



**ENVIRONMENTAL EDUCATION MANAGEMENT
OF PRIVATE VOCATIONAL SCHOOLS
IN NAKHONPATHOM PROVINCE**

PUNYAWEE ARAME

อธิษฏ์นัทนาการ

จาก

บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล

**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 974-04-2069-9

COPYRIGHT OF MAHIDOL UNIVERSITY

Thesis
Entitled

**ENVIRONMENTAL EDUCATION MANAGEMENT
OF PRIVATE VOCATIONAL SCHOOLS
IN NAKHONPATHOM PROVINCE**

Punyawee Arame
.....
Miss Punyawee Arame
Candidate

T. Chaijirachayakul
.....
Assoc.Prof.Thawatchai Chaijirachayakul, Ph.D.
Major-Advisor

Sirichai Chinatangkul
.....
Assoc.Prof.Sirichai Chinatangkul, Ph.D.
Co-Advisor

Subphachai Sukarawan
.....
Asst.Prof.Subphachai Sukarawan, M.S.
Co-Advisor

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

Wasin Plumcharoen
.....
Asst.Prof.Wasin Plumcharoen, M.Ed.
Chair
Master of Education Programme in
Environmental Education
Faculty of Social Sciences and Humanities

Thesis
entitled

**ENVIRONMENTAL EDUCATION MANAGEMENT
OF PRIVATE VOCATIONAL SCHOOLS
IN NAKHONPATHOM PROVINCE**

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

on
June 3, 2002

Punyawee Arame
.....

**Miss Punyawee Arame
Candidate**

T. Chaijirachayakul
.....

**Assoc.Prof.Thawatchai Chaijirachayakul, Ph.D.
Chair**

Sirichai Chinatangkul
.....

**Assoc.Prof.Sirichai Chinatangkul, Ph.D.
Member**

Subphachai Sukarawan
.....

**Asst.Prof.Subphachai Sukarawan, M.S.
Member**

T. Boonchote
.....

**Assoc.Prof.Thawatchai Boonchote, Ph.D.
Member**

Liangchai Limlomwongse
.....

**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

There are not enough words to express my gratitude to the numerous people who have assisted in the thesis. First of all, I would like to express my highest respect and special thanks to my family for their love, help, understanding, patience and encouraging me to break through any impediment and reach the final aims.

Also, I would like to particularly express my sincere thanks to my major advisor and co-advisor for their valuable guidance and support. Without their help, this dissertation would never have become reality.

Again, I am sincerely thankful to all teachers of private vocational schools who well cooperated in collecting data.

Ultimately, I wish to thank all my friends for their suggestion, help and support my mind in any cases.

Punyawee Arame

4137408 SHED/M : MAJOR : ENVIRONMENTAL EDUCATION ;
M.Ed. (ENVIRONMENTAL EDUCATION)
KEY WORDS : ENVIRONMENTAL EDUCATION MANAGEMENT
PUNYAWEE ARAME: ENVIRONMENTAL EDUCATION MANAGEMENT
OF PRIVATE VOCATIONAL SCHOOLS IN NAKHONPATHOM PROVINCE.
THESIS ADVISOR : THAWATCHAI CHAJIRACHAYAKUL, Ph.D., SIRICHA
CHINATANGKUL, Ph.D., SUBPHACHAI SUKARAWAN, M.S. (Applied Statistics)
126 p. ISBN 974-04-2069-9

The objective of this study is to investigate the state and problems of environmental education management in private vocational schools in Nakhonpathom Province in the areas of their philosophy and school goals, curriculum and learning process, personnel, teaching and learning resources, management systems, students' activities, and students' achievement. One-hundred and four administrators and teachers were purposefully selected for the study. A questionnaire, observation tool, and documentary analysis form were used for data collection. Statistics in terms of percentage, mode, and frequency were employed for data analysis.

The research findings were as follows:

1. The philosophy and school goals about the environment were generally at a moderate level. The problems were lack of real information for planning
2. The curriculum and learning process were at the moderate level and some items were at a high level such as encouraging students to participate in environmental projects.
3. Environmental personnel were mostly at a moderate level .The problem was lack of a head teacher participating in environmental projects.
4. Teaching and learning resources were mostly successful, but some activities were considered at a low level in continuously developing the environmental project.
5. Management systems were mostly at a moderate level. The problems were lack of information for planning.
6. Students' activities were mostly successful. Some problems were lack of establishment of an environmental group or club, activities were not continuously conducted, and the aim of some activities was not clear.
7. Students' achievement was mostly successful. The problems were lack of making the students' performance known to people in the general community.

Environmental education management must be based on participation of administrators, teachers, students, and others in terms of thinking and acting together. This will lead to the attainment of school objectives and goals.

4137408 SHED/M : สาขาวิชา : สิ่งแวดล้อมศึกษา ; ศษ.ม. (สิ่งแวดล้อมศึกษา)

ปริญญาวีร อาราม : การจัดการสิ่งแวดล้อมศึกษาในโรงเรียนอาชีวศึกษาเอกชน จังหวัดนครปฐม (ENVIRONMENTAL EDUCATION MANAGEMENT OF PRIVATE VOCATIONAL SCHOOLS IN NAKHONPATHOM PROVINCE) คณะกรรมการควบคุมวิทยานิพนธ์ : ธีรชัย ชัยจิรชยากุล, Ph.D., ศิริชัย ชินะตั้งกูร, Ph.D., ศุภชัย ศุภวรรณ, พบ.ม. (สถิตินิพนธ์) 126 หน้า ISBN 974-04-2069-9

การวิจัยครั้งนี้ มีวัตถุประสงค์เพื่อศึกษาสภาพและปัญหาการดำเนินงานสิ่งแวดล้อมศึกษาในโรงเรียน โดยใช้หลักการประกันคุณภาพการศึกษาทั้ง 7 ประการ ของสำนักงานคณะกรรมการการศึกษาเอกชน อันประกอบด้วย ปรัชญาและเป้าหมายของโรงเรียน, หลักสูตรและกระบวนการเรียนการสอน, บุคลากร, ทรัพยากรเพื่อการเรียนการสอน, ระบบการบริหาร, กิจกรรมนักศึกษา และผลสัมฤทธิ์ของผู้เรียน เป็นแนวทางสร้างเครื่องมือที่ใช้ในการวิจัยซึ่งได้แก่ แบบสอบถามสำหรับผู้บริหารและบุคลากรที่เกี่ยวข้อง จำนวน 104 คน แบบสังเกตสภาพแวดล้อม และแบบวิเคราะห์เอกสาร ทำการวิเคราะห์ข้อมูลด้วยสถิติ ร้อยละ และฐานนิยม

ผลการวิจัยพบว่า

1. ปรัชญาและเป้าหมายของโรงเรียนมีการดำเนินการในระดับปานกลาง ปัญหาที่พบได้แก่ การขาดการศึกษาสภาพที่แท้จริงในการกำหนดนโยบาย
 2. หลักสูตรและกระบวนการเรียนการสอนมีสภาพและปัญหาในระดับปานกลางมีบางกิจกรรมที่ทำได้ดี เช่นการส่งเสริมให้นักเรียนมีส่วนร่วมในโครงการสิ่งแวดล้อม
 3. บุคลากรมีการดำเนินการในระดับปานกลาง โดยปัญหาที่พบคือ ขาดครูแกนนำด้านสิ่งแวดล้อม
 4. ทรัพยากรเพื่อการเรียนการสอน ส่วนใหญ่อยู่ในเกณฑ์ดี แต่การพัฒนาโครงการด้านสิ่งแวดล้อมยังมีน้อย
 5. การบริหารจัดการมีการดำเนินการอยู่ในระดับปานกลาง ปัญหาที่พบคือมีการพัฒนาฐานข้อมูลเพื่อใช้วางโครงการด้านสิ่งแวดล้อมน้อย
 6. กิจกรรมนักศึกษาค่อนข้างอยู่ในเกณฑ์ดี ปัญหาที่พบคือ การจัดตั้งองค์กร/ชมรมอนุรักษ์ยังไม่ชัดเจน ทำให้การดำเนินกิจกรรมต่างๆ ไม่ต่อเนื่อง
 7. ผลสัมฤทธิ์ของผู้เรียนค่อนข้างดี แต่เรื่องการเผยแพร่ผลงานของนักศึกษาต่อชุมชนยังมีน้อย
- การจัดการสิ่งแวดล้อมศึกษาในโรงเรียนจำเป็นต้องอาศัยความร่วมมือของทุกๆ ฝ่าย ทั้งผู้บริหาร ครู นักเรียนนักศึกษาและบุคลากรที่เกี่ยวข้องอื่นๆ ในการร่วมคิดและร่วมทำ ซึ่งจะก่อให้เกิดความเหมาะสม มีประโยชน์และสอดคล้องกับวัตถุประสงค์ของกิจกรรมที่เกี่ยวข้องกับสิ่งแวดล้อมต่อไป

LIST OF CONTENTS

	Page
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
LIST OF TABLES	x
CHAPTER	
I INTRODUCTION	
1.1 Background of the study	1
1.2 Objectives	10
1.3 Scope of the study	10
1.4 Definition of terms	11
1.5 Conceptual framework for study	12
1.6 Significance of the study	12
II LITERATURE REVIEW	
2.1 Quality assurance for education	14
2.2 Environmental Education	19
2.2.1 Definition of Environmental Education	20
2.2.2 Philosophy of Environmental Education	21
2.2.3 Principle of Environmental Education	23
2.2.4 Goals of Environmental Education	24
2.2.5 Objectives of Environmental Education	25

LIST OF CONTENTS (CONTINUED)

CHAPTER	Page
II LITERATURE REVIEW	
2.2.6 Components of Environmental Education	27
2.2.7 Roles of Environmental Education	28
2.2.8 School Environmental Education Management	29
2.2.9 Environmental Education Management	30
2.2.10 Teaching approach to Environmental Education	31
2.2.11 Appraisal and Evaluation of Environmental Education	32
2.3 Review of related studies	33
III MATERIALS AND METHODS	
3.1 The study of document, textbooks and research related to this study	44
3.2 Population	45
3.3 The research instruments	45
3.4 The process of construction	46
3.5 Data collection	47
3.6 Data analysis	47
IV RESULTS	
4.1 The result of data analyses as questionnaires	48
4.2 The result of data analyses from observation by the researches	65
4.3 The data analyzes from documentary resources	66

