using questionnaires as well as making an experiment in a laboratory and in a community; thus, the instruments for measuring behavior may be questioning, interviewing or using other instruments like a Sphygmomanometer (blood-pressure measured instrument), a Strepthoscope.

Somchit Supanthad (cited by S. Cheentham,1989:24) said to two ways of behavior study as the following:

1. Direct way of behavior study can be divided to two part ways.

1.1 Direct observation; for example, a teacher observes students behavior in a classroom but tell them before observing what they do. This observation can not be gotten fairly result because some students may untruthfully act.

1.2 Naturalistic observation, is that, a person act normally and truly under the observation of the observer. This observation will reach the desirable result.

2. Indirect way of behavior study can be divided to several parted ways.

2.1 Interview is the way that the research inquires details from a person or a group by direct interview or using an interpreter for different languages.

2.2 Questionnaire is a suitable way for studying behavior in any number of literate people. It can also be used for remote and sparse people ; moreover, inquiries might use for studying former and prospective behavior.

2.3 Experiment is the study behavior that the variables are under controlling of the tester in a laboratory but in fact we can hardly control variables in a real community.

2.4 Record helps us know about one's behavior by making his own diary or studying each type of behavior.

For the study in environmental conservation behavior of the undergraduate students of Prince of Songkla University Pattani Campus, the researcher studies indirect ways by using questionnaires.

2.2 Concept of Knowledge

2.2.1 Meaning of Knowledge

Dictionary of Education defines "knowledge" as the fact, the truth, the rule, and information that a person has acquired through experiences. (Carter V. Good, 1973 :325)

P. Suwan (1983 :10) defines "knowledge" as a basic behavior of the student just remembering or thinking, perceiving and hearing such as knowledge of definition, meaning, fact, theory, and structure of solution, etc.

W. Wongyai (1993 :13) said "knowledge" is a basic behavior that the student remember and recognize by seeing and hearing. Herein, knowledge is the fact, the rule or the definition.

In summary, "Knowledge" means the fact, information, rule, situation, objects, people and details come from study, experience, observation that is a collective memory. Then men express naturally and recognize behavior that it is noticeable, observable and measurable.

2.2.2 Level of Knowledge

Bloom et al (1975 : 10-24) classified "Cognitive Domain" into six levels as the followings.

1. Knowledge it is the capability of brain to remain or reserve any matters. Measuring the capability of a person how much they can remember. We look how much the person choose to remember.

2. Comprehension is the capability of communication between 2 persons to make understanding to each other.

3. Application is the capability of applying knowledge to solve a problem effectively. It does not mean imitative learning but it is capability of solving the problem or a new situation to be completed.

4. Analysis is the capability of consideration any matter in each part.

5. Synthesis is the capability of combination each part to become a matter ; therefore, it is the capability of consideration the matter in various characters and then systematize the structure to better the new matter effectively.

6. Evaluation is the capability of decision, valuation on criteria and standard.

2.2.3 Measurement of Knowledge Level

There are many types of measurement device. Each type is appropriate with various characteristics of knowledge measurement. This study refers to a popular measurement device as a test (B. Kitpreedaborisut, 1988 :21-25).

2.2.3.1Meaning and Characteristic of the Test

Brown (1976 :7) defines the test is a systematic procedure for measuring behavior sample. There are three important characteristics.

1.Test in Systematic Procedure means the test has a certain rule about management structure and score.

2. Test in behavior measurement that particularly indicates some measurable behavior. The respondent replies the limit questionnaires. It does not be direct measurement.

3. Test as sample of all possible items, in fact that, there is no any test indicating all of behavior. Item; therefore, of the test are sample of all possible items and so each item has an equal score.

2.2.3.2Types of Test

There are many characteristics of behavior such as form of application and purpose. Types of test are classified as the followings :

1. Psychological characteristics are divided into 3 types.

1.1Achievement Test is the test on Cognition Domain come from learning.

1.2 Aptitude Test is the test on brain efficiency.

1.3 Personal-Social Test is the test on personality and adjustment

2. Asking –Answering form characteristics are divided into 2 types.

2.1 Essay Test the respondents must compose his answer by himself

2.2 Short Answer and Multiple Choice Test the respondents choose any set answer in the test.

3. Answer Characteristics are divided 3 types.

3.1 Performance Test is the real action test such as drama playing, skill test, typing, etc.

3.2 Paper-Pencil Test is the general test such as a writing test.

3.3 Oral Test is an interview instead of writing test.

4. Time Characteristics are divided 2 types.

4.1 Speed Test is the test under the limit of time.

4.2 Power Test is the test without the limit of time.

5. Standard Characteristics are divided 2 types.

5.1 Criterion-Reference Test is the test with objective of learning or external standard which is mainly an academic matter.

5.2 Norm-Reference Test is the test compared among tested groups.

For this study, the researcher used the procedure of psychological characteristics as the Achievement Test and the form of asking-answering as the Multiple Choice Item and Paper-Pencil Test in measurement knowledge by the theory of Bloom et al on knowledge, comprehension, application, analysis, synthesis, evaluation.

2.3 Concept of Perception

2.3.1 Meaning of perception

Pinnegan et al (1975 : 1100) gave the meaning of perception that expression of knowledge, attention happened in one's mind. Similarly to the work of S. Charoensuk (1979 :24) stated that perception or signal as being aware of any matter and any status that stimulate a person and so the person translates that these actions are meaningful and become individual comprehension.

S. Chan-Ame (1981 :254) gave the meanings of perception as the following.

1. Perception is the arrangement of compiling and defining system with sensation.

2. Perception is the procedure that living things receive many matters with organs of touch as the media.

3. Perception means the procedure between stimulation and response as

stimulation → perception → response

Conclusively perception is stimulation of the person to explain and so it become knowledge and comprehension, then the vision of each person would make the benefit of perception to oneself and the other.

2.3.2 Process of Perception

J. Chuangchote et al (1983 :3) stated that the process of perception consists of

- Senses of touch mean the reaction of touching organs to stimulation.

- Interpretation from senses of touch is the significant part of interpretation, which depend on intelligence, wisdom, observation, concentration, attention and quality of mind.

- Experience for interpretation such as an idea, knowledge and action occurred to the person. Experience plays an important role in interpretation and so the good interpretation is described that the knowledge is certain, correct, clear, large quantity or there are many branches of knowledge to interpret well.

In conclusion, process of perception is the step of perception starting from looking, touching, hearing from stimulants. And so feelings and interpretation are occurred. The interpretation from experience brings to perception.

2.3.3 Factors of Perception

Factors of perception are divided mainly 2 characters as characters of receiver and characters of stimulant (S. Wongsawan,1982 :79 -105)

1. Characters of receiver

A person choose to perceive before or after and more or less. It depends on the characters of receiver divided 2 aspects as the followings.

1.1 Physical aspect such as gender, race, education that effect to perception differently.

1.2 Psychological aspect influences to perception in various respects such as memory, consideration, attention, intention, skill, value, culture, etc that derived from experience.

2. Characters of stimulant

External characteristics make a person interested in perception or may cause inexact perception.

2.4Study on Environmental Conservation

2.4.1 Meaning of Environmental Conservation

T. and T. Thongsawang (1980 :1) defined that conservation means keeping all things around us such as resources and environment long-lasting, unchanged and invulnerable. It correspond with the work of Kasem Chankeaw (1987 :99) stated that conservation means keeping, reserving, repairing, improving and applying natural resources and environment to support the high quality of human living. Kasem Chankeaw (1982 :65) said that environmental conservation is the reasonable application of environment to support the good quality of human living.

According to the meaning, the researcher conclude that environmental conservation means application of collected environment correctly, properly and worthily. For this research, the researcher defines environmental conservation that means reserving, maintaining, keeping, protecting and applying environment most frugally, worthily, beneficially on electrical energy, fuel energy, water and cleanliness.

2.4.2 Purposes of Environmental Conservation

Department of Environment Quality Promotion (cited by W. Chantarasen, 1986 :23-24) stated that the main purposes of environmental conservation consists of 4 parts

1.To maintain the significant factors influencing on man and animal and the living support system. It is the improvement and prevention the area for planting, revolving minerals for vegetation food as well as keeping water clean.

2.To preserve the dispersion of species depend on the project of species expansion necessary to improve and prevent vegetation, domestic animals and microbe as well as scientific invention and technology including the international business protection used the living resource as the raw materials.

3.To be a warranty on using vegetation, animal and ecological system for living appropriately and for many main industries.

4.To reserve the ancient places, antiques, art work that are the precious heritages to the next generation including other man-made environmental systems.

2.4.3 Concept on Environmental Conservation

In the past the development of human was in the low level; therefore, less environment was damaged due to a small number of population and low level of technological consumption. V. Veerawattananond (1986 :54) stated that the beginning of concept on environmental conservation is when man knew how to use a fire and then burn and clear a forest for planting. Environmental destruction have been increasing seriously as much as an increase of population and land using. And then man know the way to use energy such as coal energy, steam energy, fuel energy throughout nuclear energy. Environment is destroyed so severe that it dangers man.

2.4.4 Principles of Environmental Conservation

There are three principles of environmental conservation (K. Chankeaw, 1987 :100)

1. Skillful application, that is, carefully we consider advantages and disadvantages of resources usage, lack and rareness of resources as well as principles of economics throughout.

2. Rare resource preservation means any few and rare resource should be protected from being vanished. In addition, some available resource must be used economically.

3. Finding out the ways to refine a suffering environment. Any resource will be under risk to be all used up if it is not used theoretical way. Thus, it should be improved to get better.

2.4.5 Ways of Environmental Conservation

Department of Environment Quality Promotion stated the way of environmental conservation as the followings.

1. Providing people the information to motivate their thinking of roles and duties to environment in order that they change their behavior to support the environment quality.

2. Quality improvement is the direct way to solve problems of resources lack and suffered environment.

3. Decreasing the rate of waste is using resource benefit worthily instead of consuming resource lavishly.

4. Recycling is bringing ruinous materials or instruments back to use again by re-melting or crushing and then reproducing.

5. Using substitute, resources became depleted because of high consumption. It, thus, is necessary to look for other resources instead of exhausting resources with the similar quality such as solar energy, water energy or sea wave energy instead of petroleum.

6. Using the second value materials, the same type of natural resource may have different quality such man likes using hard wood because of strength and durability and then the hard wood is decreased. Man, therefore, solves this problem by using the second level quality maintaining ways of wood such as saturating or steeping into the chemical solution.

7. Protection is the direct management way of natural resources and environment conservation. It helps natural resources and environment not become depleted and deteriorated rapidly, in addition, it protects water from poison gas and toxin.

2.4.6 Criteria for Environmental Conservation

Environment is damaged so much that it has a dangerous effect to human living. Protection of environment from deterioration depends on strict cooperation between government and people, therefore, they have to conduct of governmental policy. (S. Polsin, 1988 :196-197)

S. Thoecharoen (1980: 7-10) stated criteria for environmental conservation as the following:-

-Direct Criteria

1. Reservation means preserving the resource and also restricting the resource application in order to protect it from destruction.

2. Restoration of all resources such as soil, water, forest, wild animals. These resources can be possibly restored or become appropriated condition.

3. Benefication held the principle that man can increase products more than nature does such as sand beach conditioned for planting.

4. Effective production and more efficient use of resources in order to keep them for long term and most people.

5. Re-use is bringing the expired resources back to modify or to reproduce.

6. Substitution is the principles of :

-using possible restorative resources instead of impossible restorative resources

-using plentiful resources instead of scarce resources

-using available resources instead of rare resources

7. Quality and quantity inspection of resources and skillful application of resource, that is, know about nature, origin, quantity and importance of resource before using to get the most benefit of resource.

-Social Criteria

Society should be responsible and collaborate on resource conservation in several ways as

1. Public cooperation such proceedings to conserve resource on an association or a club format.

2. In control of laws that is a significant device to achieve resource conservation effectively even taking long time. The government has to work compactly or to promulgate an updated laws and it has no gap to give benefit to grasping people destroy the public.

3. Education is more necessary because the public should be educated in how to use resources or what environment problems are. The task of educating people to respect the environment and value the resource. Every level of academic curriculum should be inserted knowledge of environment and people should be given the information throughout mass media and training courses interest people to conservation and also help make resource and environment conservation to be reached the target.

This study on environmental conservation involves in 3 aspects as

1. Energy conservation
2. Water conservation
3. Cleanliness

2.4.7 Energy Conservation

Due to the expansion of industries, it has caused a high. Energy consumption as the most used resource is petroleum in case of transportation. In the rural area, they develop transportation and electricity to use for their facility. Widely the electric appliances are used such as an air-conditioner, an iron, a refrigerator, a microwave oven, etc. Such appliances run by electric energy mostly produces of petroleum and some energy is all used up and can not reproduce so that there is lack of energy.

Energy conservation means people take advantages of energy worthily, effectively and effectively without a waste. It is the right way to use energy.

2.4.7.1 Concept of Energy Conservation

Office of Environmental Policy and Planning (1997 :36-37) assigned policies and methods to proceed the energy resource in 1997-2016 on 3 respects as

1. The policy to save energy and use it efficiently without natural balance destruction.

2. The policy to develop and provide energy resource having sufficient amount to people's demand with consideration of natural balance.

3. The policy to develop production technology and to use energy efficiently, frugally, less pollution.

2.4.8 Water Conservation

Water resource is extremely necessary to human living. Man uses water for consumption such as drinking, washing, cooking, cleaning, farming, planting and being a birth of place of aquatic animals and plants. For the industry, it uses water for production process, waste washing, lubricating, machinery and reducing heat, not only

that water is an energy resource to electric planting and also is a way of transportation as well as a recreation place.

There are many sources of water such as rain, river, canal and underground water. The water source in Bangkok is underground water as one of three. It excludes underground water as supplied to homes, schools, hotels and factories non-supply by the government service (W. Chansen, 1996 : 33). Not only the quality of water is supplied sufficiently to human demand but the quality of water is also bettered. Water must be pure, smelless, colorless, germless and low calcium –calcium causes hard water.

Accordingly to the above-mentioned importance, we should make criterion to the high quality and sufficient quantity of water. Water conservation is a good way to save water enough for human demand. Water conservation means using water frugally, no dropping the waste into water source, in addition keeping water clean. Man uses water for consumption as drinking water, cooking water, washing water, agriculture, industry, transportation, energy production, recreation and other convenience.

2.4.9 Cleanliness

Cleanliness shows to the development and disciplines of people. It helps man to live without disease. Everyone must help to keep their own homes clean; for example, they do not drop rubbish , excretion , soil, slush, stick, or spit on a path, a ditch, a river and public places as well as they should dust off their homes to be clean (S. Yuwachart, 1989 : 22). If we do not keep clean, it will affect to man and environment and also cause health problems. Likewise dirt is a pollution problem and shows to cultural deterioration. As a propagated place of disease carriers, rubbish

scattered all over causes an epidemic to people and a bad smell.(N. Horrattanachai, 1975 :16) in addition, the rubbish clogged the drain pipes causes the inundation people's health and lack of discipline, grandeur in a society.

Rubbish, an environmental problem, causes the pollution problem of soil and water. The rubbish have not been collected yet and scattered all around by that means it makes the sight-seeing bad and reluctant affected to seers and residents. Besides, the rubbish which blocked the drains causes the inundation and contaminated water is also available for conservation. In case of quality development as the water-supply system, when water is very dirty, the steps of production process will be increased as that there will be a large amount of expense.

According to these actions, the rubbish problem might occur because of activities' people carelessly or intentionally, or not. It becomes the pollution problems permanently bring about environmental ethics and development to lift up the public's standards of living. (V. Veerawattananond, 1986 : 6) The ways to prevent and solve the problem of cleanliness can be done by giving knowledge to people about rubbish elimination and reduction of consumption products caused pollution such as plastic, tin as well as technology application for recycling.

2.5 Related Researches

According to revision of the related researches on environmental conservation behavior of undergraduate students of Prince of Songkla University Pattani Campus as :

W. Warapuk (1981: 49-50) studied on "Environmental Ethics of Students in Bangkok", which found that Prathomsuksa 6 students and Mathayomsuksa 5 students

had difference in statistic significance and show that level of environmental ethics of students whose parents had difference of occupation and income is different but not in statistic significance.

V. Pattanawongtham (1981: abstract) researched on "Attitude on Forest Conservation of Students in Southern Teaching University", which found that variables as gender, native habitat and attendants in environment club affect to the attitude on forest conservation that is different at the 0.05 level.

A. Reekittisirikul (1987 :70-76) studied on "Environment Quality Support and Preservation Behavior of Secondary School Students in Bangkok", stating that students possessed level of behavior at a good level, in addition male and female students had difference of behavior.

Base on the researches on environment conservation behavior of students, it were found that difference of the students' environment conservation behavior depend on the following variables.

Gender

In Thai society the behavior is set to express differently because of gender. Male and female have difference on goal of life, social behavior, intelligence, opinion and problem vision. (S. and S. Chan-Ame, 1974 : 46-51) And the study of Jones (1954 : 781-782), cited by V. Maneechote (1992 : 30), was found that social instruction to each gender of children is different. It makes boys and girls have different behavior. The study of S. Yuvachart (1989 :88) about "A Study of the Environmental Conservation Behavior of the Vocational Student under the Department of Vocational Education in Bangkok". This study depicted that vocational students possessed level of environmental conservation behavior depend on gender.

Faculty

The different faculties might be a factor to cause different behavior due to the study in each faculty is emphasized different subjects. A study of B. Tharnsumrit (1977 : 87-95) on "Knowledge and opinion of Secondary School Teacher in Bangkok on Dirty Environment" showed that the knowledge between science teachers and other branch teacher has difference at the 0.05 level. Similar to the study of T. Seangla (1986 : 73-85) on "Attitude to Environment of high School Student in Ayudhya", it revealed that sample group students in a science plan have different attitude on environment from sample student groups in other subjects plan at the 0.05 level.

Grade point average

A factor to indicate level of knowledge is grade point average. The students who possess the high level of grade point average have achievement different from the students in the low level of grade point average. It causes the difference of environmental conservation perception of the students between in classroom and out classroom that affects to the difference on value and conduction of environmental conservation (V. Maneechote, 1992 :74-86) on "Value of Energy Saving of Mathayomsuksa 5 Student in Educational area 5", it revealed that the students had difference of grade point average and so they had difference of energy saving value.

Perception Information on environmental conservation

K. Metheekul (1978 :65-78) studied on "Effect of Daily Newspaper to Secondary School Students"' which found that the newspaper as a media affected to students in positive and negative ways for their behavior. Similar to S. Ampanthong (1980: 95) about "Knowledge, Attitude and Behavior of Secondary School Administrators in Bangkok Metropolis the Environmental Problems in Thailand", it

depends on gender, native habitat, years of work experience and information perception on environmental conservation.

According to reviewing related documents and researches to variables as the above-mentioned matters, they urge the researcher to study a behavior of the undergraduate student of Prince of Songkla University Pattani Campus that depends on gender, age, faculty, grade point average, knowledge of environmental conservation, participation on environmental conservation, environmental problem perception. The variables are significant and interesting ;therefore, the researcher marked them to this research.

CHAPTER III

RESEARCH METHODOLOGY

In the research methodology, the study of environmental conservation behavior of the undergraduate students in Prince of Songkla University, Pattani Campus was classified as a survey research, which used one-short descriptive survey model or the conceptual survey description to collect data by using questionnaire as a tool. It was presented in the following details :

3.1 The Population

The total number of the undergraduate students, studying in second semester academic year 2000 in Humanities and Social Sciences, Education, Science and Technology as well as Islamic College in Prince of Songkla University, Pattani Campus was 3,487 as shown in Table 1.

Table 1 Number of the Undergraduate Students in Prince of Songkla University, Pattani Campus.

Faculties	1st Year Students	2nd Year Students	3rd Year Students	4th Year Students	Subtotal	Per-cent
Humanities and Social Sciences	365	395	375	311	1,446	42.0
Education	293	239	332	259	1,123	32.0
Sciences and Technology	181	134	136	121	572	16.0
Islamic College	145	87	63	51	346	10.0
Total					**3,487**	**100.0**

Source : The Academic Department of Prince of Songkla University, Pattani Campus , in year 2000

3.1.1 Sample Size and Sampling Technique

The sample population in this study was determined as the sample size by using Taro-Yamane formula (Yamane 1973 : 727) as following :

$$n = \frac{N}{1 + Ne^2}$$

where n = Sample Size

N = Population Size

e = Estimated Error : in this case is the probability of 0.05

Substitution

$$n = \frac{3487}{1 + 3487\,(0.05)^2}$$

$$n = 359$$

After calculated by using the Taro-Yamane formula, it was found that sample size was 359 students. However, there might have been some mistakes in collecting data so the researcher collected data from 400 students, of which number increased 41 students as shown in Table 2.

Table 2 Number of the Sample Group

Faculty	Percent-age	Sample size	Estimated Error	Subtotal
Humanities and Social Sciences	42.00	151	17	168
Education	32.00	115	13	128
Science and Technology	16.00	57	7	64
Islamic College	10.00	36	4	40
Total	**100.00**	**359**	**41**	**400**

3.2 Research Instrument

The instrument used in the research was a researcher- constructed questionnaire regarding to the following steps :

1.The first step was to study and search for the information from textbooks, previous thesis, and the research works concerning to environmental conservation.

2.The second step was to set up the scope of content for preparing questions in the questionnaire.

3.The third step was to confer with the thesis committee for guidance in constructing questionnaire.

3.2.1 The tool for collecting data

The tool for collecting data was prepared under 4 sections as following :

Section 1 Personal and General Information

The characteristic of this achievement test was a close-ended question and completion of word or phrases, focusing on general information such as gender, age, faculty, grade point average, information perception on environmental conservation, and environmental participation .

Section 2 Environmental Problem Perception

In this section, criteria for content consideration, consisting of environmental problems that the students could perceive, were taken into account. The environmental problems were all in real situation occurring inside and outside the university and Amphur Muang area.

Section 3 Knowledge on Environmental Conservation

The characteristic of this achievement test was a close-ended question, which also had four choices for each one. There was only one correct answer for each item. In addition, all levels of brain competency such as knowledge, memory, understanding, application, analysis, synthesis, and evaluation were taken into account in each item of the test of knowledge. The test also covered all contents of environmental conservation, meaning, and importance of environment as well as environmental conservation, for instance, electricity, fuel, and water conservation

including cleanliness, causes of environmental problems, guidelines for environmental conservation, and advantages of environmental conservation. If a respondent chose the correct answer, he would get one score. On the contrary, if he chose the wrong one, he would get no score.

Score measurement

- Score upper than 70% of the full scores is the good knowledge level
- Score between 50-69% of the full scores is the fair knowledge level
- Score less than 50 % of the full score is the poor knowledge level

Table 3 Criteria for Categorizing Level of Knowledge on Environmental Conservation

Scores	**Level of Knowledge on Environmental Conservation**
16-20 Scores	High
11-15 Scores	Moderate
0-10 Scores	Low

Section 4 Environmental Conservation Behavior

This section consisted 3 parts of environmental conservation behavior which were energy conservation behavior, water conservation behavior, and cleanliness behavior. In the part of energy conservation behavior, the content in each of questions which affected human's everyday life was examined and broken into 2 categories - - electricity and fuel energy conservation. All of the questions were classified by the characteristics of environmental conservation behavior as shown in Table 4.

Table 4 The Characteristics of Environmental Conservation Behavior and Outlines of Contents for Measuring Environmental Conservation Behavior.

Behavior	Outlines of Contents for Measuring Environmental Conservation Behavior
1.Energy Conservation Behavior (Electricity and Fuel Energy)	-Using electrical appliances in proper way -Consuming electricity reasonably -Consuming fuel energy for cooking and transportation rationally
2.Water Conservation behavior	-Making sensible use of water -Consuming water judiciously
3.Cleanliness Behavior	-Cleanliness in the university area, domicile area and in public -No scrawling or litter in public

The level of practice in this set of question mean :

Always : Practice every time

Sometimes : Practice on some occasions

Never : Never practice

Score Measurement

Scoring depended on the characteristic of each statement in term of positive and negative one.

Positive Statement

Practice every time 2 scores

Practice sometime 1 scores

Never practice 0 score

Negative Statement

Practice every time 0 score

Practice sometime 1 scores

Never practice 2 scores

- Score upper than 70% of the full scores is the good knowledge level
- Score between 50-69% of the full scores is the fair knowledge level
- Score less than 50 % of the full score is the poor knowledge level

3.3 The Development of the Research Instrument

Regarding to the research instrument, the researcher had been discussing with the thesis to examine the questionnaire in details for clear and accurate content. Then the questionnaire was tried out with the 40 students in Prince of Songkla University , Pattani Campus , who were excluded from the sample group, to figure out defects of the questionnaire and content understanding according to the objectives of each item. Next the test was analyzed for the difficulty and reliability as following :

3.3.1 The tools used in the test of knowledge on environmental conservation for analyzing the difficulty of a test item was an index of difficulty. Besides, the discriminating power of a test item was applied to differentiate between respondents of high achievement and respondents of low achievement by using these formulas (Blood and Buud, 1972: 126)

$$p = \frac{P_H + P_L}{2n}$$

$$r = \frac{P_H - P_L}{n}$$

Where

P = The index of difficulty

r = The discriminating power

P_H = The number of papers in the upper group with the correct answer to the items.

P_L = The number of papers in the lower group with the correct answer to the items.

n = The number of the subjects who answer the question in both groups.

The index of difficulty in each question were between 0.02-0.08. Most of the questions had the index of difficulty between 0.04-0.60 and had the value of the discrimination power above 0.02.

3.3.2 The test of knowledge on environmental conservation was used to calculated the value of the reliability by the Kuder-Richardson formula 20 (KR20) (Hopkihs ,Stanley and Hopkins, 1941: 133) as following:

$$r_{tt} = \frac{k}{k-1}\left[\frac{S_x^2 - \Sigma pq}{S_x^2}\right]$$

Where

r_{tt} = The reliability

k = The number of items of the test

S_x^2 = The total variation of total scores

p = The proportion of correct answer for each of the item

q = The proportion of incorrect answer for each of the item

The result found that the reliability in test of knowledge on environmental conservation in the building was 0.72.

3.3.3 The value of the reliability of environmental conservation behavior test was calculated by the coefficient alpha by Cronbach (Hopkihs, Stanley,and Hopkins,1941: 133) as following:

$$r_{tt} = \frac{k}{k-1}\left[\frac{1-\Sigma S_i^2}{S_x^2}\right]$$

Where

r_{tt} = The reliability

k = The number of items of the test

ΣS_i^2 = The sum of the variances of scores on the number

S_x^2 = The total variation of the total scores

It was found that the reliability of the test of environmental conservation behavior was 0.81

3.4 Data collection

3.4.1 The researcher handed in the formal letter from the dean of the Faculty of Graduate Studies, Mahidol University to the dean of the Faculty of Humanities and

Social Sciences, the dean of the Faculty of Education, dean of Science and Technology and the director of Islamic College in Prince of Songkla University ,Pattani Campus for permission in collecting data.

3.4.2 The researcher distributed the questionnaires to the population and pointed out the way to finish the test on 3rd –20th January,2001 . Then the researcher collected the data for analysis.

3.5 Data Analysis

After the questionnaires had been collected, they were verified for the accuracy of total data and the statistics package for social science (SPSS) was employed for data analysis. Statistical tools used for data analysis and hypothesis test were as following:

1.The data was analyzed to explain the personal information i.e. gender, faculty, grade point average, information perception on environmental conservation, environmental problem perception, knowledge on environmental conservation, environmental conservation behavior, and participation in environmental conservation activities by the following instruments: frequency distribution, percentage, mean, and standard deviation.

2.The tool used to explain the association between each of the independent variables and each of the dependent variables was Chi-Square-square test.

CHAPTER IV

RESULTS

The results of the study on environmental conservation behavior of the undergraduate students in Prince of Songkla University , Pattani Campus were presented in eight parts as following :

1. Personal information of the undergraduate students in Prince of Songkla University , Pattani Campus

2. Information perception on environmental conservation of the students

3. Environmental problem perception of the students

4.Knowledge on environmental conservation of the students

5. Environmental conservation participation of the students

6. Environmental conservation behavior of the students

7. Results of the association between independent variables and environmental conservation of the students

7.1 Energy conservation behavior i.e. Electricity and Fuel Energy

7.2 Water conservation behavior

7.3 Cleanliness behavior

8. Results of the association between independent variables and environmental conservation participation of the students.

The instrument appliéd in this study was a constructed questionnaire which was with the sample of 374 undergraduate students from the total number of 400 students

(93.5 percent) for figuring out efficiency of the instrument. The results were shown in frequency distribution and percentages as following :

4.1 Personal Information of the Undergraduate Students

Table 5 Numbers and Percentages Distribution of the Students as Classified by General Characteristics

General Characteristics	Number (N = 374)	Percentage (%)
Gender		
Male	118	31.6
Female	256	68.4
Faculty		
Humanities and Social Sciences	147	39.3
Education	127	34.0
Sciences and Technology	58	15.5
Islamic college	42	11.2
Level of Grade Point Average		
1.00-1.49	6	1.6
1.50-1.99	7	1.9
2.00-2.49	96	25.7
2.50-2.99	174	46.5
3.00-3.49	82	21.9
3.50-4.00	9	2.4

From table 5, it was shown that the most of students were female (68.4 percent), studied in Humanities and Social Sciences (39.3 percent), possessed grade point average between 2.50-2.99 (46.5 percent).

Table 6 Numbers and Percentages Distribution of the Students as Classified by Getting Information on Environmental Conservation

Media	Number (N= 374)	Percentage (%)
Television		
Perceived	352	94.1
Did not perceived	22	5.9
Radio		
Perceived	277	74.1
Did not perceived	97	25.9

Table 6 Numbers and Percentages Distribution of the Students as Classified by Getting Information on Environmental Conservation (continue)

Media	Number (N= 374)	Percentage (%)
Newspaper		
Perceived	322	86.1
Did not perceived	52	13.9
Magazine		
Perceived	297	79.4
Did not perceived	77	20.6
Education media		
Perceived	240	64.2
Did not perceived	134	35.8
Text- book		
Perceived	202	54.0
Did not perceived	172	46.0
Other People		
Perceived	140	37.4
Did not perceived	234	62.6
Environmental organization officers		
Perceived	76	20.3
Did not perceived	298	79.7

According to Table 6, it was found that most of students received information from environmental conservation via Television (94.1 percent), Radio (74.1 percent), Newspaper (86.1), Magazine (79.4 percent), Education Media (64.2 percent), Text-Book (54.0 percent), other People (37.4 percent), Environmental Organization Officers (20.3 percent).

Table 7 Numbers and Percentages Distribution of the Students as Classified by Getting Information on Environmental Conservation via the Most Used Media

Used Media	Number	Percent
Television	227	60.7
Radio	20	5.3
Newspaper	39	10.4
Magazine	39	10.4
Education media	28	7.5
Text book	17	4.5
Other people	4	1.1
Total	374	100.0

Table 7 showed that television was the most used media that 60.7 percent of the students found that they could receive environmental information the most. Following this were newspaper and magazine (10.4 percent) as well as radio (5.3 percent).

Table 8 Numbers and Percentages Distribution of the Students as Classified by Participation in Environmental Conservation Activities of the University

Participation in Environmental Conservation Activities	Participation		
	Participated Number (Percent)	Did not participated Number (Percent)	Total Number (Percent)
Launching environmental activities onto schools (partial fulfillment of environmental education)	113 (30.2)	261 (69.8)	374 (100.0)
Environmental conservation activities for youths	22 (5.9)	352 (94.1)	374 (100.0)
Thai Environmental day	47 (12.6)	327 (87.4)	374 (100.0)
Forest plantation	166 (44.4)	208 (55.6)	374 (100.0)
Youth training activities for environmental conservation	21 (5.6)	353 (87.4)	374 (100.0)
Forest trips	20 (5.3)	354 (94.7)	374 (100.0)
Ethics on environmental conservation	22 (5.9)	352 (94.1)	374 (100.0)
Environmental conservation seminars	28 (7.5)	346 (92.5)	374 (100.0)

According to Table 8, it was found that the largest percentages of the students who participated in Forest Plantation was 44.4 percent. Following this (30.2 percent) were the students who participated in Launching Environmental Activities onto schools. The least number of response (5.3 percent) was the students who participated in Forest Trips.

Table 9 Numbers and Percentages Distribution of the Students Classified by Times of Participation in Environmental Conservation Activities of Other Organizations

Frequency	Number	Percent
never	172	46.0
1 time	58	15.5
2 times	117	31.3
3 times	18	4.8
4 times	3	0.8
5 times	6	1.6
Total	374	100.0

Concerning to Table 9, it was shown that most of the group (46.0 percent) never participated in environmental conservation activities of other organizations. Next was 31.3 percent of the group who participated in the activities of other organizations twice. The least was 0.8 percent of the group who participated in the activities of other organizations four times.

Table 10 Numbers and Percentages Distribution of the Students Classified by Environmental Problem Perception in Prince of Songkla University, Pattani Campus

Environmental Problem in Prince of Songkla University, Pattani Campus	Perception		
	Perceived Number (Percent)	Did not perceived Number (Percent)	Total Number (Percent)
Particulate matter from building construction	197 (52.7)	177 (47.3)	374 (100.0)
Noise from building construction	121 (32.4)	253 (67.6)	374 (100.0)
Air pollution from industrial area in Pattani province	270 (72.2)	104 (27.8)	374 (100.0)
Rubbish collection	204 (54.5)	170 (45.5)	374 (100.0)
Rubbish classification	107 (28.6)	267 (71.4)	374 (100.0)
Waste water from consumption	159 (42.5)	215 (57.5)	374 (100.0)

Table 10 Numbers and Percentages Distribution of the Students Classified by Environmental Problem Perception in Prince of Songkla University, Pattani Campus (continued)

Environmental Problem In Prince of Songkla University , Pattani Campus	Perception		
	Perceived Number (Percent)	Did not perceived Number (Percent)	Total Number (Percent)
Water quality for consumption	186 (49.7)	188 (50.3)	374 (100.0)
Waste water in canals	249 (66.6)	125 (33.4)	374 (100.0)
Cleanliness of toilet and sanitary wares	246 (65.8)	128 (34.2)	374 (100.0)
Cleanliness in the canteen	179 (47.9)	195 (52.1)	374 (100.0)
Cleanliness in the building	86 (23.0)	288 (56.7)	374 (100.0)
Cleanliness in the dormitories	162 (43.3)	212 (56.7)	374 (100.0)

Table 10 depicted that most of the students (72.2 percent) perceived the problem, which was air pollution from industrial area. Next most frequent (65.8 percent) was cleanliness of toilets and sanitary wares. The least (23.0 percent) was cleanliness in the buildings.

4.2 Knowledge on Environmental Conservation

The testing of knowledge , analyzed by frequency distribution and percentage of the student with correct answers, was composed of 20 topics of the questions from the test. The results were shown in the Table 11 below :

Table 11 Number and Percentage of the Respondents Who Got the Correct Answer on Knowledge on Environmental Conservation

Content of the Questions	Number (N= 374)	Percentage (%)
1.The meaning of resource and environmental conservation .	306	81.81
2.A national benefit of energy conservation	208	55.61
3.Can you remedy the environmental problem	192	51.33
4.The most important cause that brings about environmental problem	269	71.92
5.Ground water pumping in a large quantity can cause……	190	50.80
6.Statement which matched to "Natural resource and environment are very important for human life.	210	56.14
7.The most garbage in Amphur Muang area, Pattani province come from.	173	46.25
8. How should waste water from factories be modified before let into rivers?	285	76.20
9. Which one is qualified for waste water treatment?	231	61.76
10.The most electrical appliances use heat energy.	266	71.12
11.The cause of lack of water	295	78.87
12.Saving electricity not only saves energy but also……..	186	49.73

Table 11 Number and Percentage of the Respondents Who Got the Correct Answer on Knowledge on Environmental Conservation (continued)

Content of the Questions	Number (N= 374)	Percentage (%)
13. What dose the meaning of statement " Plastic waste will occupy the entire world".	306	81.81
14. What kind of waste is the least dangerous for environment?	329	87.96
15. What happened when human being altered natural environment excessively?	203	54.27
16. The most human being can acquire the residue toxic of insecticide.	175	46.79
17. Which one is the best way for water saving?	278	74.33
18. What does electricity come from?	255	68.18
19. The best way to conserve energy for air conditioners	247	73.26
20. The best way to save electricity	201	53.74

Table 11 showed that the most of the students responded correctly to the following item respectively: The meaning of resource and environmental conservation (81.81 percent) and what dose the meaning of statement " Plastic waste will occupy the entire world" (81.81 percent). However the least number of students responded to the following items respectively are : The most garbage in Amphur Muang area, Pattani province come from. (46.25 percent). The most human being can acquire the residue toxic of insecticide.(46.79 percent).

Table 12 Numbers and Percentages of Students Classified by Level of Knowledge on Environmental Conservation

Level of Knowledge and Understanding on Environmental Conservation	Number (N =374)	Percentage	Mean	Min.	Max.	S.D.
High (16-20 scores)	119	31.81				
Moderate (11-15 scores)	178	47.59	12.26	4	8	3.44
Low (0-10 scores)	77	20.58				

Regarding to Table 12, it was found that nearly half of the sample group (47.59percent) possessed knowledge on environmental conservation at the moderate level. About one-fifth of the group (20.58 percent) possessed knowledge on environmental conservation at the low level.

4.3 Environmental Conservation Behavior of the Undergraduate Students.

The testing of behavior, analyzed by frequency distribution numbers, percentage and mode of scores for each of the statements, depicted the behavior of the 374 students as show in the table below:

Table 13 Numbers, Percentages, and Mode Distribution of the Students' Electricity Conservation Behavior Classified by Each Item

Electricity Conservation Behavior	Behavior						Mode
	Undesirable		Moderate		Desirable		
	Number	Percent	Number	Percent	Number	Percent	
1.While ironing the clothes, you adjust the level of heat properly to fabric.	24	6.4	190	50.8	160	42.8	Moderate
2.You turn on television or radio when you work alone.	75	20.1	253	67.6	46	12.3	Moderate
3.You use the light bulbs which save energy.	34	9.1	147	39.3	193	51.6	Desirable
4.You do not turn off the light since you think other people do.	11	2.9	125	33.4	238	63.6	Desirable
5.You plug in electrical appliances all the time for convenience.	60	16.0	220	58.8	94	25.1	Moderate

Table 13 Numbers, Percentages, and Mode Distribution of the Students' Electricity Conservation Behavior Classified by Each Item (continue)

Electricity Conservation Behavior	Behavior						Mode
	Undesirable		Moderate		Desirable		
	Number	Percent	Number	Percent	Number	Percent	
6.You turn on electric fan all the time for ventilation.	10	2.7	121	32.4	243	65.0	Desirable
7. You survey electric cost every month to reduce electrical consumption.	78	20.9	225	60.2	71	19.0	Moderate
8.You check all electrical equipments and fix the damaged parts.	81	21.7	224	59.9	69	18.4	Moderate
9.You buy electrical appliances with electricity saving label.	44	11.8	160	42.8	170	45.5	Desirable
Average		12.4		49.5		38.1	Moderate

According to Table 13, it was shown that nearly half of the students (49.5 percent) possessed electricity conservation behavior at the moderate level. The percentages of desirable and undesirable behavior were 38.1 percent and 12.4 percent respectively. The desirable behavior was no turning on electric fan all the time for ventilation (65.0 percent). Most of the students (67.6 percent) possessed the behavior, turning on television or radio when working alone, at the moderate level. The undesirable behavior was no surveying electric cost every month to reduce electrical consumption (20.9 percent).

Table 14 Numbers, Percentages, and Mode Distribution of the Students' Fuel Energy Conservation Behavior Classified by Each Item

Fuel Energy Conservation Behavior	Behavior						Mode
	Undesirable		Moderate		Desirable		
	Number	Percent	Number	Percent	Number	Percent	
1.You drive at the speed, not exceed 80km. Per hour.	47	12.6	202	54.0	125	33.4	Moderate
2.After using coal or firewood for cocking, you let it born out.	42	11.2	123	32.9	209	55.9	Desirable
3.It is not necessary to turn off a gas valve after use since you already turn off the switch.	17	4.5	51	13.6	3.6	81.8	Desirable
4.When it is time to service your car, you do.	79	21.1	184	49.2	111	29.7	Moderate
5.You stop the car engine when you park.	30	8.0	100	26.7	244	65.2	Desirable
6. You pump up the back tyre solid than the front when you carry heavy things.	92	24.6	174	46.5	108	28.9	Moderate
Average		13.6		37.2		49.2	Desirable

Table 14 presented that nearly half of the sample group (49.2 percent) possessed the desirable behavior and 37.2 percent of them possessed the fuel energy conservation behavior at the moderate level. Only 13.6 percent of the group possessed the undesirable behavior. The desirable behavior was necessity to turn off a gas valve after use despite turning off the switch (81.8 percent). The behavior which the students (54.0 percent) possessed at the moderate level was driving at the speed, not exceed 80 km. per hour. The undesirable behavior was pumping up the back tyre more solid than the front when carrying heavy things (24.6 percent).