LIST OF CONTENTS (CONTINUED)

CHAPTER	Page
V DISCUSSION	
5.1 The philosophy and school goals about environments	71
5.2 Environmental curriculum and learning process	73
5.3 Environmental personnel	76
5.4 Teaching and learning resources	77
5.5 Management system	78
5.6 Students' activities	80
5.7 Students' achievement	81
VI CONCLUSION	
6.1 Summary	84
6.2 Conclusion	85
6.3 Recommendations derived from the research	87
6.4 Recommendations for future research	88
BIBLIOGRAPHY	90
APPENDIX A	98
APPENDIX B	107
BIOGRAPHY	126

LIST OF TABLES

Tables	Page
1 Number of students enrolments at in high school level in 1996-1997 semester	7
2 Number of students in 1998 semester of private vocational school (Classified by curriculum and levels)	8
3 Number of population, classified by position in each school	45
4 Number of percentage of respondents' general information	49
5 Number, percentage and mode of performance level under the area of philosophy and school goals of environments	50
6 Number, percentage and mode of performance level under the area of environmental curriculum and learning process	51
7 Number, percentage and mode of performance level under the area of environmental personnel	53
8 Number, percentage and mode of performance level under the area of teaching and learning resources	54
9 Number, percentage and mode of performance level under the area of management system	55
10 Number, percentage and mode of performance level under the area of students' activities	56
11 Number, percentage and mode of performance level under the area of students' achievement	57

LIST OF TABLES (CONTINUED)

Tables	Page
12 Number, percentage and mode of problem level related to the area of environmental curriculum and learning process	59
13 Number, percentage and mode of problem level related to the area of environmental personnel	60
14 Number, percentage and mode of problem level related to the area of teaching and learning resources	60
15 Number, percentage and mode of problem level related to the area of management system	61
16 Number, percentage and mode of problem level related to the area of student's activities	62
17 Number, percentage and mode of problem level about students' achievement	63

CHAPTER I

INTRODUCTION

1.1 Background of the study

Many countries worldwide including Thailand are now confronting a severe environmental problem. Gradually and rapidly, the quantity and the quality of natural resources have been dwindling. The severity of the problem seems even more intense as the global population climbs higher and higher. The increase of world's population coupled with the people's ignorance to environment results in strife and conflict deriving from limited natural resources, extravagant use of natural resources and finally natural disasters in several areas. All of these consequences have severe effects on human beings.

When the root of the environmental problem is fully perceived, humans are found to be the most important factor in creating such problem. People are largely unaware of the right ways in consumption of natural resources. They lack a sense of environmental responsibility as well as ethics and disciplinary behavior toward environments. The suggested solutions to those problems regarding human's irresponsibility can be done by implementing stricter legal enforcement, and by employing science and technological advancements. These solutions, however, have their limitations and following unsatisfactory outcomes can be expected.

Environmentalists indicate that to solve the environmental problem requires such measures as legal enforcement, engineering strategies which involve appropriate technology, and education that stimulates people to be aware of environmental importance.

One way to tackle the environmental problem is to create more awareness in promoting and maintaining good quality of the environment by providing education for people, installing desirable attitudes and appropriate practices to environment. As discussed above, human beings originally cause the environment problem, so the problem solution is aimed to probe the deep roots in human behavior in terms of social values and beliefs. Apparently, the real solution is closely associated with the right knowledge, appropriate values and beliefs of the people. All attempts should be made with people of different ages, particularly students' groups who are important audience for environmental education because they are tomorrow's leaders and resource consumers. These youngsters are mature enough to realize the environmental problem, to find ways to nurturing environment and to understand the impacts of the problem. As Dr. Akavit Na Talang (1988:1-2) put it, "Youths are genuine heroes in dealing with environmental issues. Since the environmental problem has to take a long time to be solved, the youth can be viewed as "hope of not only Thai society but also world society" that help protect and nurture environment in the long run."

Any changes in these youths will result in permanent trends and bring benefits to the communities in the future. As also cited by Dr. Arj-amphon Khampanon (1988: 39), education is an important tool for people in accumulating knowledge, planning strategies in developing human resources and determining trends in tackling environment-related problems. To achieve a permanent and effective

result, it is essential to provide youth with right knowledge and information. It is important as well to build up the right attitudes toward their nature and environment.

Environment education for youth is therefore one of several ways that can help reduce the environmental problem. Its main objective is for youth to bring knowledge to make their lives better. The course of environmental education mainly concentrates on process or paths of learning and understanding environment. The youth are required to realize the importance of their surroundings. They must possess knowledge, skills, right attitude and enthusiasm to deal with the arising problems. Waraporn Srisupan (1996 : 75) has stated that environmental education is an important tool to develop and prepare the youth to be good leaders and to contribute in terms of their participation in nature and environment preservation in their own communities and society at large.

Environmental education has been evolving for many years. It got a bit stimulus in 1972, when representatives at the United Nation Conference on the Human Environment in Stockholm, Sweden recommended that the UN establish an international environmental education program. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) followed up on the recommendation by sponsoring a series of environmental education workshops and conferences around the world. In 1975, representatives from member nations met in Belgrade, in the former Yugoslavia. This produced the first intergovernmental statement on environmental education. It listed the aims, objectives, key concepts and guiding principles of the program in a document prepared at the meeting known as "The Belgrade Charter a Global Framework for Environmental Education". Then in 1977, representatives from more than 60 nations gathered in Tbilisi in the former Soviet

Republic of Georgia for a follow-up to Belgrade. The Tbilisi Declaration is a good starting point for thinking about what an ideal environmental education program should include. In 1992, the Earth Summit Conference took place in Rio de Janeiro, Brazil. It was attended by some 120 heads of state and government, together with delegates from over 170 countries. The centerpiece of the Rio agreements is known as Agenda 21, a major action programs setting out what nations should do to achieve sustainable development in the 21st century. One of the key outcomes of the conference for educators is the recommendation that environmental education should be incorporated as an essential part of learning, within both formal and non-formal education sectors.

In Thailand, the Eighth National Education Development plan (NEDP) (1997-2001) was framed to include teaching and learning as well as organizing activities concerning environmental education, which aimed to improve quality of life and make effective use of natural resources. Students of this course are able to see the value of maintaining and restoring the environmental conditions. (The Office of National Education Commission., 1997 : 69) The Ministry of Education, which has direct responsibility for providing environmental education, sees the necessity in creating awareness of environment in students. In the second item, it clearly states that it will support and urgently develop teaching and learning in science, technology and environment appropriate for the global changes and human resources development policy. This will be done in accord with daily life of the people (The Ministry of Education, 1997:19)

For other governmental sectors, the Department of Environmental Quality Promotion assigned Mahidol University to devise a functional plan for environmental education. The plan has been designed to cover a five-year period (1997-2001). It aimed to extensively give information and current news on environment.

According to the National Education plan in 1992, schools are considered as the institutions that are closely associated with students, so they are assigned to mobilize the policy of environmental education.

The Department of Vocational Education has realized such problems and taken action to make students create their own sense of responsibility for their community environment. It has planned the curriculum that promotes awareness of students about environmental problem. It has been widely conceived that the students who graduated will work in many factories. They will be the head workers, and live in their communities. In addition, they have two roles for taking action: destroyer and protector of the environmental problems at the same time. However, in receiving the right knowledge, appropriate attitude and creating awareness in conserving environment, they will be the human resources who can solve environmental problems.

So the Vocational Education Department has included the environmental knowledge in the curriculum in terms of environmental education. Warapan Noisuwan (1994:24) has introduced the guidelines for the Department's environmental education plans and projects as follows:

1. Managed to learning and curriculum in the whole education level and participating in environmental activities.
2. Managed to teach approach in school i.e. teaching sciences, sociology.
3. Managed to developing human resources i.e. seminar, training.
4. Managed to analyzing or researching for development of learning and activities.
5. Managed to establish environmental unit, for promoting and cooperation with all parties.

The goals of in environmental education aimed at:

1. Promoting knowledge and attitude in environment to people in any careers.
2. Developing the vocational human resources and analyzing to find new perspective which may be another alternative solution to the environmental problems.
3. Enhancing awareness in people in works i.e. participation in daily environmental activities.
4. Creating the leaders in environmental activities for family, community and other social organizations.

Many educators consider implementation of environmental education project as a failure. It's failure derives from many factors i.e. most personnel lacking skills and knowledge, the issue in learning process having no clear concept of

environmental education and lack of information, data collection, media and co-operation.

The private vocational school, which is under Private Educational Commission (Ministry of Education) has promoted learning in many streams i.e. commerce administration, industry, agriculture and art. It has prepared learners for various professions especially in industries and businesses, as shown in table 1. It is a comparison of high school enrolment of both state and private sectors in 1996. That is 52.25% of students enrolled in state schools and 44.75% in private schools. And in 1997, that is 61.94% enrolled in state schools and 38.06% in private schools. There is not much difference.

Although Thailand suffered from the economic crisis in the previous years, the number of enrolments in both state and private schools at the secondary level is still increasing. (National Education Commission: 1997: 80 – 100)

TABLE 1: Number of student enrolments at high school level in 1996-1997 Semester.

Education level	Semester	
	1996	1997
High school	1,479,239	1,730,764
1. Grade 10-12 (M.4-6)	814,410	977,826
2. Vocational Education	664,826	752,938
2.1 State	367,293	466,351
2.2 Private	297,533	286,587

In addition, there are data surveys of students in private vocational school in 1998 semester (as cited by table 1), there are about 380,000 students who study in these schools. That makes sure that most parents and students are convinced that the

private school have more roles in education management (Private Education Commission B.E. 2541).

TABLE 2: Number of students in 1998 semester of private vocational school (Classified by curriculum and levels)

Curriculum/level	Number of students
Certificate in vocational	
Level 1	67,462
Level 2	76,551
Level 3	76,213
Total	220,226
Diploma in vocational	
Level 1	82,929
Level 2	78,073
Total	161,002
Total	381,228

Considering from data on number of students, it shows that the private schools very well cooperate in providing education at every level. It is forecasted that vocational learning in private schools is still very popular among students and parents for many years to come.

The transformation of Thai society, the happening of new ideas and practices since the adoption of the 1997 Constitution and 1999 National Education Act for education reform new movements have been formed, such as alternative education concept, desire for participation, parent network formation or education-interested communities. Several diversified projects for learning, media and new communication channels about that education reform in the next period will create new quality to Thai society.