Table 15 Numbers, Percentages, and Mode Distribution of the Students' Water Conservation Behavior Classified by Each Item

Water conservation Behavior	Behavior						mode
	Undesirable		Moderate		Desirable		
	Number	Percent	Number	Percent	Number	Percent	
1.You use the flush in the bathroom for more comfort.	69	18.4	222	59.4	83	22.2	Moderate
2.You use washing machine to wash small pieces of clothes.	16	4.3	40	24.1	268	71.7	Desirable
3.You turn off the tap completely after use.	14	3.7	36	9.6	324	86.6	Desirable
4.You reuse the household water i.e. water plants.	22	5.9	234	62.9	118	31.6	Moderate
5.You take a shower.	12	3.2	219	58.6	143	38.2	Moderate
6.You pour drinking water enough for each time.	6	1.6	151	40.4	217	58.0	Desirable
7.When you see a broken pipe, you fix it or call in a plumber.	51	13.6	215	57.5	108	28.9	Moderate
8.You wipe out the remains into the garbage before doing the dish.	7	1.9	76	20.3	291	77.8	Desirable
9.You wash a large amount of clothes at a time.	16	4.3	167	44.7	191	51.1	Desirable
10.You do the dishes by using water directly from the tap and do not use enameled bowls.	80	21.4	230	61.5	64	17.1	Moderate
11.You do not turn on the tap while brushing your teeth/ getting washed/ shampooing/ shaving/ washing clothes.	25	6.7	141	37.7	208	55.6	Desirable
12.You wash your car on the lawn for watering at the same time.	111	29.7	214	57.2	49	13.1	Moderate
13.You use a hose with a jet of water for car wash.	43	11.5	183	48.9	148	39.6	Moderate
14.You collect water in enameled bowls for washing vegetables, meat, fish, instead of using water directly from a tap.	47	12.6	192	51.3	135	36.1	Moderate
Average		9.9		45.3		44.8	Moderate

From Table 15, it was found that the percentage of the respondents who possessed water conservation behavior at the moderate level was 45.3 percent. The percentages of the desirable and undesirable were 44.8 percent and 9.9 percent respectively. Over half of them (61.5 percent) possessed the behavior of doing the dishes by using water directly from the tap without enameled bowls at the moderate level. The desirable behavior which the largest percentage of the group (86.6 percent) possessed was turning off the tap completely after use. The undesirable behavior was washing a car on the lawn for watering at the same time (29.7 percent).

Table 16 Numbers, Percentages, and Mode Distribution of the Students' Cleanliness Behavior Classified by Each Item

Cleanliness Behavior	Behavior						Mode
	Undesirable		Moderate		Desirable		
	Number	Percent	Number	Percent	Number	Percent	
1.You take off your shoes before getting in your residence to keep tidy and clean.	5	1.3	78	20.9	291	77.8	Desirable
2.You clean a bathroom and toilet by yourself.	24	6.4	159	42.5	191	51.1	Desirable
3.You draw picture on toilet wall or desks.	25	6.7	107	28.6	242	64.7	Desirable
4.You drop a bottle of water, a bag, a plastic cup, and rubbish on an alley when there is not rubbish bin.	19	5.1	164	43.9	191	51.1	Desirable
5.Cleanliness in classrooms.	25	6.7	193	51.6	156	41.7	Moderate
6.When finishing your meal at the canteen, you take dished to put in the provided containers.	7	1.9	35	9.4	332	88.8	Desirable
7.You ignore when you see your friend dropping rubbish on prohibited place.	23	6.1	266	71.1	85	22.7	Moderate
8.you are willing to cooperate in cleaning public places.	18	4.8	221	59.1	135	69.1	Desirable

Table 16 Numbers, Percentages, and Mode Distribution of the Students' Cleanliness Behavior Classified by Each Item (Continued)

Cleanliness Behavior	Behavior						Mode
	Undesirable		Moderate		Desirable		
	Number	Percent	Number	Percent	Number	Percent	
9.You put remains or rubbish in a desk, classroom, or residence.	24	6.4	175	46.8	175	46.8	Desirable
10.When you see rubbish along an alley, you pick it up and drop it in the bin.	26	7.0	292	78.1	56	15.0	Moderate
11.You classify rubbish before dropping it in the bin.	52	13.9	259	69.3	63	16.8	Moderate
Average		6.0		47.4		46.6	Moderate

According to Table 16, it was depicted that the percentages of the students who possessed cleanliness behavior at the moderate level, as well as the desirable and undesirable behaviors were 47.4 percent, 46.6 percent and 5.0 percent respectively. Most of them (78.1 percent) possessed the behavior of picking rubbish up and dropping it in the bin at the moderate level. Besides, the desirable behavior that 88.8 percent of the students possessed was taking dishes to put in the provided containers after finishing meals' only 13.9 percent of them possessed the undesirable behavior which was classifying rubbish before dropping it in the bin.

Table 17 Numbers and Percentages of Students Classified by Level of Environmental Conservation Behavior

Level of Environmental Conservation Behavior	Number (N =374)	Percentage	Mean	Min.	Max.	S.D.
High (56-80 scores)	94	24.3				
Moderate (41-55 scores)	189	52.9	60.4	35	75	8.87
Low (0-40 scores)	91	25.1				

Regarding to Table 17, it was found that most of the sample group (51.33 percent) possessed environmental conservation behavior at the moderate level. About

one-fourth of the group (26.20 percent) possessed environmental conservation behavior at the high level and 22.99 percent possessed environmental conservation behavior at low level.

4.4 Results of the Association of Independent Variables Regarding to Environmental Conservation Behavior and Environmental Conservation Participation.

Results of the association between independent variables : gender, faculty grade point average, information perception on environmental conservation, environmental problem perception as well as knowledge on environmental conservation were analyzed by Chi-Square analysis – as shown in table below :

Table 18 The Chi-Square Test of the Students' Environmental Conservation Behavior Classified by Gender

Gender	Environmental conservation behavior			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Male	32 (8.6)	47 (12.6)	39 (10.4)	118 (31.6)
Female	59 (15.8)	142 (38.0)	55 (14.7)	256 (68.4)
Total	91 (24.3)	189 (50.5)	94 (25.1)	374 (100.0)
Chi-Square = 8.758	DF = 2		Significance = .013	

Table 18 presented that the percentages of most males and females who possessed environmental conservation behavior at the moderate level were 12.6 percent and 38.0 percent respectively. When the Chi-square was used for analysis, it was found that environmental conservation behavior significantly depended on gender at the 0.05 level. It accepted the hypothesis.

Table 19 The Chi-Square Test of the Students' Environmental Conservation Behavior Classified by Faculty

Faculty	Environmental conservation behavior			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Humanities and Social Sciences	35 (9.4)	78 (20.9)	34 (9.1)	147 (39.9)
Education	32 (8.6)	63 (16.8)	32 (8.6)	127 (34.0)
Science and Technology as well as Islamic College	24 (6.4)	48 (12.8)	28 (7.5)	100 (26.7)
Total	91 (24.3)	189 (50.5)	94 (25.1)	374 (100.0)
Chi-Square = .957	DF = 4		Significance = .916	

From Table 19, it was shown that most of the sample group who studied in Humanities and Social Sciences ; Faculty of Education ; Science and Technology as well as Islamic College possessed environmental conservation behavior at the moderate level (20.9 percent, 16.8 percent, and 12.8 percent respectively) when the Chi-square was used for analysis, it was found that environmental conservation behavior did not significantly depend on faculty at the 0.05 level. It rejected the hypothesis.

Table 20 The Chi-Square Test of the Students' Environmental Conservation Behavior Classified by Grade Point Average

Level of grade point average (G.P.A.)	Environmental conservation behavior			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 2.50	29 (7.8)	54 (14.4)	26 (7.0)	109 (29.1)
Between 2.50-2.99	40 (10.7)	92 (24.6)	42 (11.2)	174 (46.5)
Higher than 3.00	91 (5.9)	43 (11.5)	26 (7.0)	91 (24.3)
Total	91 (24.3)	189 (50.5)	94 (25.1)	374 (100.0)
Chi-Square = 1.333	DF = 4		Significance = .856	

Concerning to Table 20, it was found that the percentages of the students with grade point average lower than 2.50, between 2.50 and 2.99 and higher than 3.00 possessing environmental conservation behavior at the moderate level were 14.4 percent, 24.6 percent, and 11.5 percent respectively. When the Chi-square was used for analysis, it was found that environmental conservation behavior did not significantly depend on grade point average at the 0.05 level which rejected the hypothesis.

Table 21 The Chi-Square Test of the Students' Environmental Conservation Behavior Classified by Source of Introduction on Environmental Conservation

Number of media on environmental conservation	Environmental conservation behavior			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 4 media	15 (4.0)	40 (10.7)	18 (4.8)	73 (19.5)
Between 4-6 media	54 (14.4)	100 (26.7)	48 (12.8)	202 (54.0)
More than 7 media	22 (5.9)	49 (13.1)	28 (7.5)	99 (26.5)
Total	91 (24.3)	189 (50.5)	94 (25.1)	374 (100.0)
Chi-Square = 1.963	DF = 4		Significance = .743	

From Table 21, it was shown that most of the sample group who perceived lower than 4 media, between 4-6 media, and more than 7 media possessed environmental conservation behavior at the moderate level (10.7 percent, 26.7 percent, and 13.1 percent respectively). When the Chi-square was used for analysis, it was found that environmental conservation behavior did not significantly depend on information perception on environmental conservation at the 0.05 level, rejecting the hypothesis.

Table 22 The Chi-Square Test of the Students' Environmental Conservation Behavior Classified by Environmental Problem Perception

Environmental problem Perception	Environmental conservation behavior			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 4 problems	16 (4.3)	39 (10.4)	17 (4.5)	72 19.3
Between 4-6 problems	37 (9.9)	94 (25.1)	40 (10.7)	171 (45.7)
More than 7 problems	38 (10.2)	189 (15.0)	37 (9.9)	131 (35.0)
Total	91 (24.3)	189 (50.5)	94 (25.1)	374 (100.0)
Chi-Square = 5.022	DF = 4		Significance = .285	

Table 22 presented that a majority of the students perceiving environmental problems—lower than 4 problems, between 4-6 problems, more than 7 problem possessed environmental conservation behavior at the moderate level (10.4 percent, 25.1 percent, and 15.0 percent respectively). When the Chi-square was used for analysis, it was shown that environmental conservation behavior did not significantly depend on environmental problem perception at the 0.05 level. It rejected the hypothesis.

Table 23 The Chi-Square Test of the Students' Environmental Conservation Behavior Classified by Knowledge on Environmental Conservation

Knowledge on environmental conservation	Environmental Conservation Behavior			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Low	21 (5.6)	38 (10.2)	18 (4.8)	77 (20.6)
Moderate	42 (11.2)	91 (24.3)	45 (12.0)	178 (47.6)
High	28 (7.5)	60 (16.0)	31 (8.3)	119 (31.8)
Total	91 (24.3)	189 (50.5)	94 (25.1)	374 (100.0)

Chi-Square = .515 DF = 4 Significance = .972

According to Table 23, it was depicted that the students with knowledge on environmental conservation at the low, moderate, and high level possessed environmental conservation behavior at the moderate level (10.2 percent, 24.3 percent, and 16.0 percent respectively). When the Chi-square was used for analysis, it was depicted that environmental conservation behavior did not significantly depend on knowledge on environmental conservation at the 0.05 level which rejected the hypothesis.

Table 24 The Chi-Square Test of the Students' Electricity Conservation Behavior Classified by Gender

Gender	Electricity Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Male	60 (16.0)	34 (9.1)	24 (6.4)	118 (31.6)
Female	135 (36.1)	72 (19.3)	49 (13.1)	256 (68.4)
Total	195 (52.1)	106 (28.3)	73 (19.5)	374 (100.0)

Chi-Square = .128 DF = 2 Significance = .938

Concerning to Table 24, it was found that most male and female students possessed electricity conservation behavior at the low level. The percentages were 16.0 percent and 36.1 percent respectively. When the Chi-square was used for analysis, it was found that electricity conservation behavior did not significantly depend on gender at the 0.05 level, It rejected the hypothesis.

Table 25 The Chi-Square Test of the Students' Electricity Conservation Behavior Classified by Faculty

Faculty	Electricity conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Humanities and Social Sciences	74 (19.8)	45 (12.0)	28 (7.5)	147 (39.3)
Education	69 (18.4)	35 (9.4)	23 (6.1)	127 (34.0)
Science and Technology as well as Islamic College	52 (13.9)	26 (7.0)	22 (5.9)	100 (26.7)
Total	195 (52.1)	106 (28.3)	73 (19.5)	374 (100.0)

Chi-Square = 1.158 DF = 4 Significance = .885

Table 25 presented that most of the group who studied in Humanities and Social Sciences, Education, Science and Technology as well as Islamic College possessed electricity conservation behavior at the low level (undesirable). The percentages were 19.8 percent, 18.4 percent, and 13.9 percent respectively). When the Chi-square was used for analysis, it was found that electricity conservation behavior did not significantly depend on faculty at the 0.05 level, which rejected the hypothesis.

Table 26 The Chi-Square Test of the Students' Electricity Conservation Behavior Classified by Grade Point Average

Level of grade point average (G.P.A.)	Electricity conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 2.50	56 (15.0)	35 (9.4)	18 (4.8)	109 (29.1)
Between 2.50-2.99	97 (25.9)	45 (12.0)	32 (8.6)	174 (46.5)
Higher than 3.00	42 (11.2)	26 (7.0)	23 (6.1)	91 (24.3)
Total	195 (52.1)	106 (28.3)	73 (19.5)	374 (100.0)
Chi-Square = 4.159	DF = 4		Significance = .385	

From Table 26, it was shown that the students with grade point average lower than 2.50, between 2.50 and 2.99, and higher than 3.00 possessed electricity conservation behavior at the low level (undesirable). The percentage were 15.0 percent, 25.9 percent, and 11.2 percent respectively. When the Chi-square was used for analysis, it was shown that electricity conservation behavior did not significantly depend on grade point average at the 0.05 level, rejecting the hypothesis.

Table 27 The Chi-Square Test of the Students' Electricity Conservation Behavior Classified by Information Perception on Environmental Conservation

Number of media on environmental conservation	Electricity conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 4 media	36 (9.6)	21 (5.6)	16 (4.3)	73 (19.5)
Between 4-6 media	108 (28.9)	63 (16.8)	31 (8.3)	202 (54.0)
More than 7 media	51 (13.6)	22 (5.9)	26 (7.0)	99 (26.5)
Total	195 (52.1)	106 (28.3)	73 (19.5)	374 (100.0)
Chi-Square = 6.401	DF = 4		Significance = .171	

According to Table 27, it was presented that the percentages of a majority of the students who perceived lower than 4 media, between 4 and 6 media, and more than 7 media possessing electricity conservation behavior at the low level (undesirable) were 9.6 percent, 28.9 percent, and 13.6 percent respectively. When the Chi-square was used for analysis, it was found that electricity conservation behavior did not significantly depend on information perception on environmental conservation at the 0.05 level. It rejected the hypothesis.

Table 28 The Chi-Square Test of the Students' Electricity Conservation Behavior Classified by Environmental Problem Perception

Environmental Problem Perception	Electricity Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 4 problems	37 (9.9)	18 (4.8)	17 (4.5)	72 (19.3)
4-6 problems	89 (23.8)	49 (13.1)	33 (8.8)	171 (45.7)
More than 7 problems	69 (18.4)	39 (10.4)	23 (6.1)	131 (35.0)
Total	195 (52.1)	106 (28.3)	73 (19.5)	374 (100.0)
Chi-Square = 1.279	DF = 4		Significance = .865	

From Table 28, it was depicted that most of the sample group perceiving environmental problems (lower than 4 problems, between 4 and 6 problems, and more than 7 problems) possessed electricity conservation behavior at the lower level (undesirable), which were 9.9 percent, 23.8 percent, and 18.4 percent respectively. When the Chi-square was used for analysis, it was shown that electricity conservation behavior did not significantly depend on environmental problem perception at the 0.05 level. It rejected the hypothesis.

Table 29 The Chi-Square Test of the Students' Electricity Conservation Behavior Classified by knowledge on Environmental Conservation

Knowledge on environmental conservation	Electricity Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Low	45 (12.0)	19 (5.1)	13 (3.5)	77 (20.6)
Moderate	87 (23.3)	50 (13.4)	41 (11.0)	178 (47.6)
High	63 (16.8)	37 (9.9)	19 (5.1)	119 (31.8)
Total	195 (52.1)	106 (28.3)	73 (19.5)	374 (100.0)

Chi-Square = 3.822 DF = 4 Significance = .431

Table 29 presented that a majority of the sample group with knowledge on environmental conservation at the low, moderate, and high level possessed electricity conservation behavior at the low level (undesirable). The percentages were 12.0 percent, 23.3 percent, and 16.8 percent respectively. When the Chi-square was used for analysis, it was shown that electricity conservation behavior did not significantly depend on knowledge on environmental conservation at the 0.05 level, which rejected the hypothesis.

Table 30 The Chi-Square Test of the Students' Fuel Energy Conservation Behavior Classified by Gender

Gender	Fuel Energy Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Male	30 (8.0)	20 (5.3)	68 (18.2)	118 (31.6)
Female	102 (27.3)	52 (13.9)	102 (27.3)	256 (68.4)
Total	132 (35.3)	72 (19.3)	170 (45.5)	374 (100.0)

Chi-Square = .004 DF = 2 Significance = .004

According to Table 30, it was found that the percentages of most male and female students with fuel energy conservation behavior at the high level (desirable) were 18.2 percent and 27.3 percent respectively. When the Chi-square was used for analysis, it was found that fuel energy conservation behavior significantly depended on gender at the 0.05 level. It accepted the hypothesis.

Table 31 The Chi-Square Test of the Students' Fuel Energy Conservation Behavior Classified by Faculty

Faculty	Fuel Energy Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Humanities and Social Sciences	56 (15.0)	30 (8.0)	61 (16.3)	147 (39.3)
Education	45 (12.0)	24 (6.4)	58 (15.5)	127 (34.0)
Science and Technology as well as Islamic College	31 (8.3)	18 (4.8)	51 (13.6)	100 (26.7)
Total	132 (35.3)	72 (19.3)	170 (45.5)	374 (100.0)

Chi-Square = 2.226 DF = 4 Significance = .694

From Table 31, it was depicted that most of the sample group studying in Humanities and Social Sciences, Education, Science and Technology as well as Islamic College possessed fuel energy conservation behavior at the high level (desirable)—16.3 percent, 15.5 percent, and 13.6 percent respectively. When the Chi-square was used for analysis, it was shown that fuel energy conservation behavior did not significantly depend on faculty at the 0.05 level. It rejected the hypothesis.

Table 32 The Chi-Square Test of the Students' Fuel Energy Conservation Behavior Classified by Grade Point Average

Level of grade point average (G.P.A.)	Fuel Energy Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 2.50	38 (10.2)	16 (4.3)	55 (14.7)	109 (29.1)
Between 2.50-2.99	55 (14.7)	38 (10.2)	81 (21.7)	174 (46.5)
Higher than 3.00	39 (10.4)	18 (4.8)	34 (9.1)	91 (24.3)
Total	132 (35.3)	72 (19.3)	170 (45.5)	374 (100.0)
Chi-Square = 5.910	DF = 4		Significance = .206	

Table 32 depicted that most of the group with grade point average (lower than 2.50, between 2.50 and 2.99, and higher than 3.00) possessed fuel energy conservation at the high level (desirable)—14.7 percent, 21.7 percent, and 9.1 percent respectively. When the Chi-Square was used for analysis, it was found that fuel energy conservation behavior did not significantly depend on grade point average at the 0.05 level, which rejected the hypothesis.

Table 33 The Chi-Square Test of the Students' Fuel Energy Conservation Behavior Classified by Information Perception on Environmental Conservation

Number of media on environmental conservation	Fuel Energy Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 4 media	28 (7.5)	8 (2.1)	37 (9.9)	73 (19.5)
Between 4-6 media	73 (19.5)	35 (9.4)	94 (25.1)	202 (54.0)
More than 7 media	31 (8.3)	29 (7.8)	39 (10.4)	99 (26.5)
Total	132 (35.3)	72 (19.3)	170 (45.5)	374 (100.0)
Chi-Square = 10.152	DF = 4		Significance = .038	

Concerning to table 33, it was presented that the majority of the students perceiving lower than 4 media, between 4 and 6 media, and more than 7 media possessed fuel energy conservation behavior at the high level (desirable), and the percentages were 9.9 percent, 25.1 percent, and 10.4 percent respectively. When the Chi-Square was used for analysis, it was presented that fuel energy conservation behavior significantly depended on information perception on environmental conservation at the 0.05 level. It accepted the hypothesis.

Table 34 The Chi-Square Test of the Students' Fuel Energy Conservation Behavior Classified by Environmental Problem Perception

Environmental Problem Perception	Fuel energy conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Less than 4 problems	25 (6.7)	15 (4.0)	32 (8.6)	72 (19.3)
Between 4-6 problems	62 (16.6)	30 (8.0)	79 (21.1)	171 (45.7)
More than 7 problems	45 (12.0)	27 (7.2)	59 (15.8)	131 (35.0)
Total	132 (35.3)	72 (19.3)	170 (45.5)	374 (100.0)
Chi-Square = .605	DF = 4		Significance = .963	

According to Table 34, it was shown that the percentages of a large majority of the group who perceived environmental problems—lower than 4 problems, between 4 and 6 problems, and more than 7 problems—possessing fuel energy conservation behavior at the high level (desirable) were 8.6 percent, 21.1 percent, and 15.8 percent respectively. When the Chi-Square was used for analysis, it was shown that fuel

energy conservation behavior did not significantly depend on environmental problem perception at the 0.05 level. It rejected the hypothesis.

Table 35 The Chi-Square Test of the Students' Fuel Energy Conservation Behavior Classified by Knowledge on Environmental Conservation

Knowledge on environmental conservation	Fuel Energy Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Low	29 (7.8)	11 (2.9)	37 (9.9)	77 (20.6)
Moderate	69 (18.4)	32 (8.6)	77 (20.6)	178 (47.6)
High	34 (9.1)	29 (7.8)	56 (15.0)	119 (31.8)
Total	132 (35.3)	72 (19.3)	170 (45.5)	374 (100.0)
Chi-Square = 5.380	DF = 4		Significance = .251	

Regarding to Table 35, it was found that the percentages of the students with knowledge on environmental conservation at the low, moderate, and high level possessing fuel energy conservation behavior at the high level (desirable) were 9.9 percent, 20.6 percent, and 15.0 percent respectively. When the Chi-Square was used for analysis, it was found that fuel energy conservation hev did not significantly depend on knowledge on environmental conservation at the 0.05 level. It rejected the hypothesis.

Table 36 The Chi-Square Test of the Students' Water Conservation Behavior Classified by Gender

Gender	Water Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Male	43 (11.5)	39 (10.4)	36 (9.6)	118 (31.6)
Female	71 (19.0)	106 (28.3)	79 (21.1)	256 (68.4)
Total	114 (30.5)	145 (38.8)	115 (30.7)	374 (100.0)
Chi-Square = 3.466	DF = 2		Significance = .117	

From Table 36, it was shown that the male students possessed water conservation behavior at the low level (11.5 percent) while the female students did so at the moderate level (28.3 percent). When the Chi-Square was used for analysis, it was depicted that water conservation behavior did not significantly depend on gender at the 0.05 level, which rejected the hypothesis.

Table 37 The Chi-Square Test of the Students' Water Conservation Behavior Classified by Faculty

Faculty	Water Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Humanities and Social Sciences	43 (11.5)	59 (15.8)	45 (12.0)	147 (39.9)
Education	35 (9.4)	50 (13.4)	42 (11.2)	127 (34.0)
Science and Technology as well as Islamic College	36 (9.6)	36 (9.6)	28 (7.5)	100 (26.7)
Total	114 (30.5)	145 (38.8)	115 (30.7)	374 (100.0)
Chi-Square = 2.178	DF = 4		Significance = .703	

Concerning to Table 37, it was found that the percentages of a majority of the sample group who studied in Humanities and Social Science, Faculty of Education, Science and Technology as well as Islamic College possessing water conservation behavior at the moderate level were 15.8 percent, 13.4 percent, and 9.6 percent respectively. When the Chi-Square was used for analysis, it was found that water conservation behavior did not significantly depend on faculty at the 0.05 level, which rejected the hypothesis.

Table 38 The Chi-Square Test of the Students' Water Conservation Behavior Classified by Grade Point Average

Level of grade point average (G.P.A.)	Water Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 2.50	36 (9.6)	36 (9.6)	37 (9.9)	109 (29.1)
Between 2.50-2.99	54 (14.4)	69 (18.4)	51 (13.6)	174 (46.5)
Higher than 3.00	24 (6.4)	40 (10.7)	27 (7.2)	91 (24.3)
Total	114 (30.5)	145 (38.8)	115 (30.7)	374 (100.0)
Chi-Square = 2.860	DF = 4		Significance = .581	

Table 38 showed that 9.9 percent of the students with grade point average lower than 2.50 possessed water conservation behavior at the high level (desirable). Most of them with grade point average between 2.50 and 2.99, and higher than 3.00 possessed water conservation behavior at the moderate level (18.4 percent and 10.7 percent, respectively) When the Chi-Square was used for analysis, it was presented that water conservation behavior did not significantly depend on grade point average at the 0.05 level. It rejected the hypothesis.

Table 39 The Chi-Square Test of the Students Water Conservation Behavior Classified by Information Perception on Environmental Conservation

Number of media on environmental conservation	Water Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 4 media	25 (6.7)	25 (6.7)	23 (6.1)	73 (19.5)
Between 4-6 media	65 (17.4)	71 (19.0)	66 (17.6)	202 (54.0)
More than 7 media	24 (6.4)	49 (13.1)	26 (7.0)	99 (26.5)
Total	114 (6.4)	145 (38.8)	115 (30.7)	374 (100.0)
Chi-Square = 6.705	DF = 4		Significance = .152	

From Table 39, it was depicted that a large majority of the students who perceived lower than 4 media, between 4 and 6 media, and more than 7 media possessed water conservation behavior at the moderate level (6.7 percent, 19.0 percent, and 13.1 percent respectively). When the Chi-Square was used for analysis, it was shown that water conservation behavior did not significantly depend on information perception on environmental conservation at the 0.05 level, rejecting the hypothesis.

Table 40 The Chi-Square Test of the Students' Water Conservation Behavior Classified by Environmental Problem Perception

Environmental Problem Perception	Water Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Less than 4 problems	23 (6.1)	28 (7.5)	21 (5.6)	72 (19.3)
Between 4-6 problems	46 (12.3)	66 (17.6)	59 (15.8)	171 (45.7)
More than 7 problems	45 (12.0)	51 (13.6)	35 (9.4)	131 (35.0)
Total	114 (30.5)	145 (38.8)	115 (30.7)	374 (100.0)
Chi-Square = 2.951	DF = 4		Significance = .566	

Concerning to table 40, it was shown that the percentages of the students who perceived environmental problems (lower than 4 problems, between 4 and 6 problems, and more than 7 problems) possessing water conservation behavior at the moderate level were 7.5 percent, 17.6 percent, and 13.6 percent respectively. When the Chi-Square was used for analysis, it was found that water conservation behavior did not significantly depend on environmental problem perception at the 0.05 level, which rejected the hypothesis.

Table 41 The Chi-Square Test of the Students' Water Conservation Behavior Classified by Knowledge on Environmental Conservation

Knowledge on environmental conservation	Water Conservation			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Low	30 (8.0)	27 (7.2)	20 (5.3)	77 (20.6)
Moderate	53 (14.2)	68 (18.2)	57 (15.2)	178 (47.6)
High	31 (8.3)	50 (13.4)	38 (10.2)	119 (31.8)
Total	114 (30.5)	145 (38.8)	115 (30.7)	374 (100.0)

Chi-Square = 3.942 DF = 4 Significance = .414

Table 41 presented that 8.0 percent of the sample group with knowledge on environmental conservation at the low level possessed water conservation behavior at the low level, the students with knowledge on environmental conservation at the moderate and high level possessed water conservation behavior at the moderate level (18.2 percent and 13.4 percent respectively). When the Chi-Square was used for analysis, it was shown that water conservation behavior did not significantly depend on knowledge on environmental conservation at the 0.05 level. It rejected the hypothesis.

Table 42 The Chi-Square Test of the Students' Cleanliness Behavior Classified by Gender

Gender	Cleanliness			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Male	29 (7.8)	26 (7.0)	63 (16.8)	118 (31.6)
Female	58 (15.5)	69 (18.4)	129 (34.5)	256 (68.4)
Total	87 (23.3)	95 (25.4)	192 (51.3)	374 (100.0)

Chi-Square = 1.039 DF = 2 Significance = .595

Table 42 found that most of male and female students possessed cleanliness behavior at the high level (desirable). The percentages were 16.8 percent and 34.5 percent respectively. When the Chi-Square was used for analysis, it was presented that cleanliness behavior did not significantly depend on gender at the 0.05 level. It rejected the hypothesis.

Table 43 The Chi-Square Test of the Students' Cleanliness Behavior Classified by Faculty

Faculty	Cleanliness			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Humanities and Social Sciences	36 (9.6)	32 (8.6)	79 (21.1)	147 (39.3)
Education	26 (7.0)	38 (10.2)	63 (16.8)	127 (34.0)
Science and Technology as well as Islamic College	25 (6.7)	25 (6.7)	50 (13.4)	100 (26.7)
Total	87 (23.3)	95 (25.4)	192 (51.3)	374 (100.0)
Chi-Square = 2.716.	DF = 4		Significance = .606	

From Table 43, it was depicted that the majority of the students who studied in Humanities and Social Sciences, Education, Science and Technology as well as Islamic College possessed cleanliness behavior at the high level (desirable). The percentages were 21.1 percent, 16.8 percent and 13.4 percent respectively. When the Chi-Square was used for analysis, it was found that cleanliness behavior did not significantly depend on faculty at the 0.05 level, which rejected the hypothesis.

Table 44 The Chi-Square Test of the Students' Cleanliness Behavior Classified by Grade Point Average

Level of grade point average (G.P.A.)	Cleanliness			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 2.50	32 (8.6)	20 (5.3)	57 (15.2)	109 (29.1)
Between 2.50-2.99	35 (9.4)	56 (15.0)	83 (22.2)	174 (46.5)
Higher than 3.00	20 (5.3)	19 (5.1)	52 (13.9)	91 (24.3)
Total	87 (23.3)	95 (25.4)	192 (51.3)	374 (100.0)
Chi-Square = 9.630	DF = 4		Significance = .047	

According to Table 44, it was shown that the percentages of the students with grade point average (lower than 2.50, between 2.50 and 2.99, and higher than 3.00) who possessed cleanliness behavior at the high level (desirable) were 15.2 percent, 22.2 percent, and 13.9 percent respectively. When the Chi-Square was used for analysis, it was shown that cleanliness behavior significantly depended on grade point average at the 0.05 level. It accepted the hypothesis.

Table 45 The Chi-Square Test of the Students' Cleanliness Behavior Classified by Information Perception on Environmental Conservation

Number of media on environmental conservation	Cleanliness			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 4 media	15 (4.0)	19 (5.1)	39 (10.4)	73 (19.5)
Between 4-6 media	55 (14.7)	45 (12.0)	102 (27.3)	202 (54.0)
More than 7 media	17 (4.5)	31 (8.3)	51 (13.6)	99 (26.5)
Total	87 (23.3)	95 (25.4)	192 (51.3)	374 (100.0)
Chi-Square = 5.415	DF = 4		Significance = .247	

Regarding to Table 45, it was found that the percentages of most of the respondents who perceived lower than 4 media, between 4 and 6 media, and more than 7 media, possessing cleanliness behavior at the high level (desirable) were 10.4 percent, 27.3 percent, and 13.6 percent respectively. When the Chi-Square was used for analysis, it was depicted that cleanliness behavior did not significantly depend on information perception on environmental conservation at the 0.05 level, which rejected the hypothesis.

Table 46 The Chi-Square Test of the Students' Cleanliness Behavior Classified by Environmental Problem Perception

Environmental problem Perception	Cleanliness			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Lower than 4 problems	16 (4.3)	21 (5.6)	35 (9.4)	72 (19.3)
4-6 problems	38 (10.2)	43 (11.5)	90 (24.1)	171 (45.7)
More than 7 problems	33 (8.8)	31 (8.3)	67 (17.9)	131 (35.0)
Total	87 (23.3)	95 (25.4)	192 (51.3)	374 (100.0)
Chi-Square = 1.045	DF = 4		Significance = .903	

Concerning to Table 46, it was found that the majority of the group perceiving environmental problems (lower than 4 problems, between 4 and 6 problems, and more than 7 problems) possessed cleanliness behavior at the high level (desirable). The percentages were 9.4 percent, 24.1 percent, and 17.9 percent respectively. When the Chi-Square was used for analysis, it was shown that cleanliness behavior did not

significantly depend on environmental problem perception at the 0.05 level. It rejected the hypothesis.

Table 47 The Chi-Square Test of the Students' Cleanliness Behavior Classified by Knowledge on Environmental Conservation

Knowledge on environmental conservation	Cleanliness			
	Undesirable Number (Percent)	Moderate Number (Percent)	Desirable Number (Percent)	Total Number (Percent)
Low	23 (6.1)	21 (5.6)	33 (8.8)	77 (20.6)
Moderate	36 (9.6)	54 (14.4)	88 (23.5)	178 (47.6)
High	28 (7.5)	20 (5.3)	71 (19.0)	119 (31.8)
Total	87 (23.3)	95 (25.4)	192 (51.3)	374 (100.0)
Chi-Square = 10.240	DF = 4		Significance = .037	

From Table 47, it was shown that most of the students with the low, moderate, and high level of knowledge on environmental conservation possessed cleanliness behavior at the high level (desirable), which were 8.8 percent, 23.5 percent, and 19.0 percent respectively. When the Chi-Square ws used for analysis, it was depicted that cleanliness behavior significantly depended on knowledge on environmental conservation at the 0.05 level. It accepted the hypothesis.

Table 48 The Chi-Square Test of the Students' Environmental Conservation Participation Classified by Gender

Gender	Participation in Environmental Conservation			
	Low Number (Percent)	Moderate Number (Percent)	high Number (Percent)	Total Number (Percent)
Male	44 (11.8)	40 (10.7)	34 (9.1)	118 (31.6)
Female	73 (19.5)	98 (26.2)	85 (22.7)	256 (68.4)
Total	117 (31.3)	138 (36.9)	119 (31.8)	374 (100.0)
Chi-Square = 2.897	DF = 2		Significance = .235	

Table 48 found that about nearly one-fifth of the female respectively (19.5 percent) participated in environmental conservation activities at the moderate level. 11.8 percent of the male respondents participated in environmental conservation activities at the low level. When the Chi-Square was used for analysis, it was depicted that environmental conservation participation did not significantly depend on gender at the 0.05 level. It rejected the hypothesis.

Table 49 The Chi-Square Test of the Students' Environmental Conservation Participation Classified by Faculty

Faculty	Participation in Environmental Conservation			
	Low Number (Percent)	Moderate Number (Percent)	high Number (Percent)	Total Number (Percent)
Humanities and Social Sciences	48 (12.8)	56 (15.0)	43 (11.5)	147 (39.3)
Education	25 (6.7)	56 (15.0)	46 (12.3)	127 (34.0)
Science and Technology as well as Islamic College	44 (11.8)	26 (7.0)	30 (8.0)	100 (26.7)
Total	117 (31.3)	138 (36.9)	119 (31.8)	374 (100.0)
Chi-Square = 16.659	DF = 4		Significance = .002	

Regarding to Table 49, it was found that 15 percent of most respondents studying in Humanities and Social Sciences, as well as Education participated in environmental conservation activities at the moderate level while 11.8 percent of most respondents who studied in Science and Technology as well as Islamic College did so at the low level. When the Chi-Square was used for analysis, it was found that environmental conservation participation significantly depended on faculty at the 0.05 level. It accepted the hypothesis.

Table 50 The Chi-Square Test of the Students' Environmental Conservation Participation Classified by Grade Point Average

Level of grade point average (G.P.A.)	Participation in Environmental Conservation			
	Low Number (Percent)	Moderate Number (Percent)	high Number (Percent)	Total Number (Percent)
Lower than 2.50	39 (10.4)	37 (9.9)	33 (8.8)	109 (29.1)
Between 2.50-2.99	50 (13.4)	63 (16.8)	61 (16.3)	174 (46.5)
Higher than 3.00	28 (7.5)	38 (10.2)	25 (6.7)	91 (24.3)
Total	117 (31.3)	138 (36.9)	119 (31.8)	374 (100.0)
Chi-Square = 3.131	DF = 4		Significance = .536	

Table 50 showed that 10.4 percent of the students with grade point average lower than 2.50 participated in environmental conservation activities at the low level. And the percentages of the students with grade point average between 2.50 and 2.99, and more than 3.00 participating in the same activities at the moderate level were 16.8 percent and 10.2 percent respectively. When the Chi-Square was used for analysis, it

was shwon that environmental conservation participation did not significantly depend on grade point average at the 0.05 level. It rejected the hypothesis.

Table 51 The Chi-Square Test of the Students' Environmental Conservation Participation Classified by Environmental Problem Perception

Environmental Problem Perception	Participation in Environmental Conservation			
	Low Number (Percent)	Moderate Number (Percent)	high Number (Percent)	Total Number (Percent)
Lower than 4 problems	17 (4.5)	29 (7.8)	26 (7.0)	72 (19.3)
4-6 problems	55 (14.7)	63 (16.8)	53 (14.2)	171 (45.7)
More than 7 problems	45 (12.0)	46 (12.3)	40 (10.7)	131 (35.0)
Total	117 (31.3)	138 (36.9)	119 (31.8)	374 (100.0)
Chi-Square = 2.649	DF = 4		Significance = .618	

According to Table 51, it was presented that the percentages of the sample group who perceived lower than 4 problems, between 4 and 6 problems, and more than 7 problems possessing the moderate level of participation in environmental conservation activities were 7.8 percent, 16.8 percent, and 12.3 percent respectively. When the Chi-Square was used for the analysis, it was shown that environmental conservation participation did not significantly depend on environmental problem perception at the 0.05 level, which rejected the hypothesis.

Table 52 The Chi-Square Test of Students' Environmental Conservation Participation Classified by Knowledge on Environmental Conservation

Knowledge on environmental conservation	Participation in Environmental Conservation			
	Low Number (Percent)	Moderate Number (Percent)	high Number (Percent)	Total Number (Percent)
Low	25 (6.7)	23 (6.1)	29 (7.8)	77 (20.6)
Moderate	51 (13.6)	72 (19.3)	55 (14.7)	178 (47.6)
High	41 (11.0)	43 (11.5)	35 (9.4)	119 (31.8)
Total	117 (31.3)	138 (36.9)	119 (31.8)	374 (100.0)

Chi-Square = 3.559 DF = 4 Significance = .469

From Table 52, it was depicted that 7.8 percent of the respondents with the low level of knowledge on environmental conservation participated in environmental conservation activities at the high level while those with the moderate and high level of knowledge on environmental conservation did so at the moderate level (19.3 percent and 11.5 percent respectively). When the Chi-Square was used for analysis, it was found the environmental conservation participation did not significantly depend on knowledge on environmental conservation at the 0.05 level. It rejected the hypothesis.

CHAPTER V

DISCUSSION

Environmental problems, nowadays, have been increasing so seriously that they caused environment crisis in many districts. As a result of rapidly increasing population, economic expansion, and technological advance, they inevitably caused pollution, lack of natural resources, and crowded population. The National Environment Quality Act was enacted in 1992 to figure out those problems, assigning policies and responsibilities environmental plans and projects. Environmental conservation is regarded as a duty of all the Thai altogether to solve the ongoing problems and prevent the nation from the others.

Undergraduate students in Prince of Songkla University, Pattani Campus are mature enough to learn about and perceive seriously on environmental problem, environmental conservation, and efforts of environmental problem. After their graduation, they all have to be in different fields of occupations. So they individually play an important role on environmental conservation throughout their various workplaces. The researcher took a great interest in studying environmental conservation behavior of the students.

5.1 The Levels of Environmental Conservation Behavior of Undergraduate Students in Prince of Songkla University, Pattani Campus.

1. Based on the research, it was found that the undergraduate students in Prince of Songkla University, Pattani Campus possessed moderate level of environmental conversational behavior which was between 41-55 points. This might result from

various curricula of Prince of Songkla University, Pattani Campus, merely focusing on their specialized learning. So the environment concept could be infused very little into the curricula. This might cause the students to possess low level of environmental conservation behavior. At present, media has promoted and provoked people into realizing the problems and taking environmental conservation actions. The result was in accordance with the study of Suwanee Yuvachart (1989: 87) about "A Study of the Environmental Conservation Behavior of the Vocational Students under the Department of Vocational Education in Bangkok." This study depicted that most of the vocational students possessed level of environmental conservation behavior at the moderate level. Similarly, the research of Wichan Maneechote (1992: 68) on "The Environmental Conservation Behavior of Matthayomsuksa 3 students in Songkla Province." found that most of real environmental conservation behavior of Matthayomsuksa 3 students was at the moderate level. On the contrary, the research of Soontaree Cheentam (1988: 171) on "A Study of Factor Related to Behavior in Environmental Conservation of the People in Pathom Asoke Project, Tambon Praprathon, Amphoe Muang, Nakorn Pathom Province", it was found that people possessed environmental conservation behavior at the high level on an average. Similar to the research of Somchai Ampanthong about "Knowledge Attitude and Behavior of Secondary School Administrators in Bangkok Metropolis The Environmental Problems in Thailand", which found that most secondary school administrators possessed environmental conservation behavior at the positive "high" level in completing throughout the questionnaire on environmental conservation behavior in Thailand.

5.2 The Association between Independent Variables and Environmental Conservation Behavior of the Undergraduate Students in Prince of Songkla University, Pattani Campus.

5.2.1 Environmental Conservation Behavior of Undergraduate Students in Prince of Songkla University, Pattani Campus associated with Independent Variables.

1. According to the study, the students' environmental conservation behavior significantly depended on gender at the 0.05 level. It accepted the hypothesis. This was probably because female students possessed ethnic behavior on responsibility, discipline, and honesty more than male students. It also might have come from their being brought up. The difference of genders, therefore, affected on environmental conservation behavior of the students. The result was congruent with the study of Taklaeo Dejdumrong (1995: 85) on "Mea Klong River Conservation Behavior of the Population in Kanchanaburi province.", stating that males and females in municipal limits had different kinds of environmental conservation behavior. On the other hand, the research of Piset Smitanada (1996: 94-95) on "Knowledge and Practices on Environmental Conservation of Cabin Attendants at Thai Airways International and Japan Airlines" showed that both made and female cabin attendants had no difference between levels of knowledge and practices on environmental conservation.