The Section 4 of National Education Reform Act B.E.1999 defines that “Education means the learning process for personnel and social development through imparting of knowledge; practice; training; transmission of culture; enhancement of academic progress; building a body of knowledge by creating a learning environment and society with factor available conducive to continuous lifelong learning.

These changes will come from the new management system. For example, quality assurance of education will be highly important. The schools must have their own committees to manage and take all aspects of education to be assessed and assured. Quality assurance will be managed in terms of internal and external auditing.

Several changes that occur lead to the preparation of system and structure of private education. The private schools must develop guidelines for quality improvement so as to attract and to serve the customer needs. With these causes, the private vocational schools must urgently develop themselves and follow the standard line of quality assurance of education. In order to achieve that goal, the Private Education Commission has created the concept and format of quality assurance with the following seven areas of quality:

1. Philosophy and goal of school
2. Curriculum and learning process
3. Personnel
4. Resources for teaching - learning
5. Management
6. Students' activities
7. Students' achievement

These all factors are overall perspectives for educational management in general, not specifically confined to in environmental education management.

With many reasons i.e. the failure in solving environmental problems, the progress in education reform, the enhancing of quality assurance in education, as well as the exposure to some researches in environmental education management, it is considered an urgent need to study and assess the present situation. Such assessment or follow-up procedure will employ the seven areas of quality assurance propose by the Private Education Commission as guidelines for the investigation.

1.2 Objectives

This research was aimed to study the actual state and problems of environmental education management in private vocational schools. The study would be conducted under the areas of philosophy and goal, curriculum and learning process, personnel, educational resources, administration, students' activities and learning outcomes.

1.3 Scope of the study

1.3.1 This study focused on the actual state and problems of environmental education management in 1999-2000, following seven aspects of school standardized quality assurance.

1.3.2 The populations in this research consisted of administrators and teachers responsible for the environmental education courses and projects in four private vocational schools in Nakhonpathom. They were Technology Nakhonpathom

School, Intertechnology College, Phattana Administration College and Nakprasit Commercial School.

1.4 Definitions of terms

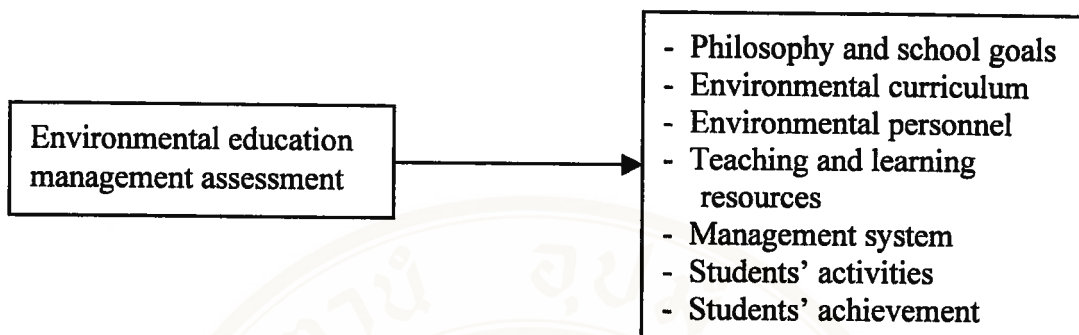
There are two key terms to be defined as follows:

1.4.1 The environmental education management is procedures, methods or activities employed by the administrations along with teachers to successfully implement and follow up the environmental education programs under the seven aspects for quality assurance:

1. Philosophy and goal of environmental education management.
2. Curriculum and learning process in environmental education.
3. Personnel responsible for environmental education management.
4. Resources for environmental education.
5. Management.
6. Students' activities.
7. Learning outcomes

1.4.2 The school administrators refer to the principal, the assistant administrator, head of faculty, head of students' activities, head of class level, head of building management and etc.

1.5 Conceptual framework for study.



1.6 Significance of the study

1.6.1 The results of study will be a framework or guidelines to examine whether the policy on course management and environmental education projects have been achieved.

1.6.2 The results of study will provide recommendations for the private schools to design and establish the programs that suit their environmental education activities.

1.6.3 The results of study will help the administrators effectively adjust their roles for dealing with environmental education management in school.

1.6.4 The results of study will be used to formulate new body of knowledge in the area of environmental education management in the private vocational schools.

CHAPTER II

LITERATURE REVIEW

To explore any field of new body of knowledge followed by research study requires a framework of thought. Theories which are grounded in a science of knowledge can be of great use in that they serve as guidelines, assisting the researcher to shape up an appropriate frame of thought and to create more logical implication in the findings (Sirichai Kanjanawasi, 1993:13). Review of literature is thus of great importance in being a process in which points of interests can be systematically studied. In this study, the researcher aims to study the state and problems of environmental management in private vocational school. Theories, related literature and previous studies will be reviewed as follows.

2.1 Quality assurance for education.

2.2 Environmental education.

2.2.1 Definition of Environmental Education

2.2.2 Philosophy of Environmental Education

2.2.3 Principle of Environmental Education

2.2.4 Goals of Environmental Education

2.2.5 Objectives of Environmental Education

2.2.6 Components of Environmental Education

2.2.7 Roles of Environmental Education

2.2.8 School Environmental Education Management

2.2.9 Environmental Education Management

2.2.10 Teaching approach to Environmental Education

2.2.11 Appraisal and Evaluation of Environmental Education

2.3 Review of related studies

2.1 Quality Assurance for Education

Educators and administrators currently pay a lot attention to accountability and quality assurance. Many seminars, workshops, conferences and training have been conducted to discuss and formulate guidelines or frameworks for implementing quality assurance in education at all levels of schooling. Ministry of Education demands schools and educational institutes under different departments to really set up guidelines for and implement quality assurance in all aspects of students learning.

The Private Education Commission, one of the ministry's departments, has formulated official guideline for its educational accountability in every private school and at every level. Seven areas of standardized education have been created as follows:

First area: Philosophy and goals of school

Criteria

Philosophy and goals of school are appropriate to be used as guidelines for school improvement and development.

Quality Index

1. The essence of philosophy is congruent with objectives of the national education and serves the community's needs as well as inculcate the right values in the learners.
2. The goals aim at the permanent outcome in students' learning which is well-rounded, balanced, and worthwhile in providing education at all levels.
2. There are strategic and action plan to serve the school's philosophy and goals.
3. School personnel and people concerned understand school's philosophy and goals.

Second area: Curriculum and learning process.

Criteria

1. To study and develop curriculum with flexibility, modernization and relevance to the needs of society and students.
2. Efficiently organize teaching and learning activities following the curriculum guide.
3. The procedure of learning measurement and evaluation complies with principles and rules that have been set.

Quality Index

1. There are curriculum analysis and lesson plans relevant to the conditions of school community and learners.
2. There are lesson plans relevant to curriculum.
3. There is curriculum evaluation and use the evaluation outcome for implementation.
1. Diagnosis of the individual and group learners is undertaken.
2. Various teaching techniques are employed to promote student-centered approach.
3. Educational tools, materials and technology are appropriately, sufficiently and safety used.
4. Systematic and continuous supervision in teaching is provided.
1. There is a complete set of materials and documents for the evaluation process.
2. The authentic learning evaluation procedure is undertaken to witness the students' progress.
3. The evaluation is conducted from time to time so that the evaluation outcome will be used for continuous learning improvement.

Third area: Personnel

Criteria

1. There are professional administrators.
2. Every teacher has knowledge, ability and morality suiting his/her teaching profession.

Quality Index

1. The administrators possess knowledge, ability, vision and aims at successful task performance.
2. To be a good model of personal behavior and working style.
1. The teacher's qualification is congruent with his/her teaching areas.
2. The teacher's behaviors comply with the code of ethics in teaching profession.
3. The educational personnel commit themselves to the teaching profession standards.

Criteria	Quality Index
3. The personnel acquire knowledge and ability and perform to meet their full potentials.	1. Their knowledge is compatible with job assignment. 2. Commit themselves to the success of the organization (school).

Fourth area: Teaching and Learning Resources

Criteria	Quality Index
1. Buildings, classrooms, workshop and school surroundings are suitable for learning enhancement.	1. They are strong, firm and safe as well as given appropriate maintenance. 2. Library, book corner and academic center equipped with documents and textbooks enhance learning. 3. Tools and equipment are sufficient. 4. Surroundings and school atmosphere enhance teaching and learning.
2. Materials, equipment and technology's quality is sufficient for teaching and learning.	1. Efficient procurement of materials and equipment. 2. There are good services and wide use of materials.
3. Budget allocation is conducive to quality improvement of teaching and learning activities.	1. Budget spending is aimed at the quality of teaching and learning activities. 2. Budget spending has been efficiently planned and systematic auditing has been implemented.
4. Information processing system and learning network is established.	1. Database has been developed for the purpose of planning and learning activities. 2. An information service is comprehensive and speedy. 3. Close relationship with external organizations has been established.

Fifth area: Management

Criteria	Quality Index
<p>1. There is modernized management system.</p>	<p>1. Administrative structure is clear and suitable with size and education level of school. 2. There are administrative handbook and guidelines for personnel. 3. School charter and school improvement plan are prepared. 4. Availability of educational innovations, technology and information system. 5. Widespread and continuous development of personnel.</p>
<p>2. Establishment of democratic atmosphere.</p>	<p>1. Working as a team has been encouraged so as to get them participate and voice their opinions. 2. Give the potential leaders opportunity to exercise the leadership role.</p>
<p>3. There is appropriate system of monitoring and auditing.</p>	<p>1. Guidelines and framework for monitoring, auditing and reporting have been established. 2. The concerned personnel are able to conceive and follow the system. 3. There is a continuous process of quality control.</p>

Sixth area: Student Activities

Criteria	Quality Index
<p>1. Provision of services and welfare to students for their physical and mental development</p>	<p>1. School nutrition and sanitation services have sufficiently been provided. 2. Recreation and health examination are available. 3. Security system compatible with conditions of school and community. 4. Student welfare is available for the needy students. 5. Guidance and counseling services are provided</p>

Sixth area: Student Activities (cont.)

Quality Index	Criteria
2. Systematic student governance.	1. Rules, regulations and guidelines for students are clear to follow. 2. Closed and continuous follow-up of students' behaviors. 3. Information about students' behaviors is used for improvement of student affairs activities.
3. Student activities are organized to promote students' morality and characters suitable to their age and interests.	1. Opportunity is given to students to voluntarily participate in activities. 2. Continuous follow-up of student activities is undertaken.