5.2.2 Environmental Conservation Behavior of Undergraduate Students in Prince of Songkla University, Pattani Campus did not associate with Independent Variables.

1. The students' environmental conservation behavior did not significantly depend on faculty at the 0.05 level. This could be explained that environmental conservation behavior was a part of their everyday life. In spite of the fact that students who studied in Faculty of Science and Technology had knowledge on environmental conservation more than those did in Education and Arts, there was no effect on students' environmental conservation behavior. The result was in accordance with the work of Sobsuk Leelabutra (1995:74) on "Local People Participation in Environmental Conservation: A Case Study of Ko Kert Nonthaburi Province", stating that levels of education were dissimilar to local people participation in environmental conservation. On the contrary of the study of Niramon Kluchum (1991: 84) about "Knowledge and Behaviors of Teaching College Students Regarding Environmental Pollution in Bangkok Metropolis", it showed that teaching college students in different levels of knowledge on environmental pollution in Bangkok Metropolis.

2. The students' environmental conservation behavior did not significantly depend on grade point average at the 0.05 level, which rejected the hypothesis. This could be interpreted that grade point average was an important factor of students' achievement to possess the high level of knowledge including environmental conservation. In practice, nevertheless, environmental conservation behavior came from not only grade point average, but also life experience. Similar to the study of Piset Smitanada (1996: 79-80) on "Knowledge and Practices on Environmental Conservation of Cabin Attendants at Thai Airways International and Japan Airlines",

it revealed that cabin attendants' level of education had no effort on knowledge and practice on environmental conservation. It did not correspond with the research of Boonlue Khotchasanee (1989: 101) on "Knowledge and Awareness of the Local Inhabitants towards the Conservation and Improvement of the Coastal Tourist Resort: A Case Study of Kho Samed, Rayong Province"

3. The students' environmental conservation behavior did not significantly depend on information perception on environmental conservation at the 0.05 level. It rejected the hypothesis. This was probably because environmental conservation information was disseminated at a nearly low level through media. This could affect environmental conservation behavior, which did not correspond with perception of information on environmental conservation. The research of Piyanuch Phomee (1998: 94-95) on "Roles of Educational Regions on Promoting Environmental Education." It revealed that government's dissemination of information on environmental conservation was at a nearly low level. Therefore it could not affect personnel behavior.

4. The students' environmental conservation behavior did not significantly depend on environmental problem perception at the 0.05 level, which rejected the hypothesis. This could be explained that students paid little attention to environmental conservation perception as well as awareness of causes and efforts on environmental problems. Therefore environmental conservation perception did not correspond with environmental conservation behavior. Similarly to the research of Wiparat Kitisupornphan (1998: 85) about "The Factors Influencing High School Students Knowledge of the Environmental Issues Posed by Nuclear Power Plants", it revealed that content on environmental issues in Science program covered all of environmental

subject matter more than that of Arts program. It, however, had no effect on students' environmental conservation perception.

5. The students' environmental conservation behavior did not significantly depend on knowledge and understanding on environmental conservation at the 0.05 level. It rejected the hypothesis. This could be stated that the students' levels of education could make them have knowledge and understanding on environmental subject matter. In practice, however, either of them could count on willing and satisfaction. It could be concluded that level of education did not matched environmental conservation behavior. The result was congruent with the study of Niramon Klubchum (1991: 94) on "Knowledge and Behavior of Teaching College Students Regarding Environmental Pollution in Bangkok Metropolis.", depicting the teaching college students who attended in environmental clubs and did not do so had no difference on environmental pollution knowledge

5.3 The Association between Independent Variables and Electrical Energy Conservation Behavior of the Undergraduate Students in Prince of Songkla University, Pattani Campus.

5.3.1 Electrical Energy Conservation Behavior of the Undergraduate Students in Prince of Songkla University, Pattani Campus did not Association with Independent Variables.

1. Concerning the results, the students' electrical energy conservation behavior did not significantly depend on gender at the 0.05 level. It rejected the hypothesis. This was probably because both male and female students, at present, equally possessed knowledge on electricity conservation from their academic institutions, life

experience, and media. Electrical energy conservation behavior, therefore, did not depend on gender. And so was the study of Ekachai Sunthonpas (2001:85) on "The Participation of Bangkok Aviation Fuel Services Public Co.,Ltd. Employees in Electrical Energy Conservation". On the contrary, the research of Somchen Ampanthong (1989: 73) about "Knowledge Attitude and Behavior of Secondary School Administrators in Bangkok Metropolis the Environmental Problems in Thailand", it was found that levels of administrators' behavior on environmental problems, in Thailand, significantly depended on gender.

2. The students' electrical energy conservation behavior did not significantly depend on faculty at the 0.05 level, which rejected the students from different majors possessed different levels of knowledge on environment, they could learn it from their everyday-life experience. Then they could apply it themselves to conserve electrical energy. Faculty, therefore, did not correspond with electrical energy conservation. Moreover, the study of Songtham Kanjanapiboon (1998: 81-82) on "Roles of Education Administrators at the Department of Vocational Education in Promoting Environmental Education" showed that educational administration similarly played practical roles in environmental support. The result was not congruent with the work of Wiparat Kitisupornphan (1998: 74-75) on "The Factors Influencing High School Students Knowledge of the Environmental Issues Posed by Nuclear Power Plants", stating that environmental subject matter in Science program widely covered that in Arts program.

3. The students' electrical energy conservation behavior did not significantly depend on grade point average at the 0.05 level, rejecting the hypothesis. This might result from grade point average could depict the students' level of knowledge.

Practically, however, it was not necessary that the students possessed the same level as behavior. The result was in accordance with the study of Supan Jaogasigon (1996: 84-85) on "The Knowledge and Practice Concerning Water Conservation of Mathayomsuksa 3 Students in Nakoenoathom Province."

4. The students' electrical energy conservation behavior did not significantly depend on information perception on environmental conservation at the 0.05 level, which rejected the hypothesis. The result might be explained that students obtained the same scope of information as well as the same way of persuasion through media. This had no effect on students' electrical energy conservation, similar to the study of Aranya Ruksitanon (1995: 93-94) on "Resident's Energy Saving Behavior in Amphoe Muang Nonthaburi Province." The result was not in accordance with the research of Ekachai Sunthonpas (2001: 85) on "The Participation of Bangkok Aviation Fuel Services Public Co.,Ltd. Employees in Electrical Energy Conservation."

5. The students' electrical energy conservation behavior did not significantly depend on environmental problem perception at the 0.05 level. It rejected the hypothesis. This was probably because the students' level of attention on environmental problems was not individually different. Besides, they seemed to lack awareness of causes and effects on environmental problems. Therefore, the environmental problem perception did not depend on electrical energy conservation behavior. The result was not in accordance with the study of Wiparat Kitsupornphan (1998: 77) on "The Factors Influencing High School Students Knowledge of the Environmental Issues Posed by Nuclear Power Plants", stating that some students realizing value of electrical energy had both positive values and attitude towards

electrical consumption, whereas others lacked of knowledge on environment. It, therefore, could cause the different behavior.

6. The students' electrical energy conservation behavior did not significantly depend on knowledge and understanding on environmental conservation at the 0.05 level, rejecting the hypothesis. This could be stated that people with different levels of education possessed the same level of electrical energy conservation, similar to the research of Aranya Ruksitanon (1995: 93-94) on "Resident's Energy Saving Behavior in Ampoe Muang Nonthaburi Province." The result was not associated with the study of Jullada Chaihudcharoen (1993: 69) on "Factor Influencing Bangkok Housewives' Energy Saving Behavior."

5.4 The Association between Independent Variables and Fuel Energy Conservation Behavior of the Undergraduate Students in Prince of Songkla University, Pattani Campus.

5.4.1 Fuel Energy Conservation Behavior of the Undergraduate Students in Prince of Songkla University, Pattani Campus association with Independent Variables.

1. The students' fuel energy conservation behavior significantly depended on gender at the 0.05 level. It accepted the hypothesis. The result could be stated that females always seemed to be responsible for household chores especially cooking, which was necessary to utilize fuel energy. In so doing, it could affect fuel energy conservation behavior similar to the study of Wichan Maneechote (1992: 75) on "The Environmental Conservation Behavior of Matthayomsuksa 3 students in Songkla Province." The result was not in accordance with the work of Soontaree Cheentham

(1988: 120) on "A Study of Factor Related to Behavior in Environmental Conservation of the People in Pathom Asoke Project, Tambon Praprathon, Amphoe Muang, Nakornpathom Province."

2. The students' fuel energy conservation behavior significantly depended on information on environmental conservation at the 0.05 level, accepting the hypothesis. The result could come from economic crisis in Thailand. It had an effected on oil prices in the world market. Media, consequently, launched many campaigns to promote fuel energy conservation, causing fuel energy conservation. The result was associated with the research of Wichan Maneechote (1992: 89-90) on "The Environmental Conservation Behavior of Matthayomsuksa 3 students in Songkla Province."

5.4.2 Fuel Energy Conservation Behavior of the Undergraduate Students in Prince Songkla University, Pattani Campus did not associate with Independent Variables.

1. The students' fuel energy conservation behavior did not significantly depend on faculty at the 0.05 level, which rejected the hypothesis. This was probably because curriculum management on fuel energy conservation could not motivate the students to be aware of environmental issues although most of fuel energy conservation content was infused in many subjects. The curriculum management, hence, had no effect on fuel energy conservation. The result was not congruent with the study of Chatchai Oncharoen (199:107) about "Knowledge and Opinion of Mathayomsuksa Six Students in Samutprakarn Province Regarding Environmental Pollution", stating that students

with either Science or Arts program had various opinions on environmental pollution in Samutprakarn Province. It was probably in the wake of environmental content.

2. The students' fuel energy conservation behavior did not significantly depend on grade point average at the 0.05 level, rejecting the hypothesis. This could be explained that knowledge on fuel energy conservation was infused in many subjects at the nearly low level. The students' fuel energy conservation behavior mostly came from their general knowledge or from media depending on their individual interest. The study of Pongsakon Maharack (1993: 113) on "Knowledge and Practices in Soil and Water Conservation a Study of Farmer in Sapuetal Village Piboonmansahan District Ubonratchathani Province."

3. The students' fuel energy conservation behavior did not significantly depend on environmental problem perception at the 0.05 level, which rejected the hypothesis. This was probably because students' attention to environmental problem perception were not individually different, including a lack of awareness of causes and effects on environmental problems. Environmental problem perception, thus, did not correspond with fuel energy conservation behavior. The research of Pattamavadee Vongsit (1990:69) about "Knowledge and Application of the Environmental Problems of the Upper Secondary School Students in Ayuthaya Province", stating that although students with no different levels of knowledge followed environmental problem perception, it had no effect on intention of environmental practices.

4. The students' fuel energy conservation behavior did not significantly depend on knowledge and understanding on environmental conservation at the 0.05 level. It rejected the hypothesis. The result could be stated that people with different levels of knowledge possessed emotion, perception, and decisions, which they collected so as to

stipulate their own ideas in the same direction. The result was not in accordance with the study of Danai Damrongsakul (1991:95) on "Knowledge and Attitudes of Technical Agriculture Students in Rajamongala Institute of Technology toward Environmental Pollution Problem", depicting that agriculture students with different levels of knowledge had different levels of participation in environmental clubs.

5.5 The Association between Independent Variables and Water Conservation Behavior of the Undergraduate Students in Prince of Songkla University, Pattani Campus.

5.5.1 Water Conservation Behavior of the Undergraduate Students in Prince of Songkla University, Pattani Campus did not associate with Independent Variables.

1. The students' water conservation behavior did not significantly depend on gender at the 0.05 level, which rejected the hypothesis. This could be explained that the sample group, both males and females, lived in similar environment. Their water conservation behavior, thus, was not different. So was the study of Udom Yamchuenpong (1994: 93) on "The Participation of the Tambol Council Association in the Conservation of the Thacheen River: A Case Study of the Area in Amphoe Nakornchisri, Nakornpathom Province." The result was not congruent with the study of Supan Jaogasigon (1996) about "The Knowledge and Practice Concerning Water Conservation of Mathayomsuksa 3 Students in Nakornpathom Province."

2. The students' water conservation behavior did not significantly depend on faculty at the 0.05 level. It rejected the hypothesis. This was probably due to different levels of knowledge on environmental which was infused more in Science program than Education, Humanities, and Social Science. In practical, nevertheless, students

from various faculties learned water conservation behavior from their life experience more than from curricula. The result was congruent with the study of Songtham Kanjanapiboon (1998: 81-82) on "Roles of Educational Administration at the Department of Vocational Education in Promoting Environmental Education", explaining that education administration possessed the same way of practical practices in supporting environment. The result did not correspond with the Study of Chairawut Sasiworadet (1998: 79) on "Communication Public Health Officers' Participation in Environmental Pollution Problem-Solving: A Case Study of Samutprakarn Province."

3. The students' water conservation behavior did not significantly depend on grade point average at the 0.05 level, which rejected the hypothesis. The result could be explained that the sample group personally experienced the similar level of environmental problems. Moreover, most of them did not study in environmental program, especially water conservation behavior from water crisis. So water conservation behavior did not correspond with grade point average, similar to the research of Kannika Prakobsap (1994: 100) on "The Participation in Thacheen River Conservation by the Committees of Tambol Council in Suphanburi Province." It was not matched with the research of Soontaree Cheentham (1988:93) on "A Study of Factor Related to Behavior in Environmental Conservation of the People in Pathom Asoke Project, Tambon Prapraton, Amphoe Muang, Nakorn Pathom Province."

4. The students' water conservation behavior did not significantly depend on information perception on environmental conservation at the 0.05 level. It rejected the hypothesis. This could be mentioned that the same level of information perception on water conservation during the same time caused the students' knowledge to have no effect on students' water conservation behavior. The result was in accordance with the

study of Pongsakon Maharack (1997:97) about "Knowledge and Practices in Sapuetal Village Piboonmansahan District Ubonrachathani Province."

5. The students' water conservation behavior did not significantly depend on environmental problem perception at the 0.05 level, rejecting the hypothesis. It could be revealed that the students paid the same level of attention to environmental problems. Besides, they lacked awareness of causes and effects from environmental problems. Environmental problem perception, then, did not correspond with water conservation behavior, and so was the research of Vajinee Sangswai (1992:95) on "Local People's Behavior on Sanitation for Tourism Promotion at Damnoen Saduak Floating Market, Ratchaburi Province."

6. The students' water conservation behavior did not significantly depend on knowledge and understanding on environmental conservation at the 0.05 level, which rejected the hypothesis. This was probably because the students were educated to care for their environment, including water conservation, by media and also realized how important it was. This could effect their water conservation behavior. And so was the study of Niramon Klubchum (1991:86) on "Knowledge and Behaviors of Teaching College Students Regarding Environmental Pollution in Bangkok Metropolis", depicting that teaching college students who took part in environmental activities or did not do so possessed the similar level of knowledge on environmental pollution. The result was not congruent with the research of Tardtip Somton (1999: 84) on "Knowledge, Attitude, and Behaviors Community Nurses, Solid Waste and Waste Water in Bangkok", showing that most of the nurses possessed knowledge on water conservation and were aware of water saving by, for instance, turning the tap off completely after use as well as reusing household water.

5.6 The Association between Independent Variables and Cleanliness Behavior of the Undergraduate Students in Prince of Songkla University, Pattani Campus.

5.6.1 Cleanliness Behavior of the Undergraduate Students in Prince of Songkla University, Pattani Campus Association with Independent Variables.

1. The students' cleanliness behavior significantly depended on the hypothesis. The result could be explained that the students with high level of grade point average had a firm grasp of general knowledge, including cleanliness more than others. It was probably due to their being studious. So it could directly affect their own behavior, similar to the study of Wichan Maneechote (1992:60) on "The Environmental Conservation Behavior of Mathayomsuksa 3 Students in Songkla Province."

2. The students' cleanliness behavior significantly depended on knowledge and understanding on environmental conservation at the 0.05 level, which accepted the hypothesis. The result might have come from knowledge which was motivation for more awareness of causes, effects, as well as tangible problem solving. This could cause more environmental participation. The result was in accordance with the study of Sobsuk Leelabutra (1995: 98) on "Local People Participation in Environmental Conservation: A Case Study of Ko Kert Nonthaburi Province", depicting that people with high level of environmental knowledge possessed environmental conservation behavior more than those with low level. The result did not correspond with the study of Taratip Somton (1999:113) on "Knowledge, Attitude and Behaviors Community Nurses, Solid Waste and Waste Water in Bangkok", showing that nurses possessed the low level of knowledge on causes, effects and necessity for household waste classification.

5.6.2 Cleanliness Behavior of the Undergraduate Students in Prince of Songkla University, Pattani Campus did not associate with Independent Variables.

1. The students' cleanliness behavior did not significantly depend on gender at the 0.05 level, which rejected the hypothesis. This was probably because makes or female with the same direction of cleanliness values, and also in the similar environmental possessed the similar cleanliness behavior. So was the research of Wassana Rajanasiriporg (1988: 71) on "The Values on Cleanliness of Primary School Students in Bangkok Metropolis." The result was not in accordance with the study of Yuwadee Imdai (1986: 91) on "Social and Psychological Factors Relate to the Intention of Keeping in the High School in Bangkok."

2. The students' cleanliness behavior did not significantly depend on faculty at the 0.05 level, rejecting the hypothesis. It could be stated that the content of particular major such as Sciences focused on physics, chemistry, and biology; whereas those of others focused on social, economics, politics and arts. On the other hand, cleanliness was the one thing that they all had experienced in their everyday life. Faculty, therefore, did not correspond with cleanliness. The result was not in accordance with the study of Chatchai Oncharoen (199-: 107) on "Knowledge and Opinion of Mathayomsuksa Six Students in Samutprakan Province Regarding Environmental Pollution", revealing that the students majoring in Sciences and Arts had different opinions on environmental pollution due to the contents of a particular course of study.

3. The students' cleanliness behavior did not significantly depend on information perception on environmental conservation at the 0.05 level. It rejected the hypothesis. It could be mentioned that other media, nowadays, have presented the

similar ways of conservation. Therefore it did not correspond with the students' cleanliness behaviors. The result was matched with the study of Piyanuch Phomee (1998: 112) on "Roles of Educational Administrators of Secondary Schools in the Educational Reginals on Promoting Environmental Education", depicting that the dissemination of government's environmental conservation through media was at the low level. So it could not the study of Somchai Ampanthong (1989:94) on "Knowledge, Attitude and Behavior of Secondary School Administration in Bangkok Metropolis the Environmental Problems in Thailand", stating that levels of administrators' behavior affecting environmental problems in Thailand significantly depended on information perception on environmental conservation.

4. The students' cleanliness behavior did not significantly depend on environmental problem perception at the 0.05 level, rejected the hypothesis. The result might have come from the similar level of the students' attention to environmental problem perception as well as a lack of awareness of causes and effects from environmental problems. Environmental problem perception , thus, did not correspond with the cleanliness behavior, similar to the study of Vajinee Sangswai (1992: 95) on "Local People's Behavior on Sanitation for Tourism Promotion at Damnoen Saduak Floating Market, Ratchaburi Province."

5.7 The Association between Independent Variables and Participation in Environmental Conservation of the Undergraduate Student in Prince of Songkla University, Pattani Campus.

5.7.1 Environmental Conservation Participation of the Undergraduate Students in Prince of Songkla University , Pattani Campus associated with Independent Variables.

1.The students' environmental conservation participation significantly depended on faculty at the 0.05 level. It accepted the hypothesis. This was probably due to the fact that the Faculty of Sciences holded environmental experiments in the course of the study more than those of Education, Humanities , and Social Sciences. The Faculty of Sciences , thus, provided environmental activities for the students more than all of those faculties, - similar to the study of Suwanee Yuvachart (1989 : 101) on " A Study of the environmental conservation Behavior of the Vocational Students Under the Department of Vocational Education in Bangkok"

5.7.2 Environmental conservation participation of the Undergraduate Students in Prince of Songkla University , Pattani Campus did not associate with Independent Variables.

1. The students' environmental conservation participation did not significantly depend on gender at the 0.05 level. It rejected the hypothesis. This might result from the same level of the students' , both males and females, environmental problem experience. Consequently, it brought about the similar behavior as well as the same level of environmental conservation participation. The result was probably for to the activities which were not interesting enough to motivate the students' participation. Just as the research of Wiparat Kitisupornphan (1998: 74) on " The Factor Influencing High School Students Knowledge of the Environmental Issues. Posed by Nuclear Power Plants" found that both males and females paid the same level of attention to

their class and searching for more general knowledge, directly and indirectly, through other media. The result assumption did not correspond with the study of Chairewut Sasiworadet (1998:93) on " Communication Public Health Officers' Participation in Environment Pollution Problem-Solving : A Case Study of Samutprakarn Province."