Seventh area: Student Achievement

Criteria	Quality Index
1. High learning achievement of the graduates.	- Fifty percents of the graduates earn the GPA above 2.5.
2. Students' progress in learning meets their potentiality.	1. On the average the students' learning abilities should meet the criteria set by school. 2. There is portfolio to show the students' progress.
3. The students' attitude to learning is desirable.	1. Students have interests, commitments, industry and enthusiasm in learning and learning outcome. 2. Students acquire basic skills in working and follow code of ethics in their profession. 3. The learner has good behavior, discipline, politeness, gentleness and accept the importance of environmental conservation. 4. The learners have good relationship with their teachers and school personnel. They are responsible for their duties and behave themselves properly.

The above seven areas of standardization are used as guidelines for the administrators to perform duties to meet the educational goals. In this study, these seven areas are used as a frame for assessment of the environmental education management. That is, environmental education activities or projects will be evaluated according to these seven dimensions so as to measure the success of environment related missions.

2.2 Environmental Education

- 1.2.1 Definition of Environmental Education
- 1.2.2 Philosophy of Environmental Education
- 1.2.3 Principle of Environmental Education
- 1.2.4 Goals of Environmental Education
- 1.2.5 Objectives of Environmental Education
- 1.2.6 Components of Environmental Education
- 1.2.7 Roles of Environmental Education
- 1.2.8 School Environmental Management
- 1.2.9 Environmental Education management
- 1.2.10 Teaching approach to Environmental Education
- 1.2.11 Appraisal and Evaluation of Environmental Education

Environmental Education has been evolving for many years. It got a bit stimulus in 1972, when representatives at the United Nation Conference on The Human Environment in Stockholm, Sweden recommended that the UN establish an international environmental education program. The United nation Educational,

Scientific, and Cultural Organization (UNESCO) followed up on the recommendation by sponsoring a series of environmental education workshops and conferences around the world. In 1975, representatives from member nations met in Belgrade, in the former Yugoslavia, to outline the basic definition and goals of environmental education. Then in 1977, representatives from more than 60 nations gathered in Tbilisi in the former Soviet Republic of Georgia for a follow-up to Belgrade. Delegates to these two international conferences ratified the following definition of environmental education.

2.2.1 Definition of Environmental Education

From the National Resources Commission of Education International Meeting on Environmental Education in the School Curriculum (IUCN) in Paris, France 1970 (UNESCO, 1977:75), the environmental education is defined as a process that accepts values and improves concept and attitude, environment and related culture, all of which are combined to make decisions and determine behavior towards the environment. Meanwhile, the Environmental Education Act or the Public Law of the U.S.A., maintains that the main point of the environment education is the model in providing education convening the relationship between the population and pollution, natural resources, conservation, transportation, technology and between the city planning with human environment (Walter E. Steidler, 1977 as cited by Vinai Veeravatnanond, 1996:13)

An American expert in environment, Bernart J. Lucko, (1982 as cited by Vinai Veeravatnanond, 1996:14), defines the environment education as the studying process with the aim to promote knowledge of the population in the relationship

between life and physical and social environment. Environmental education also aims to create awareness of the environmental problem and to persuade to yielding responsible behavior, which leads finally to problem solutions. Also, Stapp (1981:1) gives similar definition ; that is , a process with the objective of developing the world population to be aware of all environmentally related problems. Schmieder (1977:25) sees that the environmental education can be a new way to instill responsibility for the general people in acquiring knowledge and developing the basic needs of human beings.

Many Thai environmental scholars have various definitions of the environmental education, each focusing on a certain point. Ksem Chunkao (1993:15), for example, summarizes the concept of environmental education that it is a well systematic process of knowledge provision, emphasizing the use of technology. Vinai Veeravatnanond (1996:15) states that environmental education is a studying process emphasis on physical environment; concrete factors that change environment, and the impact on human beings.

In summary, environmental education is the purposeful process of education that makes people aware of environment importance. The people can be taught in skills, knowledge, values, emotions and responsibility to be will prepared in order to take right action for the current environment issues and for prevention of the future problem.

2.2.2 Philosophy of Environmental Education

To provide knowledge about the environment, scholars must create a clear-cut philosophical framework. Tanner, who wrote the article "Significant Life

Experience" (1980:20), explained the idea about the spaceship earth, revealing the related system of environment and the environmental education program. Learners should be encouraged to understand the basic philosophical idea of the spaceship earth. This frame of thought can be an overview of the environmental education program.

Temduang Ratanatasanee (1986:12-13) referred to the Environmental Education Act in the U.S.A., indicating the basic concept of environmental education that those who have undergone through environmental education must possess all basic knowledge on global environment, nature law delineating the ecological system, including the relationship between man and ecological system. Besides, learners have to know about the impact of ecological system on human ways of living, the responsibility humans should take in all environmental changes. We as members of society should be cautions in using things in nature. From the UN. Conference on Human Environment (as quoted in Temduang Ratanatasanee, 1986:13), education and training n environmental problems are taken as important matter, so they are included in the policy of environment as the long-term plan.

Definitions of environmental education stress the importance of the mutual relations between man and environment. Men are supposed to understand nature and any impact of the human action on environment. Also, the environmental education provides points of views on application and environmental education philosophy. Then learners must come to the whole relation of things, which acts as the spaceship earth.

2.2.3 Principle of Environmental Education

The general consensus, which has emerged on the nature of environmental education, reflects the goals and principle set out at Tbilisi in 1977. The following set of statements is based upon the Tbilisi Report Recommendation 2, (UNESCO, 1978: 27)

Tbilisi Recommendations

Environmental education:

- is a lifelong process.
- is interdisciplinary and holistic in nature and application.
- is an approach to education as a whole, rather than a subject.
- concerns the interrelationship and interconnectedness between human and natural systems.
- view the environment in its entirety including social, political, economic, technological, moral, aesthetic and spiritual aspects.
- recognizes that energy and material resources both present and limit possibilities.
- encourages participation in the learning experience.
- emphasizes active responsibility.
- uses a broad range of teaching and learning techniques, with stress on practical activities and first hand experiences.
- is concerned with local to global dimensions, and past / present / future dimensions.

- should be enhanced and supported by the organization and structure of the learning situation and institution as a whole.
- encourages the development of sensitivity, awareness, understanding, critical thinking and problem solving skills.
- encourages the clarification of values and the development of values sensitive to the environment.
- is concerned with building environmental ethics.

2.2.4 Goals of Environmental Education

Goals of environmental education have been established in the International Environmental Education Workshop in Belgrade, Yugoslavia, 1979 (UNESCO, 1980: 26)

1. To instill awareness and concern for the interdependence in economy, society, politics and ecological system in urban and rural areas.
2. To provide an opportunity for people to get knowledge, value, attitude, association, necessary skills to protect and develop environment.
3. To construct behavioral patterns on environment of individual group and society.

Vinai Veeravatnanond (1987 : 2) summarized the environmental education goals as follows:

1. To provide knowledge and understanding on environment.
2. To bring about appropriate behavior that is determined by the sake of environment condition.

In conclusion, the goals of environmental education are to provide knowledge on environment, and to create the conscience of responsibility in protecting and improving the quality of environment.

2.2.5 Objectives of Environmental Education

Environmental education objectives have been set according to the Belgrade Charter (UNESCO-UNEP, 1976:1-2)

Environmental Education is “a process aimed at developing a world population that is aware of, and concerned about, the total environment and its associated problems, and which has the knowledge, attitudes, skills, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones”

Specially, environmental education stresses these five objectives:

1. Awareness:

Help students acquire an awareness and sensitivity to the total environment and its problems; develop the ability to perceive and discriminate among stimuli; process, refine, and extend these perceptions; and use this new ability in a variety of contexts.

2. Knowledge:

Help students acquire a basic understanding of how the environment functions, how people interact with the environment, and how issues and problems dealing with the environment arise and how they can be resolved.

3. Attitudes:

Help students acquire a set of values and feelings of concern for the environment and the motivation and commitment to participate in environmental maintenance and improvement.

4. Skills:

Help students acquire the skills needed to identify and investigate environmental problems and to contribute the resolution of these problems.

5. Participation:

Help students acquire experience in using their acquired knowledge and skills in taking thoughtful, positive actions toward the resolution of environmental issues and problems.

Environmental Education Curriculum

Because of the widely concerned public on the environmental problem, many scholar as well as environmental planners in Thailand pay much interest to the problems arising. The concern with the problem has expanded widely throughout the country. At this point, environmental, education was made to happen in the Thai educational system at various levels.

Environmental education must be done in the lifelong process from birth to death. Elementary students should be first oriented to environment. They must create right attitudes within themselves. Environmental education was included in the National Primary Education Curriculum 1978, (Updated 1989). The content was immersed in parts.

2.2.6 Components of Environmental Education

Planning for the inclosing of environmental education in the curriculum needs to take account of the three interlinked components which comprise the theme: (Palmer and Neal, 1994 : 29-30)

- education **about** the environment.
- education **for** the environment.
- education **in** or **through** the environment.

These elements are interrelated and are essential components of a planning at every level, ranging from whole school and year group curriculum planning to the more specific plans for topics, programmers of study and tasks applicable to a class, group of learners or an individual. An integral part of the planning process must take account of the need to develop an understanding of the interrelationship between the three components. Figure 1 represents these components of environmental education in diagrammatic form. The dimensions of skill, concepts and attitudes are inextricable bound into the core content of the three structural elements:

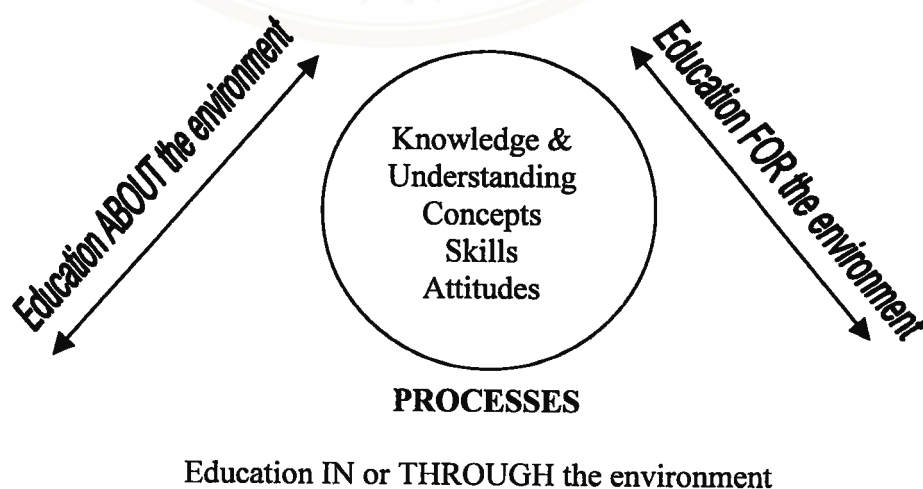


FIGURE 1 Interrelated components of environmental education

Source: From the Handbook of Environmental Education by Palmer and Neal, 1994: 30

- Education **about** the environment has the purpose of developing knowledge and understanding about values and attitudes.
- Education **for** the environment encourages students to explore their personal response to and relationship with the environment and environmental issues. This is linked to the development of attitudes and values, including elements of human understanding and behavior necessary for the development of sustainable and caring use of the environment.
- Education **in** or **through** the environment uses the environment as a resource for learning. It is a resource, which enables the development of a great deal of knowledge and understanding as well as skills of investigation and communication.

2.2.7 Roles of the Educational Institutions toward Improving Environment Quality

In the improvement of environment, schools, educational institutions should hold the concept those schools are part of community. (Bellamy, 1995:3) As a result, schools should be examples of surrounding communities in arranging things in good order. Building, cafeteria, toilet, workshop, road, footpath (sidewalk), parking lot and garbage bins must be taken as best care of as possible.

Besides, schools must have clear-cut policies, allowing various parties to take part in policy-making such as administrators, teachers, students, parents and communities. Students (learners) have to understand the relationship of all factors concerned in their daily life activities.

Environmental policy can facilitate the school environment management effectively. Environmental education does not only aim to create awareness in environmental problems but shape the students' desirable behavior in preservation. In the latter sense, students should reduce the expenses that are not necessary, save the energy, reuse the products and recycle them (Bellamy, 1995:4). Organization of activities as well as academic subjects is provided to train students, to give them knowledge and to build up awareness.

2.2.8 School Environmental Management

Schools are considered as a small unit in a society. Students have to spend the early part of their lives. If only coming to schools about 200 days in a year, they spend at least 8-10 hours a day. Schools can be a second home. It is generally accepted that schools are places that are used to socialize, moralize and shape students' behavior (Chamlueng Wuttijan, 1981:139-144)

In school environmental management, administrators must consider the curriculum, teaching approaches, environmental state in school that is helping to learning. Students have to be involved with building, classroom school compound, discipline, teacher's instruction and atmosphere in living together.

As can be seen, environmental state in school can be teaching media in environmental education. The more the teachers adapt the environmental state in school to fit in the needs of the course, the more successful the course will be.

So a well-planned policy is needed for school environmental improvement. Steps should be taken as follows:

1. Determine clear-cut objectives in improving school environment.
2. Explore a school compound to see whether any part of it can be used in teaching environmental education.
3. Improve school environment.

2.2.9 Environmental Education Management

In the process of teaching and learning, what the scholars need is to change the learners' behavior into the objectives of the curriculum; whether the objectives can be fulfilled or not depends on the teachers' performance. The more knowledgeable the teachers are, the more successful the course will be (Peyton, 1977; Sanchez, 1990). Siriwan Sripahol (1985:6) said that the tool important to lead the learners achieve the targets is organizing activities. Appropriate activities can make learners understand the real content.

Environmental education can be applied with the existing curriculum that is currently used in various forms. It distinguished in a one subject, it may be burden for students. It can be partially included in such subject as biology, geography, history or other subjects. To put it in the best place, environmental education can be presented as a concept, which is then applied in various subjects. By this way teachers must undergo intensive training (Novak, 1991)

However, environmental education must be aimed at learners who can develop their understanding toward right-decision making (Buethe, 1985, Wilke, 1985, Tulloch, 1986, Lozzi, 1990). Teachers should emphasize practical activities and direct or real experiences. Without creating good awareness and responsibility,

environmental education is simply a vocational tool that can be viewed as a failure for the course.

2.2.10 Teaching Approaches to Environmental Education

Environmental education is the field of study delineating the relationship between man and environment, and humans' roles on the improvement of the environmental quality, Environmental education is taught to shape a right concept in the students.

To build up conscience and right attitudes towards the environment is the key of class management. Students are required to participate actively and to make decision based on democratic values.

The following ten-point guidelines give some idea of the approach schools are asked to consider:

1. The study (Topic or Theme) should be based on the immediate school surroundings, the local neighborhood or town.
2. The study should focus on particular features and areas and on local issues and problems that affect the quality of life of the community.
3. The study should directly relate to the basic aims of environmental education.
4. The study should be a local educational experience that may be related to a national in international environmental problem or issue.
5. Students should be involved in direct personal exploration of their locality and town and be required to make first hand observation.

6. The work should improve the students' understanding of the processes and people that plan, manage and change our surroundings.
7. The study should involve local agencies.
8. The study should encourage students' appreciation of the importance of involvement in maintaining and improving the quality of the built environment.
9. The study should teach specific skills, techniques and concepts and encourage the operational use of basic skills.
10. The work should reflect the overall environmental policy of the school.

Teaching Approaches

- | | | |
|---------------------------------------|---|---|
| 1. Outside-classroom study | : | Students can be directly exposed to real experiences : camping and excursion. |
| 2. Audio visual study | : | Photos, slides, films, television, documentary |
| 3. Journal-keeping activity | : | Record experiences. |
| 4. Field study | : | Co-operating with members in community. |
| 5. Classroom activity | : | Teachers' methods in creating direct experiences. |
| 6. Geographical study | : | Map reading. |
| 7. Anthropological & Geological study | : | Tree aging measurement. |
| 8. Environmental project | : | Individual & group working. |
| 9. Stimulation | | |
| 10. Interviewing | | |
| 11. Debate | | |
| 12. Role playing | | |
| 13. Reporting | | |
| 14. Drama | | |

2.2.11 Appraisal and Evaluation Education

Appraisal and evaluation of environmental education can determine how effective environmental education teaching and learning are and how well the



students have learned the material, as well as provide teachers with the information they need to develop environmental education objectives of individual schools' readiness and capacity.

2.3 Review of related studies

Oraporn Yamsopa (1989:Abstract) investigated the elementary school curriculum implementation conditions and problems regarding the environmental education in elementary schools under the jurisdiction of Bangkok Metropolitan Administration. It was found that most school provided instructional media by surveying teachers' needs but quite insufficient in quantity while there were no room for practicing periods. In the matter of instructional management, teachers prepared lesson plans and lecturing was popularly used. Texts were used mostly while evaluation was performed through written testing technique. Besides, the understanding of Heads of Experience Area and teachers concerning the Elementary Curriculum implementation regarding environmental education were at the fairly high level.

The problems concerned in the curriculum implementation were the lack of documents on environmental education for teachers to study; the insufficient time for teachers to produce more instructional media; the lack of suitable laboratories and the unsuitable school environment, which did not support the local resources implementation.

Norman (1992:Abstract) designed and implemented a staff development model to assist experienced teachers in improving their knowledge and instructional abilities regarding environmental education. This model was built on participant

involvement in setting goals, and included strategies for both bringing about change and for evaluating the effects of these changes on teachers and elementary school students.

There were four components to the staff development model. These components included teacher needs assessments, participant involvement in planning, a two-week teacher education workshop, and post workshop follow-up activities.

Charunan Chancana (1993:Abstract) studied the state and problems of instructional management of population and environment subject, educational region nine. The results of the research indicated that most of the teachers set the objectives, organized content relevant to the curriculum with emphasizes on environment, used the teaching technique which developed group working skills, let the students planned and managed extra-curricular activities and evaluated the students knowledge and understanding. The problems of instructional management of population and environment subject: it was found that the problem of curriculum implementation administrators, teachers and students were moderate both in general and in detail.

Liou (1993:Abstract) examined environmental knowledge, attitudes, behavioral intention and behavioral of the preserve elementary teachers in Taiwan. The results indicated that the subjects' environmental knowledge, attitudes, and behavioral intention were comparable to their western counterparts as measured using the same scales. Environmental behavioral intention, experience of environmental education was found to be most significant of environmental behavior. It was concluded that environmental behavior could be predicated from its predisposing and sociodemographic factors.

Sureerat Mounkayounjit (1993:Abstract) studied the state and problems of environmental programs in elementary schools under the jurisdiction of the Bangkok Metropolitan Administration in the aspects of the program objective, characteristics, operation, personnel, activities, budget resources, results and programs. The results of the research indicated that there were fifty-six environmental programs and activities in elementary schools under the jurisdiction of the Bangkok Metropolitan Administrations. The Office of Education, BMA, initiated fifteen programs. Twenty-seven programs were initiated and / or patronized by various Non-Government Organizations; and fourteen programs were initiated within elementary schools.

Environmental programs initiated by the Office of Education, BMA. emphasized awareness concerning environmental problems. The BMA subsidized all programs. There was time limitation in carrying out activities.

Environmental programs initiated by NGO emphasized practical solutions concerning environmental air pollution, water and waste pollution. Programs and activities were organized, and mostly subsidized by NGO.

Environmental programs initiated by elementary schools emphasized awareness concerning environmental problems. Activities were conducted in accordance with school curriculum, and subsidized through the school annual budget. Time and financial limitation were the major problems.

Samuel (1993:Abstract) studied impediments to implementing environmental education. It revealed that planning ahead and teacher participation in decision-making are imperative. The implementation of a sound environmental program requires that teachers understand the philosophical and pedagogical nature of environmental education in order to relate it to their subject areas. When guidelines

for teachers, curricular supplements, and accessible materials are lacking, a school's ability to accomplish its goals is limited.

Montree Swaengsakdi (1994:Abstract) Studied the management of environment education activities in private schools. He distributed questionnaires to the principals of 169 private secondary schools in Bangkok Metropolis. It was found that the most environmental education activities were managed at high frequency. But some activities were managed less frequent. They were disposal of dry garbage in school incinerators, provision of separate garbage bins of each type of garbage, development of waste-water pond at school, supervising teachers on the management of environmental education activities, issuing environmental newsletters, "On-air" programs management to disseminate information and news concerning the environment, management of conservation or environmental development clubs and environmental camps.