2.The students' environmental conservation participation did not significantly depend on grade point average at the 0.05 level, rejecting the hypothesis. The result might derive from the different levels of knowledge on environment of various faculties, including the students' experiences, learning, and also their attention, the students' environmental conservation participation, as a result, did not correspond with the study of Vajinee Sangswai (1992: 81) on " Local People's Behavior on Sanitation for Tourism Promotion at Damnoen Saduak Floating Market, Ratchaburi Province."

3. The students' environmental conservation participation did not significantly depend on information perception on environmental conservation at the 0.05 level, which rejected the hypothesis. It could be mentioned that public relations for environmental conservation at present, focused on students' personal environmental conservation but they lacked of supporting group activities for brainstorming ideas on environmental conservation. Similar to the study of Sobsuk Leelabutra (1995: 96)on " Local People Participation in Environmental conservation : A Case Study of Ko Kert Nonthaburi Province", it was found that people with the high level of knowledge on environment possessed the higher level of environmental conservation than those with the low level of knowledge.

4. The students' environmental conservation participation did not significantly depend on environmental problem perception at the 0.05 level. It was rejected the hypothesis. The result might have come from the same level of attention on

environment problem perception as well as lack of awareness of causes and effects from environmental problems. For this reason, environmental problem perception did not correspond with environmental conservation participation. And so was the research of Pattamavadee Vongsit (1990: 117) on " Knowledge and Application of The Environment Problems of the Upper Secondary School Students in Ayuthaya Province" showing caused their environmental problem perception have no effect on their attention of environmental practice.

5. The students' environmental conservation participation did not significantly depend on knowledge and understanding on environmental conservation at the 0.05 level, which rejected the hypothesis. It was probably because all activities for environmental conservation could not enhance the students' higher level of knowledge on environmental conservation. The result was associated with the study of Danai Damrongsakul (1991:81) on " Knowledge and Attitudes of Technical Agriculture Students in Rajamangala Institute of Technology Toward Environmental Pollution Problem." Which found that the technical agriculture students possessed the different levels of knowledge on environment. They also participated on environmental activities at the different levels.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 Characteristic of the Population.

The population consisted of 374 students of Prince of Songkla University Pattani Campus studying in the second semester of the academic year 2000. Most of the students were female (68.4 percent), male (31.6 percent), from the Faculty of Humanities and Social Sciences (39.3 percent), the Faculty of Education (34 percent), the Faculty of Sciences and Technology (15.5 percent), and Islamic College (11.2 percent), consecutively. In the part of Grade Average Point (GPA), most of the sample groups were in 2.50 – 2.99 (46.5 percent), 2.00 – 2.49(25.7 percent), and the lowest was 10-.00 – 1.49 (16 percent).

6.1.2 Environmental Conservation Information Perception, Environmental Problems Perception, and Knowledge on Environmental Conservation of the Population.

As to the environmental conservation perception from the distinguished media, they were found that 60.7 percent of the sample groups received information from television at the highest level, 10.4 percent were from Newspaper, Journals, and Magazines. 1.1 percent of the sample groups received environmental conservation information from environmental instructors, relations and people in the family at the lowest level.

As to the study on the attitude on environmental problem in Pattani Campus of Prince of Songkla University, it was found that there were 9 problems: major problem

such as Industrial area population problem (72.2 percent), and cleanliness in public restroom problem (65.8 percent).

According to the study of knowledge on environmental conservation of the sample groups, it was found that 47.6 percent of the sample groups possessed knowledge on and understanding on environmental conservation at the moderate level. 31.8 percent and 20.6 percent of the sample groups possessed knowledge on environmental conservation at the high level and low level consecutively.

6.1.3 Participation in Environmental Conservation Activities.

On academic year 2000, there were 8 activities programs about environmental conservation. It was found that nearly half (44.4 percent) of the sample groups had participated on reforestation activity at the highest level, 30.2 percent of the sample groups had participated on environmental conservation rally, and 5.9 percent had participated in the forest dwelling sight-seeing at the lowest level.

Concerning to environmental conservation participation with other organizations, it was found that most of the sample groups had not participated in the environmental conservation activity at 46 percent and participated with other 2 organizations at 31.3 percent.

According to the study, the level of the participation on environmental conservation activity at the moderate level (36.9 percent), high level (31.8 percent), and low level (31.3 percent).

Respecting the hypothesis concerning the study, it was stated that participation on environmental conservation activity would considerably depended on gender, faculty, Grade point average (GPA), knowledge on environmental conservation,

environmental problem perception, knowledge and understanding on environmental conservation at 0.05. The level of participation concerning environmental conservation significantly depended on the faculty at 0.05; on the other hand, the level of participation concerning environmental conservation of the sample groups did not depend on gender, Grade point average (GPA), environmental conservation information perception, environmental problem perception, and knowledge as well as understanding on environmental conservation.

6.1.4 Environmental Conservation Behavior.

As to the study of the level of environmental conservation behavior consisting of electrical energy conservation behavior, fuel energy conservation behavior, water conservation behavior, and cleanliness behavior. It was found that the sample groups possessed environmental conservation behavior at moderate level (50.5 percent), the similar level of desirable conservation behavior and undesirable conservation behavior were 94 percent and 91 percent, respectively. When the study of the level of environmental conservation behavior was categorized into 4 groups: electrical conservation behavior, fuel energy conservation behavior, waters conservation behavior, and cleanliness behavior, it was found that most of the sample groups possessed electrical energy conservation behavior, waters conservation behavior, and cleanliness behavior at the moderate level nearly half 49.5 percent, 45.5 percent, and 47.4 percent consecutively. Most of the sample group had possessed fuel energy conservation.

Relating the hypothesis concerning the study of the level of environment conservation behavior, they were found that the level of environmental conservation

behavior would significantly depend on gender, Grade Point Average (GPA), environmental conservation information perception at 0.05. Environmental conservation significantly depended on gender at 0.05; therefore, it can be concluded that environmental conservation behavior really depended on gender refer to the hypothesis.

For environmental energy conservation behavior, when the hypothesis was analyzed that the level of electrical energy conservation had significantly depended on gender, faculty, Grade Point Average (GPA), environmental conservation information perception, environmental problem perception, and knowledge as well as understanding on environmental conservation at 0.05, they were found that electrical energy conservation had not significantly depended on gender, faculty, Grade Point Average (GPA), environmental conservation information perception, environmental problem perception, and knowledge as well as understanding on environmental conservation at 0.05. Apparently, the results were against the hypothesis.

As the study on the hypothesis concerning fuel energy conservation behavior, the level of fuel energy conservation behavior had significantly depended on gender, faculty, Grade Point Average (GPA), environmental conservation information perception, environmental problem perception, and knowledge as well as understanding on environmental conservation at 0.05. It was found that fuel energy conservation behavior had significantly depended on gender, environmental conservation information perception at 0.05. Therefore the result directly referred to the hypothesis; on the other hand, fuel energy conservation behavior had not significantly depended on faculty, Grade Point Average (GPA), environmental

problem perception, and knowledge as well as understanding on environmental conservation at 0.05 against the hypothesis.

As to the study on the hypothesis concerning water conservation behavior, the level of water conservation behavior had significantly depended on gender, faculty, Grade Point Average (GPA), environmental problem perception, and knowledge as well as understanding on environmental conservation at 0.05. It was found that water conservation behavior had not significantly depended on gender and knowledge as well as understanding on environmental conservation at 0.05.

As to the study on the hypothesis concerning cleanliness behavior, the level of the cleanliness behavior had significantly depended on gender, faculty, Grade Point Average (GPA), environmental conservation information perception, environmental problem perception, and knowledge as well as understanding on environmental conservation at 0.05. It was found that cleanliness behavior had significantly depended on Grade Point Average (GPA), and knowledge as well as understanding on environmental conservation behavior at 0.05; on the other hand, cleanliness behavior had not significantly depended on gender, faculty, environmental conservation information perception, and environmental problem perception at 0.05 level of statistically significance.

6.2 Recommendations of the study.

1.According to the result of the study, the activity concerning environmental conservation in the university should be more emphasized on the participation of the student and establish awareness and conscience behavior on environmental morality.

2.There should be an encouragement on environmental conservation behavior by many education institutions co-operation, which had the same purpose on providing environmental study, establishing knowledge and understanding as well as attitude towards environment.

3. There should be a training program focusing on environmental study providing to the teachers from any majors and there should establish a teaching manual inserting environmental study and complexity natural resource of social, economy, politic which will help learners adapting their life to the environmental appropriately.

4. The university should support all activities concerning environmental conservation as well as promoting in any different ways such as Exhibition, Broadcasting on the radio, Slogan Board, Environmental Problem Education Contest, Environmental Essay Contest, Journal and all above mentioned should be a responsible of the student as well.

6.3 Recommendations for the further study.

1.For the next future study, there should be studied on the environmental behavior of undergraduate students in other universities. The result may be differently owing to environment and divert cultures. Besides, research in other regional be gone over carefully interesting variable.

2. The instrument, which should be used to collect data about behavior level should be an observing together with an interview which make the results more clearly and deeply.

3. There should be studied on a matter that would affect to establish awareness on environmental conservation and natural resource. A result of quantity research which may merely acquire basic information and cannot affect the sample group realizing environment.

4. There should be studied whether the action of the teacher have an influence to student's environmental behavior in their school or not. It could happened by studying how lecturers adjust theories and ideas an Environmental Education.

BIBLIOGRAPHY

In English

Bartley S.H. Principle of Perception. New York : Harper and Rew, p. 22-23 : 1972.

Bloom, Benjamin S. A.Taxonomy of Education Objectives:Handbook I, The Cognitive Domain.New York, Longman, green Co., 1956.

Bloom , Benjamin S. Taxonomy of Education Objection. New York : David Mckay Company , Inc., 1975.

Brown , Frederick G. Principel of Education and Psychological Testing. New York : Holt Rinehart & Winston.

Garrison Karl C. and Robert Magoon. Education Psycology. Columbus, Ohio : Charles E.Merrill Co., 1972.

Good, Carter V. Dictionary of Education. New York : Mc Graw-Hill Book Company, 1973.

Crobach, Lee Josseph and other. The Dependability of Behavioral Measurements : Theory of Generalizability for Sorces and Profiles. New York : willey, 1972.

Famham, Peter, A Report on the Belgrade Conference on Environmental Education. International workshop on Environmental Education Belgrade, October 1975.

Goldenson M Robert, Longman Dictionary of Psychology and Psychiatary. New York :Longman Inc. 1984.

Guskin, Alan E. Changing values of Thai college students, a research report by Alan E. Guskin and Tussance Sookthawee. Bangkok : Faculty of Education, Chulalongkorn University,1964.

Jersild, Arthur T. Child Psychology. 6th ed. Englewood Cliffs, N.J. : Printice-hall, Inc., 1968 :575.

Jones V. "Character Development in children : An Objective Approach." In L. Carmichael (ed),In Manual of Child Psychology. New York : John Willey, 1954.

Munn, Normal L. Introduction to Psychology. Bostan : Houghton Mifflin Co. 1962.

Sanders, Donald H., Murph, A frankin and Eng, Robert J., Statistics : A fresh Approach. New York : Mcgraw-Hill cook Company, 1980: 248.

Smith Edward W. The Lexicon Webster Dictionary Encyclopedia Edition. The United State of America : The Engish Language Institute of America, Inc.,1977.

Yamane, T. Statistics. An Introduction Analysis. Singapore : Times Printers., 1973.

Zacher, Lawreehce J. " A Study of Factors Affecting of Environmental of Eleventh Grade Student In Montana." Dissertation Abstracts International. 37, 1977. Pp. 5016 A.

In Thai

กมลรัตน์ หล้าสุวงษ์. จิตวิทยาการศึกษา. กรุงเทพฯ : ศรีนครินทรวิโรฒ, คณะศึกษาศาสตร์, 2524.

กรุณา กิจขยัน. ความสัมพันธ์ระหว่างความมีวินัยแห่งตน ความเชื่ออำนาจภายนอกตนและคุณธรรมแห่งพลเมืองดี. วิทยานิพนธ์ปริญญาการศึกษามหาบัณฑิต บัณฑิตวิทยาลัย มหาวิทยาลัยศรีนครินทร์วิโรฒ ประสานมิตร, 2517.

กาญจนา แก้วเทพ. วิธีการสอนและทักษะการสอนสิ่งแวดล้อมศึกษา. กรุงเทพฯ : คณะศึกษาศาสตร์ มหาวิทยาลัยศรีนครินทร์วิโรฒ ประสานมิตร, 2537.

กาญจนา เมธีกุล. การศึกษาประสิทธิผลของหนังสือพิมพ์รายวันที่มีต่อนักเรียนชายและหญิงในชั้นมัธยมศึกษาตอนต้น โรงเรียนบางมูลนาวิทยาคม. สารนิพนธ์โครงการ ม.ป.อ. คณะเศรษฐศาสตร์ มหาวิทยาลัยธรรมศาสตร์, 2521.

เกษม จันทร์แก้ว.วิทยาศาสตร์สิ่งแวดล้อม. พิมพ์ครั้งที่2. กรุงเทพฯ : อักษรสยามการพิมพ์, 2525.

เกษม จันทร์แก้ว. วิทยาศาสตร์สิ่งแวดล้อม. กรุงเทพฯ : อักษรสยามการพิมพ์, 2530

โกสินทร์ รังสยาพันธ์. การศึกษากับปัญหาความสกปรกเป็นพิษของสิ่งแวดล้อม. ปริญญานิพนธ์ศึกษาศาสตร์ดุษฎีบัณฑิต. บัณฑิตวิทยาลัยมหาวิทยาลัยศรีนครินทร์วิโรฒ ประสานมิตร, 2521.

คณะกรรมการสิ่งแวดล้อมแห่งชาติ, สำนักงาน. นโยบายและมาตรการพัฒนาสิ่งแวดล้อมแห่งชาติ. กรุงเทพฯ : สำนักเลขาธิการคณะรัฐมนตรี, 2530.

คณะกรรมการสิ่งแวดล้อมแห่งชาติ, สำนักงาน. สรุปสาระสำคัญแผนพัฒนาเศรษฐกิจและสังคมแห่งชาติ ฉบับที่ 7. กรุงเทพฯ : สำนักงานคณะกรรมการการพัฒนาการเศรษฐกิจและสังคมแห่งชาติ, 2534.

งามเชิด หอรัตนชัย. "ขยะอีกปัญหาหนึ่งของกรุงเทพมหานคร." วารสารสมาคมไทย-อเมริกัน. ปีที่ 7 ฉบับที่ 1, 2518.

จำเนียร ช่วงโชติและคณะ. จิตวิทยาการรับรู้และการเรียนรู้. กรุงเทพฯ : การศาสนา, 2526.

จิตรา วสุวานิช. จิตวิทยาการศึกษา.(พิมพ์ครั้งที่3) กรุงเทพฯ : มหาวิทยาลัยรามคำแหง , 2528

จินตนา ศรีนุกูล. พฤติกรรมการทิ้งขยะของประชาชนในเขตพื้นที่ชั้นในของกรุงเทพมหานคร. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต สาขาวิทยาศาสตร์สิ่งแวดล้อม บัณฑิตวิทยาลัย มหาวิทยาลัยเกษตรศาสตร์, 2535.

ฉัตรชัย เจียมอรมรัตน์. การศึกษาค่านิยมในการประหยัดพลังงานของนักเรียนมัธยมศึกษาปีที่ 5 เขตการศึกษา 5. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2528.

เฉลิม อ่ำเอี่ยม. ปัจจัยที่มีอิทธิพลต่อเจตคติเกี่ยวกับปัญหาสิ่งแวดล้อมของนักเรียนระดับมัธมศึกษาปีที่ 3. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษาบัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2528.

ชม ภูมิภาค. จิตวิทยาการเรียนการสอน. กรุงเทพฯ : ไทยวัฒนาพาณิช , 2516.

ชวาล แพรัตกุล. เทคนิคการวัดผล. กรุงเทพฯ : ไทยวัฒนาพานิช , 2526

ชัยพร วิชชาวุธ. การวิจัยเชิงจิตวิทยา. กรุงเทพฯ : ไทยวัฒนาพานิช, 2523

ชุดา จิตพิทักษ์. พฤติกรรมศาสตร์เบื้องต้น. กรุงเทพฯ: สารมวลชน, 2525

ชุลีพร ไกรเวียง. ปัจจัยที่มีความสัมพันธ์กับการรับรู้เกี่ยวกับการอนุรักษ์ทรัพยากรป่าไม้ของนักท่องเที่ยว ในเขตอุทยานแห่งชาติเขาใหญ่. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหา บัณฑิต สาขาสิ่งแวดล้อมศึกษา บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2531.

ณรงค์ สินสวัสดิ์. จิตวิทยาการเมือง. กรุงเทพฯ : โรงพิมพ์มหาวิทยาลัยธรรมศาสตร์, 2519.

ณรงค์ ศรีสนิท. ความรู้และเจตคติที่มีต่อปัญหาสิ่งแวดล้อมของนักศึกษาส่วนกลาง. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา บัณฑิตวิทยาลัย, 2524.

ทวี ทองสว่าง และทัศนีย์ ทองสว่าง. การอนุรักษ์ทรัพยากรธรรมชาติและสิ่งแวดล้อม. กรุงเทพฯ : อักษรสยามการพิมพ์, 2523.

ทวีบุญ แสงหล้า. เจตคติของนักเรียนมัธยมศึกษาตอนปลายในจังหวัดพระนครศรีอยุธยาต่อปัญหาสิ่งแวดล้อม. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต. บัณฑิตวิทยาลัย มหาวิทยาลัยเกษตรศาสตร์, 2529.

นโยบายและแผนสิ่งแวดล้อม สำนักงาน. นโยบายและแผนการส่งเสริมและรักษาคุณภาพสิ่งแวดล้อมแห่งชาติ พ.ศ.2540-2559. กรุงเทพฯ : สำนักงานนโยบายและแผนสิ่งแวดล้อม, 2540.

นิวัติ เรืองพานิช. การอนุรักษ์ทรัพยากรธรรมชาติ. กรุงเทพฯ : อักษรสยามการพิมพ์, 2517.

นิวัติ เรืองพานิช. การอนุรักษ์ทรัพยากรธรรมชาติและสิ่งแวดล้อม. พิมพ์ครั้งที่ 2. คณะวนศาสตร์ มหาวิทยาลัยเกษตรศาสตร์, กรุงเทพฯ : สำนักพิมพ์รั้วเขียว. 2537.

บุณธรรม กิจปรีดาบริสุทธ์. ระเบียบวิธีการวิจัยทางสังคมศาสตร์. (พิมพ์ครั้งที่4) กรุงเทพฯ : สามเจริญพานิช, 2531.

บุญนำ ทานสัมฤทธิ์. ความรู้และความคิดเห็นของครูโรงเรียนมัธยมศึกษา ในเขตกรุงเทพมหานครเกี่ยวกับสิ่งแวดล้อมสกปรก. วิทยาศาสตร์ครุศาสตรมหาบัณฑิต แผนกมัธยมศึกษา. บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย, 2520.

ประคอง กรรณสูต. สถิติเพื่อการวิจัยทางพฤติกรรมศาสตร์. กรุงเทพฯ :สำนักพิมพ์บรรณกิจ ,2525.

ประพันธ์ โกยสมบูรณ์. ทัศนคติของนักเรียนมัธยมศึกษาในเขตกรุงเทพมหานครที่มีต่อการอนุรักษ์ทรัพยากรป่าไม้. วิทยานิพนธ์ปริญญาวิทยาศาสตร์มหาบัณฑิต. บัณฑิตวิทยาลัย มหาวิทยาลัยเกษตรศาสตร์, 2519.

ประภาเพ็ญ สุวรรณ. ทัศนคติ : การเปลี่ยนแปลงทัศนคติและพฤติกรรมอนามัย. กรุงเทพฯ : ไทยวัฒนาพานิช, 2526.

ปราณี สุขรัตนชัยกุล. ค่านิยมเกี่ยวกับการอนุรักษ์ทรัพยากรป่าไม้ของนักศึกษาวิทยาลัยครูส่วนกลาง. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2523.

ปริญญา นุตาลัย. การอนุรักษ์ทรัพยากรธรรมชาติและสิ่งแวดล้อมของประเทศไทย.(พิมพ์ครั้งที่3) กรุงเทพฯ : ชวนการพิมพ์, 2535.

ปัทมาวดี วงษ์ศิลป์. ความรู้และความตั้งใจในการปฏิบัติเกี่ยวกับปัญหาสิ่งแวดล้อมของนักเรียนชั้นมัธยมศึกษาตอนปลาย ในจังหวัดพระนครศรีอยุธยา. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2523.

พิกุล คำรอด. ค่านิยมเกี่ยวกับการอณุรักษ์ป่าชายเลนและความคิดเห็นเกี่ยวกับการสอนการอนุรักษ์ป่าชายเลนของครูประถมศึกษาในจังหวัดจันทบุรี. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2531.