Sunantha Nakeeruck (1994: Abstract) studied the state and problems of the organization of the life experience area relating to environmental education in the elementary schools under the Office of Saraburi Primary Education. The results found that, in the preparation stage of curriculum organization in the life experiences area elementary schools planned the curriculum organization by studying the state, problems, and needs of the communities and the students, prepared lesson plans and encouraged teachers to attend meeting and training concerning curriculum and instructional activities, In addition, teaching materials in a accordance with teachers' need, were provided. Libraries were also set up to serve as a resource center for both teachers and students. Materials and instruments as well as budget were allocated for

measurement and evaluation purpose. Meeting was held for all the teachers in order to enhance their understanding and acceptance of the importance of supervision.

In the operational stage of curriculum organization schools carried out instructional activities by supporting the use of diversified teaching methods that not only are appropriate to the subject matter, but also correspond with the ways of life. Teaching materials were used and produced by the teachers. Employing various techniques did measurement and follow-up was seen through classroom visits.

In the stage of follow-up and evaluation of curriculum organization, schools employed inquiry method to obtain relevant information from the teachers.

Problems of curriculum organization were that teachers lacked understanding of curriculum organization. The schools did not have clear plan of implementation, nor could they provide sufficient budget for materials and equipment needed for instructional plan. The number of teaching staff was inadequate and consequently teachers had to perform various functions that affected the quality of teaching supplementary document for teachers and teaching materials were insufficient. Budget to produce materials and to improve school is classroom decoration was also a constraint. Moreover, teachers did not have adequate knowledge of measurement and evaluation and did not collect exam papers for analysis and quality improvement. Teachers also had no time to undertake supervision and follow-up activities. Furthermore, there was a lack of qualified personnel on supervision and follow-up as well as materials and tools in performing the tasks. The result drawn from supervision and follow-up activities was not utilized to improve the curriculum organization.

Noree Thepmontha (1995:Abstract) studied the state and problems of instructional management of environmental education as perceived by administrators

and social studied teachers under the jurisdiction of the Vocational Education Department, Bangkok Metropolis. It was found that: they designed the curriculum in accordance with the master plan for Environmental Education of the Ministry of Education, taught environmental education as separate subject, teachers analyzed curriculum with emphasis on students' knowledge and direct learning experiences and used lecture for the main teaching, teachers and students cooperatively developed instructional materials, emphasize the compatibility with the subjects content and the enhancement of students' knowledge on environment, evaluated technique and students' direct experiences as well as participatory ability in solving environmental problems. They have arranged the school environment on the basis of cleanliness, beauty and facilitate the practice of environment care and protection for the students as well as co-curricular activities. It was found the serious problems was lack of well trained personnel in environmental education, lack of budget for teacher training in instructional materials developments and evaluation technique development and arrangement of co-curricular activities, and teachers' lack of environmental education information.

Shuman (1995:Abstract) studied factors that influence commitment to teaching environmental education: development and test of a casual model. The research addressed the following objectives: to identify factors that influence teachers' commitment to teaching environmental education, to develop a theoretical model that represents the interrelationships of the factors as they relate to teaching environmental education and to test "a model of teachers commitment to teaching environmental education. To meet these objectives a theory based Model of Environmental Education Commitment" (MEEC) was developed and tested using the

following methodologies (1) focus groups with already committed environmental educators, (2) a national survey of elementary teachers and (3) structural equation modeling to examine relationships in MEEC.

As a result of this research, a revised MEEC was developed in which a teacher's outdoor recreation experiences and perceived control about teaching environmental education are two key constructs that have a direct effect on commitment to teaching environmental education. Other constructs, such as other people's influence and environmental action and education experiences, provide an indirect influence on commitment to teaching.

Derrag (1995 : Abstract) studied the status of environmental education in the secondary schools of the state of Maine. The following inferences were made from the survey : (1) environmental educators believe there is a considerable discrepancy between the desired status of environmental education and the existing status; (2) environmental education should be taught as both an interdisciplinary offering and as a separate course; (3) curricula should include more problem solving and community action techniques with less emphasis on environmental knowledge and awareness; (4) more teacher training is necessary both as pre-service and in-service courses in environmental education; (5) money, teacher, time, priority and guidelines are the major barriers to teaching environmental education.

An ancillary part of this study was to request and publish information about exemplary environmental education programs from across the country in order to provide model programs for high school teachers.

Kimberly (1996:Abstract) studied the environmental education teacher in-service education: the need for new perspective. It surveyed environmental education

coordinators in all 50 states and the District of Columbia to investigate the current practice of in-service education for K-12 teachers in the United States. Results revealed that professional development in environmental education is dominated by activity-based, nationally produced curricula; is primarily science-oriented rather than interdisciplinary; and is concerned more with environmental content than educational context. The results indicate the need for profound changes in the educational approach to professional development in environmental education.

Wilson&Smith (1996:Abstract) studied environmental education and the education literature. It was conducted to determine to what extent the current professional education literature is publishing material on environmental education in the school curriculum. Findings indicate that readers will not readily find information on how to infuse environmental in current educational journals than those of 20 years ago. These findings suggest that environmental education may be a low priority in the schools and in teacher education programs.

Simmons (1998:Abstract) studied using natural settings for environmental education: perceived benefits and barriers. The results found that factors analysis of response showed six benefit and barrier factors: appropriateness of teaching setting, teacher confidence, worries, need for training, hazards, and difficulty of teaching environmental education. Deep woods and rivers, ponds and marshes settings were seen as significantly more appropriate for teaching environmental education than urban nature was, but they were also seen as presenting significantly more hazards than country park and urban nature settings.

Paraskevopoulos, et al., (1998:Abstract) studied environmental knowledge of elementary school students in Greece. It was found that the education system in

Greece has responded promptly to the need for environmental education (EE). However, the existing lack of relevant research may limit the functionality of environmental education programs in Greece, In this study the goal was to develop a baseline database that would allow effective planning of environmental education. Specifically, the study was conducted to provide information on the environmental knowledge of 5th and 6th graders in a Greek city. A total of 686 students were surveyed. The results indicated that children's knowledge about the environment is influenced by their immediate experience as well as by the content of their textbooks.

Nuttara Thankham (2000:Abstract) studied the management of environmental education in out-standing primary schools under the jurisdiction of the national primary education office. As a result of this research, the three primary schools each received an award for out-standing environmental education management because they had the benefit of environmental management about electric energy and water. Everybody in each school could do management activity successfully, whenever teachers got environmental activity policies from their school administrators. These policies were followed by students. The advantage of the activities resulted in a progressive way of thinking about environmental conservation. More over, all schools that received this award promoted knowledge in accordance with their environmental policy to people in the general community.

Wilailak Ratanapeanhamma (2000:Conclusion) studied the environmental problem state, environmental education policy and environmental education administration of the elementary schools in order to construct, and evaluate the appropriate environmental education model for the elementary schools in Bangkok Metropolis. The instruments used for data collection were questionnaires for

administrators, teacher; observation form of environmental education management; form of testing environmental knowledge, attitude and behavior of students and form of evaluating the environmental education model to find the appropriate model. In this study, she found that:

- a. The administrator was the most important person who made the environmental education management in school become concrete and practical.
- b. Time consumption to achieve the performance target of the environmental education management was high. It was so because of different readiness, understanding and performance.
- c. Different academic plans and policies and another obstacle existed; this would lead to the problems in managing performance.
- d. The co-operation of those who was responsible for the environmental education management was also an important factor. The administrators, teachers, students, janitors and the communities had to share the awareness, realization, responsibility and participation of the management in order to achieve the environmental education objectives.

Sakorn Kooncheun (2000:Abstract) studied the potential and participation of school committee and investigated the problems of participation, in primary schools under the jurisdiction of Samut Songkhram Provincial. It was found that, the administrator and teachers had knowledge and understanding and ability to initiate working on their roles. But the students' percents and understanding, almost all of them supported the general education such as to distribute information, participate in school activities, taking part of Student behaviors and focus on supported fund.

The problems of participation using local wisdom to develop educational instruction were lack of budgets, lack of local wisdom, and schools were not aware of the importance of using local wisdom to develop educational instruction. The schools provided less information and didn't give the students' parents, former students and the knowledgeable persons opportunity in the participation.

In conclusion, to manage environment in school must depend on several factors such as:

- a. The administrators should have knowledge and understanding about environmental education so the performance is achieved and followed up.
- b. Teachers should be adapted by acting as the guide and supporter who encourage the students to show off their capacity.
- c. The curriculum and learning activities must use various and relevant techniques in teaching and solving the real problems in society and community.
- d. The school should support the sufficient budget for environmental activities.

The issues will be the guidelines to study schools' adaptation, coherent to their environment and capacity, and then they improved the appropriate environmental management in school.

CHAPTER III

MATERIALS AND METHODS

Basic concept

The objective of this research was to study the actual state and problems of environmental education management for the private vocational schools. In the past, there were no accurate systems and continuity of environmental education management in schools because of the lack of clear understanding and attitude to the management, so this led to the lack of sharing the concept and achievement though there were a number of personnel in schools. This research will apply the aspect of quality assurance of standard school to environmental education management question airs, observation form and document of environment project in school. The research stages are as follow:

3.1 The Study of documents, textbooks and researches related to this study. The researcher performs the following:

3.1.1 Study various kinds of document of environmental education knowledge, the document of education reform and the document of quality assurance for education.

3.1.2 Study the related researches i.g. the researches about the study methodology, knowledge, understanding, attitudes on environment, environment state management in school, evaluation and regulations of environment, opinion of teachers

who want to get training in environmental education and the participation in action research of environmental project.

3.2 Population

The population for study were administrators and teachers who were responsible for environmental education management activities from the four private vocational schools in Nakhonpathom. The total of 104 subjects represented the mentioned administrators and teachers as shown in Table 3 below:

TABLE 3 Number of population, classified by position in each school.

Position \ School	Technology Nakhonpathom school	Intertechnology College	Phattana Administration school	Nakprisit Commercial school	Total
1. Director, Principal	1	1	1	1	4
2. Assist. Director, Principle	3	3	2	2	10
3. Head of study program	8	6	7	3	24
4. Assist. Head of study program	15	10	10	8	43
5. Teachers who responsible in environmental education program	13	3	3	4	23
Total	40	23	23	18	104

3.3 The research instruments

The research instruments include:

3.3.1 The questionnaires for school administrators and teachers who are responsible for environmental education courses. They are about state and problems of the environmental management in the areas of philosophy and goal, curriculum and

learning process, personnel, educational resources, administration, students' activities and learning outcome.