แพรรพรรณ เกิดโภคา. ค่านิยมทางจริยธรรมของนักเรียนอาชีวศึกษาในกรุงเทพมหานคร. วิทยานิพนธ์ปริญญาศิลปศาสตรมหาบัณฑิต สาขาอาชญาวิทยาและงานยุติธรรม. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2525.

เย็นฤดี สุภัณวงษ์ และรัชนี โล่ห์วัชรสันติ. "สองสามนาทีกับนักวิชาการด้วยภาษาชาวบ้าน" วารสารสิ่งแวดล้อม. 3 (ตุลาคม 2523) : 6.

วัฒนา จันทรเสน. พฤติกรรมการอนุรักษ์สิ่งแวดล้อมของนักศึกษาระดับประกาศนียบัตรวิชาชีพชั้นสูง ประเภทวิชาการอุตสาหกรรม ในสถานศึกษาสังกัดกรมอาชีวศึกษา. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2539

วาสนา โรจนศิริพงษ์. ค่านิยมเกี่ยวกับการรักษาความสะอาดของนักเรียนประถมศึกษา ในกรุงเทพมหานคร. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2523

วาสนา วราภักต์. จริยธรรมทางสิ่งแวดล้อมของนักเรียนในกรุงเทพมหานคร. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2523

วิจัยสภาวะแวดล้อม จุฬาลงกรณ์มหาวิทยาลัย สถาบัน. สภาวะแวดล้อมของเรา. กรุงเทพฯ : จุฬาลงกรณ์มหาวิทยาลัย, 2542

วิจิตร คงพูล. "สิ่งแวดล้อม" สารสิ่งแวดล้อม. ปีที่ 2 (เมษายน 2519) : 42

วิชัย พัฒนาวงศ์ธรรม. เจตคติต่อการอนุรักษ์ทรัพยากรป่าไม้ของนักศึกษาวิทยาลัยครูภาคใต้. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต สาขาวิทยาศาสตร์สิ่งแวดล้อม. บัณฑิตวิทยาลัย มหาวิทยาลัยเกษตรศาสตร์, 2524.

วิชัย วงศ์ใหญ่. พัฒนาหลักสูตรและการสอนมิติใหม่. กรุงเทพฯ : โรงพิมพ์รุ่งเรือง, 2533.

วิชาญ มณีโชติ. พฤติกรรมการอนุรักษ์สิ่งแวดล้อมของนักเรียนชั้นมัธยมศึกษาปีที่ 3 ในจังหวัดสงขลา. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2535.

วินัย วีระวัฒนานนท์. กระบวนการสิ่งแวดล้อมศึกษา: แนวคิดพื้นฐานและการนำไปปฏิบัติสำหรับสิ่งแวดล้อม. เอกสารโรเนียวเย็บเล่ม มหาวิทยาลัยมหิดล, 2529.

วินัย วีระวัฒนานนท์. กระบวนการสิ่งแวดล้อมศึกษา. กรุงเทพฯ : โอเดียนสโตร์, 2532.

ศิริพรต ผลสินธุ์. ชีวิตกับสิ่งแวดล้อม. กรุงเทพฯ : วิทยาลัยครูบ้านสมเด็จเจ้าพระยาสหวิทยาลัยรัตนโกสินทร์, 2531.

ส่งเสริมคุณภาพสิ่งแวดล้อม, กรม. การอนุรักษ์สิ่งแวดล้อม. พิมพ์ครั้งที่ 3. กระทรวงวิทยาศาสตร์เทคโนโลยีและสิ่งแวดล้อม, 2536.

ส่งเสริมคุณภาพสิ่งแวดล้อม, กรม.สิ่งแวดล้อม' 37. กรุงเทพฯ : กรมส่งเสริมสุขภาพ, 2537.

สถิต วงศ์สวรรค์. จิตวิทยาการศึกษา. กรุงเทพฯ : บำรุงสาสน์, 2525.

สมจิตต์ ตรีวิเชียร. "การรักษาความสะอาดของกรุงเทพมหานคร." กรุงเทพมหานคร 2527. สำนักงานนโยบายและแผนกรุงเทพมหานคร, 2527.

สมจิตต์ สุพรรณทัศน์. "ความหมายของพฤติกรรม" เอกสารการสอนชุดวิชาวิชาสุขศึกษา หน่วยที่ 1-7. มหาวิทยาลัยสุโขทัยธรรมาธิราช, กรุงเทพฯ : อรุณการพิมพ์, 2526.

สมชาย อำพันทอง. ความรู้ เจตคติ และพฤติกรรมของผู้บริหารโรงเรียนมัธยมศึกษา ในเขตกรุงเทพมหานคร ที่มีต่อปัญหาสิ่งแวดล้อมในประเทศไทย. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2523.

สมนึก อ่องเอิบ. การอนุรักษ์ทรัพยากรธรรมชาติ. กรุงเทพฯ : ไทยวัฒนาพานิช, 2519.

สาคร ถือเจริญ. การอนุรักษ์ทรัพยากรธรรมชาติ และปัญหาการอนุรักษ์ทรัพยากรธรรมชาติ. มหาสารคาม: มหาวิทยาลัยศรีนครินทรวิโรฒ มหาสารคาม, 2523.

โสภณ เดชมา. ทัศนคติของนักเรียนวิทยาลัยครูที่มีต่อการอนุรักษ์ทรัพยากรป่าไม้. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต สาขาวิทยาศาสตร์สิ่งแวดล้อม. บัณฑิตวิทยาลัย มหาวิทยาลัยเกษตรศาสตร์, 2524.

สุชา จันทร์เอม และสุรางค์ จันทร์เอม. หลักการศึกษาจิตวิทยา : หลักการสอน. พิมพ์ครั้งที่ 3. กรุงเทพฯ : แพร่พิทยา, 2517.

สุชา จันทร์เอม. จิตวิทยาสังคม. กรุงเทพฯ : ไทยวัฒนาพานิช, 2524.

สุเทพ ลัคนาวิเชียร. "ความสำนึกต่อสิ่งแวดล้อม" ปาจารยสาร. 6 (กรกฎาคม – กันยายน 2515) 85-88

สุโท เจริญสุข. พจนานุกรมคำศัพท์จิตวิทยา และประวัติจิตวิทยาสาระสำคัญ : ฉบับคู่มือ นิสิตนักศึกษา ระดับปริญญา. กรุงเทพฯ : โอเดียนสโตร์, 2520.

สุนทรี จีนธรรม. การศึกษาองค์ประกอบที่สัมพันธ์กับพฤติกรรมในการอนุรักษ์สิ่งแวดล้อมของประชาชน ในหมู่บ้านโครงการปฐมอโศก ต.พระประโทน อ.เมือง จ.นครปฐม. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2532.

สุวรรณี ยุวชาติ. การศึกษาพฤติกรรมการอนุรักษ์สิ่งแวดล้อมของนักเรียนอาชีวศึกษา สังกัดกรมอาชีวศึกษา ในกรุงเทพมหานคร. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2532.

อมรรัตน์ รีกิจติศิริกุล. พฤติกรรมเกี่ยวกับการส่งเสริมและรักษาคุณภาพสิ่งแวดล้อม ของนักเรียนชั้นมัธยม. วิทยานิพนธ์ปริญญาศึกษาศาสตรมหาบัณฑิต สาขาสิ่งแวดล้อมศึกษา. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล, 2523.

อำนาจ เจริญศิลป์. สภาวะแวดล้อมของเรา ตอนมลพิษสภาวะแวดล้อม. กรุงเทพฯ : จุฬาลงกรณ์-มหาวิทยาลัย, 2526.

APPENDIX

Questionnaire on Environmental Conservation Behavior of Undergraduate Students in Prince of Songkla University, Pattani Campus

QUESTIONNAIRE

The Environmental Conservation Behavior of Undergraduate Students in Prince of Songkla University, Pattani Campus

---

Please kindly complete the questionnaire on a true basis. All information provided will be kept absolutely confidential. Research will present the result merely as a whole.

The questionnaire comprises four sections as follow:

Section 1 Personal Information

Section 2 Environmental Problem Perception

Section 3 Knowledge on Environmental Conservation

Section 4 Environmental Conservation Behavior

The researcher would like to thank you all of the students for your benevolent cooperation

Best regrads

(Mr.Nopphanon Kachornsaknukul)

Student of Environmental Education Major

Faculty of Social Sciences and Humanities

Mahidol University

Section 1 Personal Information

Instructions Please put a check mark and / or complete all the necessary information on a form

1. Gender

( ) 1. Male ( ) 2. Female

2..Faculty

( ) 1. Humanities and Social Sciences

( ) 2. Faculty of Education

( ) 3. Science and Technology

( ) 4. Islamic Collage

3.Level of grade point average (G.P.A.)

( ) 1. 1.00-1.49 ( ) 2. 1.50-1.99

( ) 3. 2.00-2.49 ( ) 4. 2.50-2.99

( ) 5. 3.00-3.49 ( ) 6. 3.50-4.00

4.The sources that you have acquired information on environmental conservation.

(You can choose more than 1 choice)

( ) 1.Television ( ) 2.Radio ( ) 3.Newspaper

( ) 4.Magazine ( ) 5.Education media : brochure, exhibition, journal ,etc.

( ) 6.text book ( ) 7.Other people : scholars, relatives, friends , etc.

( ) 8. Environmental organization officers

5. The most used source from which you have received the environmental conservation information (only one choice)

( ) 1.Television ( ) 2.Radio ( ) 3.Newspaper

( ) 4.Magazine ( ) 5.Education media : brochure, exhibition, journal ,etc.

( ) 6.text book ( ) 7.Other people : scholars, relatives, friends , etc.

( ) 8. Environmental organization officers

6. Please put a check mark before your participation in the following environmental conservation activities of the university (It could be more than 1 choice)

Activities	For Staff only
☐ 1.Launching environmental activities onto schools (partial fulfillment of environmental education)	[1]
☐ 2. Environmental conservation activities for youths	[2]
☐ 3.Thai Environmental day	[3]
☐ 4. Forest plantation	[4]
☐ 5.Youth training activities for environmental conservation	[5]
☐ 6. Forest trips	[6]
☐ 7. Ethics on environmental conservation	[7]
☐ 8. Environmental conservation seminars	[8]

7. Have you ever experienced participation in environmental conservation activities of other organizations?

( ) 1. Yes .....times ( ) 2. No

.....

Section 2 Environmental Problem Perception

Instructions Please consider the following environmental problem in Prince of Songkla University, Pattani Campus and then tick / in the box that had an effect on you.

(It could be more than1 choice)

Environmental Problem in Prince of Songkla University , Pattani Campus	For Staff only
( )1.Particulate matter from building construction	[1]
( )2.Noise from building construction	[2]
( )3.Air pollution from industrial area in Pattani province	[3]
( )4.Rubbish collection	[4]
( )5.Rubbish classification	[5]
( )6.Waste water from consumption	[6]
( )7.Water quality for consumption	[7]
( )8.Waste water in canals	[8]
( )9.Cleanliness of toilet and sanitary wares	[9]
( )10.Cleanliness in the canteen	[10]
( )11.Cleanliness in the building	[11]
( )12.Cleanliness in the dormitories	[12]

.....

Section 3 Knowledge on Environmental Conservation

Instructions Please mark / on the space that you think it is the only one correct answer

1. What is the meaning of resource and environmental conservation?

( ) Using resource economically

( ) Using resource effectively

( ) Using resource as less as possible

( ) Using resource only in the country

2.Which it a national benefit of energy conservation?

( ) The government would have higher financial position

( ) The lower production cost could cause advantages in exporting products

( ) Reducing air pollution and conserving environment

( ) All choice are correct

3.In your opinion, can you remedy the environmental Problem? Why?

( ) No, because it is so tremendous and complicated that only one person can not do.

( ) Yes, because everyone can cause the environmental problems

( ) No, because no power controls people's behavior

( ) Yes, because we are surrounded by environment and we ourselves can do

4.Which one is the most important cause that brings about environmental problem?

( ) Science and technology development

( ) Increasing population

( ) Human selfishness

( ) Natural change

5.Ground water pumping in a large quantity can cause……..

( ) Lower quality of ground water ( ) Epidemic

( ) Land slip ( ) lower quantity of ground water

6.Which one is matched with the statement " Natural resource and environment are very important for human life"?

( ) Natural resource is the fundamental of politics, economy, and society.

( ) Natural resource is useful.

( ) Natural resource is a country's important factor.

( ) Natural resource is the basic of necessities of life.

7.Where dose garbage in Amphur Munag area, Pattani Province come from the most?

( ) Dwellings ( ) offices and entertainment complexes

( ) Factories ( ) Markets and grocery stores

8.How should waste water from factories be modified before let into rivers?

( ) Increasing higher temperature ( ) Adding more acidity

( ) Adding chroline for sterilisation ( ) Reducing organic substance in water

9.Which one is qualified for waste water treatment?

( ) Duckweed ( ) Water mimosa

( ) Java weed ( ) Hydrilla

10.Which of the following use heat energy the most?

( ) Electric fans ( ) Televisions

( ) Fluorescent ( ) Electric rice cookers

11.Which of the following use heat energy the most?

( ) Embankment construction could cause under-ground water shortage.

( ) More population as well as deforestation on water shade area.

( ) The lavish water consumption in dry season.

( ) Too long period for the coming rain.

12.Saving electricity not only saves energy but also.....

( ) makes electrical appliances have more efficiency

( ) makes electrical appliances have longer life

( ) saves maintenance cost of electrical appliances

( ) All choices are correct.

13.What dose the statement " Plastic waste will occupy the entire world" mean?

( ) Plastic waste is convenient to use so it is very popular.

( ) Plastic waste can be easy to reproduce.

( ) The used plastic can not decompose.

( ) Plastic is economical.

14. What kind of waste is the least dangerous for environment?

( ) Plastic bottles

( ) Putrid remains

( ) Infections waste from hospitals

( ) Contaminated waste from factories

15. What happened when human being altered natural environment excessively?

( ) The decline of natural beauty.

( ) The loss of natural balance.

( ) Vanishing world energy

( ) Economy circumstance had been affected negatively

16. Which may that human being can acquire the residue toxic of insecticide the most?

( ) Absorbing through skin.

( ) Evaporating into the air and being inhaled

( ) Adhering to clothes

( ) Ecological magnification.

17. Which one is the best way for water saving?

( ) Ladda uses small amount of water to clean vegetables

( ) Suchart uses hose for cleansing his car as well as watering plants.

( ) Somjet pours enough amount of drinking water for himself.

( ) Kowit takes a bath once a day.

18. What does electricity come from?

( ) The spinning of machinery

( ) Embankment construction

( ) The movement of electric chart

( ) The friction between two kinds of metal

19. Which of the following is the best way to conserve energy for air conditioners?

( ) Adjusting regular temperature.

( ) Curtaining to prevent heat from outside

( ) Cleaning air filter once a year.

( ) Turning air conditioner off when you get the right temperature.

20. Which one is the best way to save electricity?

( ) Ironing a large amount of clothes at a time.

( ) Using electric light bulb instead of fluorescent

( ) Installing automatic switch in electrical appliance.

( ) Adjusting the very low level of temperature in fridge.

.....

Section 4 Environmental Conservation Behavior

Instructions Please consider the following behavior of electricity conservation, fuel energy conservation, water conservation, and cleanliness. Then put a check mark / in the space that you take actions.

The undergraduate students' behavior	Frequency of participation			For staff only
	Always	Some times	Never	
Electricity 1.while ironing the clothes, you adjust the level of heat properly to fabric.				[1]
2.You turn on television or radio when you work alone.				[2]
3.You use the light bulbs which save energy.				[3]
4.You do not turn off the light since you think other people do.				[4]
5.You plug in electrical appliances all the time for convenience.				[5]
6.You turn on electric fan all the time for ventilation.				[6]
7. You survey electric cost every month to reduce electrical consumption.				[7]
8.You check all electrical equipments and fix the damaged parts.				[8]
9.You buy electrical appliances with electricity saving label.				[9]
Fuel Energy 10.You drive at the speed, not exceed 80km. Per hour.				[10]
11.After using coal or firewood for cocking, you let it born out.				[11]

The undergraduate students' behavior	Frequency of participation			For staff only
	Always	Some times	Never	
12.It is not necessary to turn off a gas valve after use since you already turn off the switch.				] [12]
13.When it is time to service your car, you do.				[13]
14.You stop the car engine when you park.				[14]
15.You pump up the back type more solid than the front when you carry heavy things.				[15]
Water Conservation 16.You use the flush in the bathroom for more comfort.				[16]
17.You use washing machine to wash small pieces of clothes.				[17]
18.You turn off the tap completely after use.				[18]
19.You reuse the household water i.e. water plants.				[19]
20.You take a shower.				[20]
21.You pour drinking water enough for each time.				[21]
22.When you see a broken pipe, you fix it or call in a plumber.				[22]
23.You wipe out the remains into the garbage before doing the dish.				[23]
24.You wash a large amount of clothes at a time.				[24]
25.You do the dishes by using water directly from the tap and do not use enameled bowls.				[25]
26.You do not turn on the tap while brushing your teeth/ getting washed/ shampooing/ shaving/ washing clothes.				[26]

The undergraduate students' behavior	Frequency of participation			For Staff only
	always	Some times	never	
27.You wash your car on the lawn for watering at the same time.				[27]
28.You use a hose with a jet of water for car wash.				[28]
29.You collect water in enameled bowls for washing vegetables, meat, fish, instead of using water directly from a tap.				[29]
Cleanliness 30.You take off your shoes before getting in your residence to keep tidy and clean.				[30]
31.You clean a bathroom and toilet by yourself.				[31]
32.You draw picture on toilet wall or desks.				[32]
33.You drop a bottle of water, a bag, a plastic cup, and rubbish on an alley when there is not rubbish bin.				[33]
34.Cleanliness in classrooms.				[34]
35.When finishing your meal at the canteen, you take dished to put in the provided containers.				[35]
36.You ignore when you see your friend dropping rubbish on prohibited place.				[36]
37.you are willing to cooperate in cleaning public places.				[37]
38.You put remains or rubbish in a desk, classroom, or residence.				[38]
39.When you see rubbish along an alley, you pick it up and drop it in the bin.				[39]
40.You classify rubbish before dropping it in the bin.				[40]

แบบสอบถามเพื่อประกอบการทำวิทยานิพนธ์
เรื่อง
พฤติกรรมการอนุรักษ์สิ่งแวดล้อมของนักศึกษาระดับปริญญาตรี
มหาวิทยาลัยสงขลานครินทร์ วิทยาเขตปัตตานี

<u>คำชี้แจง</u>

แบบสอบถามนี้เป็นเครื่องมือการทำวิทยานิพนธ์ เรื่องพฤติกรรมการอนุรักษ์สิ่งแวดล้อมของนักศึกษาระดับปริญญาตรี มหาวิทยาลัยสงขลานครินทร์ วิทยาเขตปัตตานี จึงใคร่ขอให้นักศึกษาอ่านคำชี้แจงให้เข้าใจ และตอบแบบสอบถามตามความเป็นจริง ตามความรู้สึกนึกคิดของตนเองอย่างอิสระ ซึ่งแบบสอบถามนี้ไม่มีผลต่อคะแนนสอบของนักศึกษาแต่อย่างใด และคำตอบของท่านจะถือเป็นความลับ จะใช้เฉพาะการทำวิทยานิพนธ์นี้เท่านั้น

แบบสอบถามมี 4 ตอน ได้แก่

ตอนที่ 1 แบบสอบถามข้อมูลส่วนตัวของนักศึกษา

ตอนที่ 2 แบบสอบถามการรับรู้ปัญหาสิ่งแวดล้อม

ตอนที่ 3 แบบสอบถามความรู้เกี่ยวกับการอนุรักษ์สิ่งแวดล้อม

ตอนที่ 4 แบบสอบถามพฤติกรรมเกี่ยวกับการอนุรักษ์สิ่งแวดล้อม

ผู้วิจัยขอขอบคุณนักศึกษาทุกท่านที่ให้ความร่วมมือในการตอบแบบสอบถามมา ณ โอกาสนี้ด้วย

(นายนพนนท์ ขจรศักดิ์นุกุล)

นักศึกษาปริญญาโท สาขาสิ่งแวดล้อมศึกษา มหาวิทยาลัยมหิดล

ตอนที่ 1 แบบสอบถามข้อมูลส่วนตัวของนักศึกษา ☐☐☐ 1 2 3

คำชี้แจง โปรดทำเครื่องหมาย / ลงใน ☐ เพียงหนึ่งคำตอบ และ /หรือเติมข้อความลงในช่องว่างตามความเป็นจริง

1.เพศ ☐ 4

☐ 1. ชาย ☐ 2. หญิง

2..คณะที่ท่านกำลังศึกษาอยู่ ☐ 5

☐ 1. คณะมนุษยศาสตร์และสังคมศาสตร์

☐ 2. คณะศึกษาศาสตร์

☐ 3. คณะวิทยาศาสตร์และเทคโนโลยี

☐ 4. วิทยาลัยอิสลามศึกษา

3.ท่านได้คะแนนเฉลี่ยสะสมถึงภาคเรียนที่ผ่านมาในระดับใด ☐ 6

☐ 1. 1.00-1.49 ☐ 2. 1.50-1.99

☐ 3. 2.00-2.49 ☐ 4. 2.50-2.99

☐ 5. 3.00-3.49 ☐ 6. 3.50-4.00

☐☐☐☐☐ 7 8 9 10 11

4.ท่านได้รับข้อมูลข่าวสารความรู้เกี่ยวกับการอนุรักษ์สิ่งแวดล้อมจากแหล่งใดบ้าง ☐☐ 12 13