3.3.2 Observation form of environmental education management adapted from standard criterion of assessing environmental education activities in private vocational schools.

3.3.3 Documentary analysis form adapted from general environmental project in school. There are 4 parts i.e. general correspondent, state and problems in environmental management and other suggestions. The researcher used as guideline to interview school administrator and teachers.

The observation and documentary analysis forms are used to collect supplementary data for the total analysis of the study.

3.4 The process of construction

3.4.1 Study basic data from the document, textbook and researches about environmental education management, environmental education and quality assurance of education.

3.4.2 Draft the instruments.

3.4.3 Propose the drafted instruments to the thesis committee and research specialists for validity improvement.

3.4.4 Try-out the instruments in private vocational school in Chonburi province.

3.4.5 Improved instruments again and apply to actual population.

3.5 Data collection

3.5.1 The researcher directly contacted the listed administrators and teachers who were the subjects for study and gave them the questionnaires for responses. The responded questionnaires were collected from them within 2 months. 104 complete questionnaires were returned. That is a hundred percent of the population responded to the questionnaires.

3.5.2 The researcher herself visited these four private vocational schools to both collect questionnaires and to observe the atmosphere and some activities related to environmental education management. The observation was conducted in order to assess whether the data from questionnaires were congruent with the observed activities and the school atmosphere.

3.5.2 Observation: The researcher collected data from generally observed atmosphere in school and asked some students for further information.

3.5.3 The data was also collected from relevant documents, written reports, and project proposals of schools that reflected the schools' activities or the implementation of environmental education programs.

3.6 Data analysis

The data is systematically analyzed and presented with percentage, mode and descriptive statistic.

CHAPTER IV

RESULTS

Data analyses of the environmental education management of private vocational schools in Nakhonpathom province will be presented in the following three parts.

Part I: Questionnaire

The researcher has classified documentary data on environmental education management of school into four sections.

1. Respondents' general information
2. State of environmental education management in schools
3. Problems of environmental education management
4. Administrator's suggestion

Part II: Observation CheckList

Part III: Documentary analyses

The results will be discussed as follows:

4.1 The result of data analyses on questionnaires.

4.1.1 The respondents' general information

TABLE 4 Number and percentage of respondents' general information

No.	Items	Number	Percentage
1.	Sex - Male - Female	55 49	52.88 47.12
2.	Age 20-25 years 26-30 years 31-35 years 36-40 years 41-45 years Over 45 years	13 24 16 29 16 6	12.5 23.07 15.38 27.88 15.38 5.79
3.	Education Level - Lower than Bachelor Degree - Bachelor Degree - Master Degree and over	5 85 14	4.81 81.73 13.46
4.	Position - Director, Principal - Assistant Director, Principal - Head of study program - Assistant head of study program - Teachers who responsible in environmental education program	4 10 24 43 23	3.85 9.61 23.07 41.34 22.11
5.	Length of employment Less than 1 year 1-3 years 4-10 years over 10 years	4 28 38 34	3.84 26.93 36.54 32.69
6.	Method of acquiring basic knowledge on environmental conservation and development - Studying in the school program - Reading from documents. Textbooks, journal and magazine - Joining the conference and seminar - Study tour - Watching TV ,listening to radio and searching from internet	27 54 18 19 69	25.96 51.92 17.31 18.27 66.34
7.	Opinions about the implementation of environmental education - Important - Not important	104 -	100.0

From Table 4, it is shown that most of the respondents' were male (52.88%), belonged to the age group of 31-35 years (27.88%), obtained bachelor's degree (81.73%), were the assistant heads of study program (41.34%), had 4-10 years of employment (36.54%), acquired environmental knowledge through TV, radio and internet (66.34%) and considered the implementation of environmental education as important (100%).

4.1.2 The state of environmental education management

The researcher has presented in 7 parts

1) Environmental education management under the area of Philosophy and school goals.

TABLE 5 Number , percentage and mode of performance level under the area of philosophy and school goals.

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
1.	Acknowledgment of environment policy from originated authority i.e. municipality , Ministry of Education	21 20.19%	59 56.73%	23 22.11%	1 0.96%	Moderate
2.	Determination of environmental policy, goal of environment that serve the community's needs.	23 22.11%	59 56.73%	21 20.19%	0 0%	Moderate
3.	Studying the environmental situations from the related documents for policy formulation.	7 6.73%	61 58.65%	35 33.65%	1 0.96%	Moderate
4.	Analyzing the possibility of putting environmental policy into practice.	12 11.53%	54 51.92%	32 30.76%	6 5.76%	Moderate

From Table 5, it was found that the respondents as moderate in all items rated the performance level of environmental education management under the area of philosophy and school goals. However, the third item about “studying the environmental situations from the related documents for policy formulation got the highest rank; and the lowest rank was the fourth item about “analyzing the possibility of putting environmental policy into practice.

2) The area of environmental curriculum and learning process

TABLE 6 Number, percentage and mode of performance level under the area of environmental curriculum and learning process.

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
1.	Integrating environmental content of environmental preservation in related subjects.	28 26.92%	65 62.5%	10 9.61%	1 0.96%	Moderate
2.	Selecting the economical materials, equipment for teaching-learning materials that cause no harm to the environments.	40 38.46%	53 50.96%	10 9.61%	1 0.96%	Moderate
3.	Encouraging involvement of students in school's environmental projects such as tree planting, surrounding cleaning activities and energy conservation.	62 59.61%	33 31.73%	9 8.65%	0 0%	High
4.	Invitation of external and local resource persons to lecture to students on the environmental topics.	10 9.61%	39 37.5%	33 31.73%	22 21.15%	Moderate
5.	Organizing environmental tour.	15 14.42%	45 43.26%	30 28.84%	14 13.46%	Moderate
6.	Taking students to participate in environmental activities with local community and NGO	22 21.15%	45 43.26%	30 28.84%	7 6.73%	Moderate

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
7.	Encouraging students to discuss on t environmental problems taking place in school , community and society .	5 4.80%	56 53.84%	34 32.69%	9 8.65%	Moderate
8.	Presenting bulletin-board and exhibition on environment.	22 21.15%	47 45.19%	26 25.0%	9 8.65%	Moderate
9.	Using various teaching techniques in environmental education i.e. group process, solution process	14 13.46%	58 55.76%	25 24.03%	7 6.73%	Moderate
10.	Conducting a contest of motto writing, painting about environmental preservation	14 13.46%	43 41.34%	34 32.69%	13 12.5%	Moderate

From Table 6, it was found that most of the performance level of environmental education management under the area of curriculum and learning process were rated moderate except the third item which was considered as high level by the respondents. The third item is about “encouraging involvement of students in school’s environmental projects such as tree planting, surrounding cleaning activities energy conservation (59.61%)”. Under the moderate rating the first item on integrating environmental content of environmental preservation in related subjects (62.5%) and the fourth item on invitation of external and local resource persons to lecture to students on the environmental topics was ranked the lowest.

3) The area of school personnel

TABLE 7 Number , percentage and mode of performance level under the area of environmental personnel.

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
1.	Providing the conference, seminar and training for environmental teachers' ion to exchange the experiences and problems.	5 4.8%	44 42.30%	40 38.46%	15 14.44%	Moderate
2.	Encouraging the environmental teachers to join in environmental education seminars.	12 11.53%	45 43.26%	33 31.73%	14 13.46%	Moderate
3.	Supporting teachers to participate in environmental activities conducted by other agencies.	14 13.46%	39 37.5%	44 42.3%	7 6.73%	Low
4.	Inviting the state or private agencies involved in environment to lecture to teacher and students.	4 3.84%	39 37.5%	42 40.38%	19 18.26%	Low
5.	Supporting teachers who create the environmental works in terms of upgrading their positions	12 11.53%	45 43.26%	27 25.96%	20 19.23%	Moderate
6.	Praising or rewarding teachers whom successfully perform their environmental works.	9 8.65%	48 46.15%	30 28.84%	17 16.34%	Moderate
7.	Giving assistance and suggestion to teachers for solution in environmental education management problems.	12 11.53%	46 44.23%	34 32.69%	12 11.53%	Moderate

From Table 7, it was found that most of the performance level of environmental education management under the area of personnel were rated moderate by the respondents except item number 3 and 4 which were rated as low. They were "supporting teachers to participate in environmental activities conducted by other

agencies (3-42%) and inviting the state or private agencies involved in environment to lecture to teacher and students (38-40%).

4) The area of teaching and learning resources

TABLE 8 Number , percentage and mode of performance level under the area of teaching and learning resources.

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
1.	Having a specific plan for using area or space in school.	50 48.07%	41 39.42%	13 12.5%	0 0%	High
2.	Decorating the surrounding of workshop, laboratory, classroom, teachers' room and miniature garden.	66 63.46%	35 33.65%	3 2.88%	0 0%	High
3.	Constructing and renovating the classroom building with the emphasis on ventilation wind direction and light.	57 54.80%	34 32.69%	14 13.46%	0 0%	High
4.	Providing good management of school resources and facilities such as electricity, chemical substance and drainage system.	53 50.96%	39 37.5%	11 10.57%	1 0.96%	High
5.	Providing sufficient materials and equipment for environmental development.	27 25.96%	61 58.65%	15 14.42%	0 0.96%	Moderate
6.	Providing space, classroom and library as a searching source for environmental education.	40 38.46%	41 39.42%	21 20.19%	2 1.92%	Moderate
7.	Frequently changing and renovating the school surroundings.	43 41.34%	48 46.15%	13 12.5%	0 0%	Moderate
8.	Managing the budget system so as to efficiently promote the environmental program.	24 23.07%	58 55.76%	21 20.19%	1 0.96%	Moderate

From Table 8, it was found that most of the performance level of environmental education management under the area of teaching and the respondents as high and moderate equally rated learning resources. That was the first four items (1, 2, 3 and 4) and the last four items (5, 6, 7 and 8) were rated high and low respectively. The schools performed at high level in having specific plans for space use; decorating the school surroundings; constructing and renovating the classroom buildings; and having good management of school resources. The performed at low level in providing sufficient materials and equipment; providing classroom and library as a searching source; frequently changing and renovating the school surroundings; and managing the budget to promote the environmental program.

5) The area of management system , the details are shown in table 9

TABLE 9 Number , percentage and mode of performance level under the area of management system.