(สามารถตอบได้มากกว่า 1 คำตอบ) ☐ 14

☐ 1.โทรทัศน์ ☐ 2.วิทยุ ☐ 3.หนังสือพิมพ์

☐ 4.วารสาร นิตยสาร ☐ 5.สื่อเฉพาะกิจ เช่น แผ่นพับ ป้ายนิทรรศการ เอกสารวิชาการ ฯลฯ

☐ 6.ตำราเรียน ☐ 7.บุคคลอื่นๆ เช่น นักวิชาการ ญาติพี่น้อง เพื่อน ฯลฯ

☐ 8.เจ้าหน้าองค์กรที่เกี่ยวข้องกับสิ่งแวดล้อม

5.ท่านได้รับข้อมูลข่าวสารความรู้เกี่ยวกับการอนุรักษ์สิ่งแวดล้อมจากแหล่งมากที่สุด 15
(เพียง 1 คำตอบ)

☐ 1.โทรทัศน์ ☐ 2.วิทยุ ☐ 3.หนังสือพิมพ์
☐ 4.วารสาร นิตยสาร ☐ 5.สื่อเฉพาะกิจ เช่น แผ่นพับ ป้ายนิทรรศการ เอกสารวิชาการ ฯลฯ
☐ 6.ตำราเรียน ☐ 7.บุคคลอื่นๆ เช่น นักวิชาการ ญาติพี่น้อง เพื่อน ฯลฯ
☐ 8.เจ้าหน้าองค์กรที่เกี่ยวข้องกับสิ่งแวดล้อม

6.โปรดทำเครื่องหมาย / ลงใน ☐ หน้ากิจกรรมเกี่ยวกับสิ่งแวดล้อมและการอนุรักษ์สิ่งแวดล้อมของมหาวิทยาลัยที่ท่านเคยเข้าร่วมกิจกรรม (สามารถตอบได้มากกว่า 1 คำตอบ)

ชื่อกิจกรรม	สำหรับเจ้าหน้าที่
☐ 1.สิ่งแวดล้อมสัญจรสู่โรงเรียน (เป็นส่วนหนึ่งของวิชาสังคมศาสตร์สิ่งแวดล้อม)	[1]
☐ 2.เยาวชนสานสัมพันธ์สิ่งแวดล้อม	[2]
☐ 3.วันสิ่งแวดล้อมไทย	[3]
☐ 4.ปลูกป่า ปลูกใจอนุรักษ์	[5]
☐ 5.อบรมผู้นำเยาวชนไทยใส่ใจสิ่งแวดล้อม	[6]
☐ 6.ชมนิเวศน์ป่าไทย	[10]
☐ 7.คุณธรรมรักษ์สิ่งแวดล้อม	[11]
☐ 8.สัมมนาชมรมอนุรักษ์	[12]

7.ท่านเคยเข้าร่วมกิจกรรมเกี่ยวกับสิ่งแวดล้อมและการอนุรักษ์สิ่งแวดล้อมของหน่วยงานอื่น หรือไม่ 16

☐ 1. เคย จำนวน..... ครั้ง ☐ 2. ไม่เคย

.....

ตอนที่ 2 แบบสอบถามการรับรู้ปัญหาสิ่งแวดล้อม

คำชี้แจง โปรดพิจารณาปัญหาสิ่งแวดล้อมที่เกิดขึ้นภายในมหาวิทยาลัยสงขลานครินทร์ วิทยาเขตปัตตานีตามที่กำหนดให้ แล้วทำเครื่องหมาย / ลงใน ☐ หน้าปัญหาสิ่งแวดล้อมที่ส่งผลกระทบต่อตัวท่าน (สามารถตอบได้มากกว่า 1 คำตอบ)

ปัญหาสิ่งแวดล้อมภายใน มหาวิทยาลัยสงขลานครินทร์ วิทยาเขตปัตตานี	สำหรับเจ้าหน้าที่
☐ 1.ฝุ่นละอองจากการก่อสร้างอาคาร	[1]
☐ 2.เสียงเครื่องจักรในการก่อสร้างอาคาร	[2]
☐ 3.มลพิษทางอากาศจากเขตอุตสาหรรม จังหวัดปัตตานี	[3]
☐ 4.การเก็บขนขยะมูลฝอย	[4]
☐ 5.การคัดแยกประเภทขยะมูลฝอย	[5]
☐ 6.น้ำเสียจากการอุปโภค บริโภค	[6]
☐ 7.คุณภาพน้ำเพื่อการอุปโภค บริโภค	[7]
☐ 8.น้ำเน่าเสียบริเวณ คู คลอง	[8]
☐ 9.ความสะอาดของห้องน้ำ และสุขภัณฑ์สาธารณะ	[9]
☐ 10.ความสะอาดบริเวณโรงอาหาร	[10]
☐ 11.ความสะอาดบริเวณอาคารเรียน	[11]
☐ 12.ความสะอาดบริเวณหอพัก	[12]

ตอนที่ 3 แบบวัดความรู้เกี่ยวกับสิ่งแวดล้อมและการอนุรักษ์สิ่งแวดล้อม

คำชี้แจง โปรดเขียนเครื่องหมาย / ลงใน ( )หน้าข้อความที่ท่านเห็นว่าถูกต้องที่สุด เพียงคำตอบเดียว

1.การอนุรักษ์ทรัพยากรและสิ่งแวดล้อมหมายถึงข้อใด 1

( ) การรู้จักใช้ทรัพยากรอย่างประหยัด

( ) การรู้จักใช้ทรัพยากรอย่างมีประสิทธิภาพ

( ) การรู้จักใช้ทรัพยากรให้น้อยที่สุด

( ) การรู้จักใช้ทรัพยากรเฉพาะที่มีอยู่ในประเทศ

2.ผลดีของการอนุรักษ์พลังงานที่มีต่อประเทศชาติคือข้อใด 2

( ) ฐานะการเงินของรัฐดีขึ้น มีเงินเหลือมากขึ้นในการพัฒนาประเทศ

( ) ต้นทุนการผลิตสินค้าลดลง เป็นผลให้เกิดการได้เปรียบในการส่งสินค้าออก

( ) มีส่วนช่วยลดมลพิษทางอากาศ และอนุรักษ์สิ่งแวดล้อม

( ) ถูกทุกข้อ

3.ท่านคิดว่า ท่านจะช่วยแก้ไขปัญหาสิ่งแวดล้อมได้หรือไม่และอย่างไร 3

( ) ไม่ได้ เพราะปัญหาสิ่งแวดล้อมเป็นปัญหาใหญ่และซับซ้อนเกินกว่าคนเดียวจะช่วยได้

( ) ได้ เพราะการกระทำของทุกคนมีส่วนก่อให้ปัญหาสิ่งแวดล้อมได้ทั้งนั้น

( ) ไม่ได้ เพราะไม่มีอำนาจจะควบคุมหรือบังคับให้ผู้อื่นปฏิบัติตามได้

( ) ได้ เพราะสิ่งแวดล้อมนั้น อยู่รอบตัวเรา จึงสามารถแก้ไขได้ด้วยตัวเราเอง

4.ข้อใดเป็นสาเหตุสำคัญที่สุด ที่ก่อให้เกิดปัญหาสิ่งแวดล้อม 4

( ) ความเจริญก้าวหน้าทางวิทยาศาสตร์และเทคโนโลยี

( ) การเพิ่มขึ้นของจำนวนประชากร

( ) ความเห็นแก่ตัวของมนุษย์

( ) การเปลี่ยนแปลงทางธรรมชาติ

5.การสูบน้ำบาดาลมาใช้มากๆนั้น จะทำให้เกิดปัญหาอะไรติดตามมา 5

( ) คุณภาพน้ำต่ำลง ( ) โรคระบาดที่มาพร้อมกับน้ำ

( ) แผ่นดินทรุด ( ) ปริมาณน้ำลดลง

6.ที่กล่าวว่า"ทรัพยากรธรรมชาติและสิ่งแวดล้อมมีความสำคัญต่อการดำเนินชีวิตของมนุษย์" ตรงกับ เหตุผลใด 6

( ) ทรัพยากรธรรมชาติเป็นรากฐานทางการเมือง เศรษฐกิจ และสังคม

( ) ทรัพยากรธรรมชาติสามารถเอื้อประโยชน์

( ) ทรัพยากรธรรมชาติเป็นยุทธปัจจัยของประเทศ

( ) ทรัพยากรธรรมชาติเป็นพื้นฐานของปัจจัยสี่ที่สำคัญของมนุษย์

7.ขยะในเขตอำเภอเมืองจังหวัดปัตตานีมาจากแหล่งใดมากที่สุด 7

( ) บ้านเรือน ( ) ที่ทำงานและสถานบริการ

( ) โรงงานอุตสาหกรรม ( ) ตลาดและร้านค้า

8.น้ำเสียจากโรงงานอุตสาหกรรม ควรได้รับการปรับปรุงอย่างไร ก่อนที่จะระบายลงสู่แม่น้ำ ลำคลอง 8

( ) เพิ่มอุณหภูมิให้สูงขึ้น ( ) ทำให้มีความเป็นกรดสูงขึ้น

( ) เติมคลอรีนเพื่อฆ่าเชื้อ ( ) ลดปริมาณสารอินทรีย์ในน้ำให้น้อยลง

9.พืชน้ำที่มีคุณสมบัติเหมาะสมในการบำบัดน้ำเสียได้ คืออะไร 9

( ) แหน ( ) ผักกระเฉด

( ) ผักตบชวา ( ) สาหร่ายหางกระรอก

10.เครื่องใช้ไฟฟ้าชนิดใดใช้พลังงานความร้อนมากที่สุด 10

( ) พัดลม ( ) โทรทัศน์

( ) หลอดนีออน ( ) หม้อหุงข้าวไฟฟ้า

11.ข้อใดจัดได้ว่าเป็นต้นเหตุของการขาดแคลนขาดน้ำอย่างแท้จริง 11

( ) การสร้างเขื่อนกั้นน้ำ ทำให้พื้นที่ใต้เขื่อนขาดน้ำ

( ) ประชากรเพิ่มมากขึ้น พร้อมทั้งมีการตัดไม้ทำลายป่าในบริเวณต้นน้ำ

( ) การใช้น้ำอย่างฟุ่มเฟือย ทำให้ฤดูแล้งขาดน้ำ

( ) ฝนตกทิ้งช่วงนานเกินไป

12.การประหยัดกระแสไฟฟ้านอกจากช่วยประหยัดพลังงานแล้ว ยังจะช่วยให้..... 12

( ) เครื่องใช้ไฟฟ้าและอุปกรณ์มีประสิทธิภาพมากขึ้น

( ) เครื่องใช้ไฟฟ้าและอุปกรณ์มีอายุการใช้งานเพิ่มขึ้น

( ) ประหยัดค่าซ่อมแซมของอุปกรณ์และเครื่องใช้ไฟฟ้า

( ) ถูกทุกข้อ

13.คำกล่าวที่ว่า "พลาสติกกำลังจะครองโลก" หมายความว่าอย่างไร 13

( ) พลาสติกสะดวกในการใช้ จึงเป็นที่นิยม

( ) พลาสติกสามารถผลิตขึ้นใหม่ได้ง่าย

( ) พลาสติกเมื่อใช้แล้วไม่สลายตัว

( ) พลาสติกช่วยให้ประหยัด

14.ขยะชนิดใดที่มีอันตรายต่อสภาวะแวดล้อมน้อยที่สุด 14

( ) ขวดน้ำพลาสติก

( ) เศษอาหารบูดเน่า

( ) ขยะติดเชื้อจากโรงพยาบาล

( ) ขยะที่มีสารพิษเจือปนจากโรงงานอุตสาหกรรม

15.มนุษย์ได้ดัดแปลงสภาพแวดล้อมทางธรรมชาติจนเกินขอบเขต ทำให้เกิดผลอะไรขึ้น 15

( ) ความงามตามธรรมชาติเสื่อมโทรมลง

( ) สภาวะสมดุลย์ทางธรรมชาติต้องสูญเสียไป

( ) พลังงานที่มีอยู่ในโลกสูญหายไป

( ) สภาวะทางเศรษฐกิจถูกกระทบในทางลบ

16.มนุษย์ได้รับอันตรายจากพิษของยาฆ่าแมลงที่ตกค้างในลักษณะใดมากที่สุด 16

( ) ซึมเข้าทางผิวหนัง ( ) ระเหยจากน้ำไปสู่อากาศ และถูกสูดเข้าปอด

( ) ติดตามเสื้อผ้าที่ซักทางน้ำ ( ) ถ่ายทอดทางห่วงโซ่อาหาร

17.ข้อใดจัดได้ว่าเป็นการประหยัดน้ำที่ถูกวิธีที่สุด 17

( ) ลัดดาใช้น้ำปริมาณน้อยๆ ในการแช่ผักเพื่อล้างสารพิษตกค้าง

( ) สุชาติใช้สายยางฉีดน้ำในการล้างรถและรดน้ำต้นไม้ไปพร้อมๆกัน

( ) สมเจตน์รินน้ำดื่มในปริมาณที่สามารถดื่มได้หมดในแต่ละครั้ง

( ) โกวิทอาบน้ำวันละ 1 ครั้ง

18.กระแสไฟฟ้าเกิดจากอะไร 18

( ) การหมุนของเครื่องจักร ( ) การสร้างเขื่อนเก็บน้ำ

( ) การเคลื่อนที่ของประจุไฟฟ้า ( ) การเสียดสีของโลหะ 2 ชนิด

19.ข้อใดต่อไปนี้เป็นการช่วยเครื่องปรับอากาศประหยัดพลังงานที่ถูกต้อง 19

( ) ปรับอุณหภูมิให้เย็นคงที่อยู่เสมอ

( ) ติดม่านหน้าต่างเพื่อป้องกันความร้อนจากภายนอก

( ) ทำความสะอาดแผ่นกรองอากาศปีละ 1 ครั้ง

( ) ปิดเครื่องปรับอากาศทันทีเมื่อได้อุณหภูมิที่ต้องการ

20.การกระทำใดเป็นการประหยัดพลังงานไฟฟ้า 20

( ) รีดผ้าคราวละมากๆ

( ) ใช้หลอดไส้แทนหลอดฟลูออเรสเซนต์

( ) ติดตั้งสวิทซ์อัตโนมัติกับเครื่องใช้ไฟฟ้า

( ) ปรับระดับความเย็นของตู้เย็นให้เย็นจัดคงที่อยู่เสมอ

.....

พฤติกรรมของนักศึกษา	การปฏิบัติของท่าน			สำหรับเจ้าหน้าที่
	ทุกครั้ง	บางครั้ง	ไม่เคย	
20.อาบน้ำโดยใช้ฝักบัว				[20]
21.รินน้ำดื่มในปริมาณที่เพียงพอแก่ความต้องการในแต่ละครั้ง				[21]
22.เมื่อพบเห็นท่อประปาแตกรั่ว ท่านเข้าไปแก้ไขหรือแจ้งให้ผู้รับผิดชอบทราบ				[22]
23.กวาดเศษอาหารทิ้งลงถังขยะก่อนล้างจาน				[23]
24.ซักเสื้อผ้าครั้งละมากๆ				[24]
25.ล้างจานโดยตรงจากก๊อก โดยไม่นิยมใช้กะละมังรองรับน้ำ				[25]
26.ขณะแปรงฟัน/ถูสบู่/สระผม/โกนหนวด/ซักผ้า ไม่เปิดน้ำทิ้งไว้				[26]
27.ล้างรถบนสนามหญ้าเพื่อเป็นการรดน้ำต้นไม้ในเวลาเดียวกัน				[27]
28.ใช้สายยางฉีดน้ำแรงสูงในการล้างรถอย่างสะอาดเอี่ยม				[28]
29.รองน้ำใส่กะละมังล้างผัก/เนื้อ/ปลา แทนการล้างจากก๊อก				[29]
การรักษาความสะอาด 30.ถอดรองท้าก่อนเข้าที่พักเพื่อความเป็นระเบียบและสะอาด				[30]
31.ทำความสะอาดห้องน้ำและห้องส้วม				[31]
32.ขีดเขียนตามผนังห้องน้ำหรือโต๊ะเรียน				[32]
33.วางขวดน้ำ ถุง แก้วพลาสติกและเศษขยะแอบไว้ริมทางเดินเมื่อไม่มีถังขยะ				[33]
34.รักษาความสะอาดภายในห้องเรียน				[34]
35.เมื่อรับประทานอาหารที่โรงอาหารเสร็จแล้ว นำถ้วยชามไปไว้ในภาชนะที่จัดไว้ให้				[35]
36.วางเฉยเมื่อเห็นเพื่อนทิ้งขยะในสถานที่ต้องห้าม				[36]
37.ร่วมมือทำความสะอาดในที่สาธารณะด้วยความเต็มใจ				[37]
38.วางสิ่งของเหลือใช้ เศษขยะ ไว้ในโต๊ะเรียน ห้องเรียน หรือบริเวณที่พักอาศัย				[38]
39.นำเศษขยะตามทางเดินที่พบเห็นไปทิ้งในถังรองรับ				[39]
40.แยกขยะตามประเภทก่อนนำไปทิ้ง				[40]

ตอนที่ 4 แบบวัดพฤติกรรมที่เกี่ยวกับการอนุรักษ์สิ่งแวดล้อม

คำชี้แจง โปรดพิจารณาพฤติกรรมการอนุรักษ์พลังงานไฟฟ้า พลังงานเชื้อเพลิง พลังงานน้ำ และการรักษาความสะอาดต่อไปนี้ แล้วเขียนเครื่องหมาย / ลงในช่องว่างที่ท่านได้ปฏิบัติจริง

พฤติกรรมของนักศึกษา	การปฏิบัติของท่าน			สำหรับเจ้าหน้าที่
	ทุกครั้ง	บางครั้ง	ไม่เคย	
พลังงานไฟฟ้า 1.ขณะรีดผ้าจะปรับความร้อนตามชนิดของเนื้อผ้า				[1]
2.เปิดโทรทัศน์หรือวิทยุไว้เป็นเพื่อนเวลาทำงานหรืออยู่คนเดียว				[2]
3.ใช้หลอดไฟที่ช่วยประหยัดพลังงาน				[3]
4.ไม่ปิดไฟฟ้าเพราะคิดว่าจะมีคนอื่นมาปิด				[4]
5.เสียบปลั๊กเครื่องใช้ไฟฟ้าไว้ตลอดเวลา เพื่อความสะดวกในการใช้งาน				[5]
6.เปิดพัดลมทิ้งไว้เมื่อไม่อยู่ เพื่อระบายอากาศ				[6]
7.สำรวจแนวโน้มค่าไฟฟ้าแต่ละเดือนเพื่อปรับลดการใช้ไฟฟ้า				[7]
8.ตรวจเช็คอุปกรณ์ไฟฟ้าและซ่อมส่วนที่ชำรุด				[8]
9.เลือกซื้อเครื่องใช้ไฟฟ้าที่มีฉลากประหยัดไฟ				[9]
พลังงานเชื้อเพลิง 10.ขับรถด้วยความเร็วไม่เกิน 80 กม. / ชม.				[10]
11.ถ้าใช้ถ่านหรือฟืนเพื่อปรุงอาหารเรียบร้อยแล้ว จะปล่อยให้มอดไปเอง				[11]
12.ไม่จำเป็นต้องปิดวาว์ลแก๊สหลังใช้งานเพราะปิดสวิทซ์ที่เตาแล้ว				[12]
13.ตรวจสอบสภาพการทำงานของเครื่องยนต์ตามกำหนด				[13]
14.ดับเครื่องยนต์เมื่อต้องการจอดรถ				[14]
15.เติมลมยางด้านหลังของรถให้แข็งกว่าด้านหน้า เมื่อต้องการบรรทุกของหนักบนรถ				[15]
การอนุรักษ์น้ำ 16.ใช้โถส้วมแบบมีชักโครกเพราะความสะดวกสบายกว่า				[16]
17.ซักผ้าผืนเล็กๆเช่นผ้าเช็ดหน้าด้วยเครื่องซักผ้า				[17]
18.ปิดก๊อกน้ำให้สนิทหลังจากใช้งานแล้ว				[18]
19.นำน้ำที่ใช้แล้วไปทำประโยชน์อย่างอื่นต่อ เช่น รดน้ำต้นไม้				[19]

BIOGRAPHY

NAME	Mr.Nopphanon Kachornsaknukul
DATE OF BIRTH	20th July 1977
PLACE OF BIRTH	Bangkok, Thailand
INSITUTIONS ATTENDED	Bachelor of Art (Social Development), Prince of Songkla University (1995-1998)
	Master of Education (Environmental Education), Mahidol University (1999-2001)