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
1.	Preparing a working calendar of environmental program.	9 8.65%	50 48.07%	26 25.0%	91 18.26%	Moderate
2.	Creating the school charter for environmental education projects.	24 23.07%	52 50.0%	22 21.15%	6 5.76%	Moderate
3.	Providing database for environmental planing in terms of producing books, periodicals and knowledge transmission through web site.	9 8.65%	40 38.46%	35 33.65%	20 19.23%	Moderate
4.	Recruiting personnel on criteria of responsibility, knowledge and ability for environmental tasks.	13 12.5%	46 44.23%	32 30.76%	13 12.5%	Moderate

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
5.	Providing evaluation and follow up he tasks or program assigned to the teachers.	28 26.93%	49 47.11%	21 20.19%	6 5.76%	Moderate
6.	Giving support and advice about the environmental matter.	15 14.42%	50 48.07%	25 24.03%	14 13.46%	Moderate
7.	Providing continuous public relations about school environment.	16 15.38%	52 50.0%	28 26.92%	8 7.69%	Moderate

From Table 9, it was found that all items of the performance level of environmental education management under the area of management system were rated moderate by the respondents. The first two highly moderate were item 2 and 7 about creating the school charter for environmental education project and providing continuous public relations about school environment respectively.

6) The area of students' activities

TABLE 10 Number, percentage and mode of performance level under the area of students' activities

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
1.	Providing sufficient hygienic food and nutrient.	37 35.57%	59 56.73%	8 7.69%	0 0%	Moderate
2.	Establishing environmental groups or clubs	27 25.96%	46 44.23%	23 22.11%	8 7.69%	Moderate
3.	Providing health examination and services on recreation and student welfare.	20 19.23%	41 39.42%	29 27.88%	14 13.46%	Moderate
4.	Giving accessibility for students to participate in environmental activities (in and out of school)	34 32.69%	50 48.07%	18 17.30%	2 1.92%	Moderate

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
5.	Praising and rewarding students whom work for the environment program.	13 12.5%	45 43.26%	33 31.73%	13 12.5%	Moderate
6.	Providing opportunity for students to participate in training, workshop, seminars and conference relating to environmental program.	10 9.61%	42 40.38%	33 31.73%	19 18.26%	Moderate

From Table 10, it was found that all items of the performance level of environmental education management under the area of student activities were rated moderate by the respondents. The most moderate was providing sufficient hygienic food and nutrient; and the least moderate was providing health examination and services on recreation and student welfare.

7) The area of students' achievement

TABLE 11 Number, percentage and mode of performance level under the area of students' achievement

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
1.	The students have appropriate response to their environment such as to help saving water and electricity and making no damage to school assets.	27 25.96%	51 49.03%	25 14.03%	1 0.96%	Moderate
2.	The students are interested and voluntarily participate in environmental activities.	25 24.03%	51 49.03%	26 25.0%	2 1.92%	Moderate

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
3.	The students are able to present their work of environmental projects to community and public such as inventing pollution- reducing tool, reducing pollution campaign and introducing the environmental-related matter to the community.	11 10.57%	52 50%	26 25.0%	15 14.42%	Moderate

From Table 11, it was found that all items of the performance level of environmental education management under the area of students' achievement were rated moderate by the respondents. All aspects of students' achievement were almost equally rated. (49.03% and 50%)

4.1.3 The problems of environmental education management

The researcher has presented in 7 parts.

1) The problems rated to Philosophy and school goals

TABLE 12 Number, percentage and mode of problem level related to the area of philosophy and school goals.

No	Item	Problem level				Mode
		High	Moderate	Low	Never	
1.	Lack of surveying real situation for planning the environmental project in school.	8 7.69%	58 55.76%	30 28.84%	8 7.69%	Moderate
2.	Lack of brain storming the idea of personnel who taking responsibility in environmental tasks.	15 14.42%	50 48.07%	31 29.80%	8 7.69%	Moderate
3.	The environmental policy is not clear and cannot take action plan.	9 8.65%	51 49.03%	35 33.65%	9 8.65%	Moderate

From Table 12, it was found that the problems about lack of surveying real situation for planning, lack of brainstorming, and the unclear environmental policy were rated moderate by the respondents. The highest number of respondents rated the first problem as moderate (55.76%).

2) The problems related to environmental curriculum and learning process

TABLE 13 Number , percentage and mode of problem level related to the area of environmental curriculum and learning process.

No	Item	Problem level				Mode
		High	Moderate	Low	Never	
1.	Lack of training in environmental curriculum	15 14.42%	43 41.34%	32 30.76%	14 13.46%	Moderate
2.	Lack of knowledge, understanding and right method to creating lesson plan	9 8.65%	42 40.38%	36 34.61%	17 16.34%	Moderate
3.	The contents in curriculum are not compatible with local community and current social condition.	9 8.65%	45 43.26%	31 29.80%	19 18.26%	Moderate
4.	Using over time in extra-activities, so the teaching in class is not on time.	9 8.65%	43 41.34%	35 33.65%	17 16.34%	Moderate
5.	Lack of curriculum evaluation	14 13.46%	41 39.42%	37 35.57%	12 11.53%	Moderate

From Table 13, it was found that most of the respondents rated the problems related to the environmental curriculum and learning process as moderate. The highest number of respondents rated item 3 (The contents in curriculum are not compatible with local community and social condition.) as moderate.

3) Environmental personnel

TABLE 14 Number , percentage and mode of problem level related to the area of environmental personnel.

No	Item	Problem level				Mode
		High	Moderate	Low	Never	
1.	The personnel are not cooperated in environmental activities	2 1.92%	42 40.38%	42 40.38%	218 17.30%	Moderate
2.	The personnel whom trained in environmental educational courses could not expand the knowledge to people around them	7 6.73%	44 42.30%	37 35.57%	16 15.38%	Moderate
3.	Lack of praising the teachers who works for environmental task.	8 9.67%	43 41.34%	40 38.46%	13 12.5%	Moderate

From Table 14, it was found that all personnel problems about uncooperated personnel, no transmission of personnel's knowledge to colleagues, and lack of motivation to the hard-working teachers were rated moderate by the respondents.

4) Teaching and learning resources

TABLE 15 Number , percentage and mode of problem level related to the area of teaching and learning resources.

No	Item	Performance level				Mode
		High	Moderate	Low	Never	
1.	Lack of supporting the media, equipment for environmental task.	1 0.96%	41 39.42%	36 34.61%	22 21.15%	Moderate
2.	Any areas are not suitable for arranging environmental activities.	2 1.92%	37 35.57%	34 32.69%	31 29.80%	Moderate
3.	Limiting the financial for environmental projects.	17 16.34%	32 30.76%	31 29.80%	24 23.07%	Moderate

Table 15 showed that all problems related to teaching and learning resources in terms of lack of media and equipment support, unsuitable of space for environmental activities, and financial limit for environmental projects were moderately rated by the respondents with 39.42%, 35.57% and 30.76% respectively.

5) The problems related to management system

TABLE 16 Number, percentage and mode of problem level related to the area of management system.

No	Item	Problem level				Mode
		High	Moderate	Low	Never	
1.	Performing time for environmental activities is less.	10 9.61%	45 43.26%	39 37.5%	10 9.61%	Moderate
2.	Lack of Continuously performing of environmental activities	16 15.38%	46 44.23%	38 36.53%	4 3.84%	Moderate
3.	Lack of evaluation in environmental project.	14 13.46%	41 39.42%	40 38.46%	9 8.65%	Moderate

Table 16 showed that all problems related to management system were rated moderate by the respondents. The specific problems were time limit for environmental activities, lack of continuous environmental activities, and lack of environmental project evaluation which were rated at 43.26%, 44.23% and 39.46% by respondents respectively.

6) The problems related to students' activities

TABLE 17 Number , percentage and mode of problem level related to the area of student's activities

No	Item	Problem level				Mode
		High	Moderate	Low	Never	
1.	Lack of budget to encourage students' activities	17 16.34%	31 29.80%	36 34.61%	20 19.23%	Low
2.	Lack of head teacher to cooperate in environmental activities with local community	26 25.0%	37 35.57%	31 29.80%	10 9.61%	Moderate
3.	Lack of sponsor , organization to support environmental activities	15 14.42%	50 48.07%	30 28.84%	9 8.65%	Moderate
4.	Different of moral, local cultural, so they cannot participate in environmental activities with community.	6 5.76%	25 24.03%	41 39.42%	32 30.76%	Low

From Table 17, it was found that all problems related to student's activities were equally rated as moderate and low. The moderate level of the problems was the lack of environmental activity cooperation of the head teachers, and lack of financial support for environmental activities. The respondents rated the problems as low in the area of the shortage of budget for student activities because of their differences in moral and cultural standard.



7) Students' achievement

Table 18 Number, percentage and mode of problem level about students' achievement.

No	Item	Problem level				Mode
		High	Moderate	Low	Never	
1.	Lack of instrument to evaluate the practical manner of students	17 16.34%	47 45.19%	29 27.88%	11 10.57%	Moderate
2.	The students do not cooperate in environmental activities.	10 9.61%	37 35.57%	44 42.30%	13 12.5%	Low
3.	The Students have not knowledge and right method to treat with environment.	9 8.65%	53 50.96%	32 30.76%	10 9.61%	Moderate

Table 18 showed that the respondents rated the problems related to student achievement as moderate in the specific problems of lacking of instrument to evaluate students' practical manner and students' lack of knowledge and method to deal with environment. And most of them rate the problem low in terms of no cooperation of students in environmental activities.

4.1.4 Administrators' suggestion

Interviews with administrators and teachers was conducted to collect supplementary information so as to make this study reliable and comprehensive. The data collected from particular questions are as follows:

**1. How about the environmental education management in your school?
good or not.**

There are 86.63 percent of administrators answered “it was good” only 13.46 percent answered” it was not good” because:

1. The school was located near the pig farm that caused bad smell.
2. The environmental projects were not clear, it too much focused on the academic project.
3. Lack of responsible personnel.
4. The environmental projects were not continuously.

2.To improve the performance of environmental education management.

Do you know how to do ?

1. There should have been environmental work evaluation every semester.
2. Training the personnel who took responsibility for environmental projects.
3. Arranging the extra curricular activities relevant to students’ interest.
4. Wrote the clear project and assigned teacher to take action.
5. Created the daily environment to be the right method for practical purpose.
6. Determined the final date of the project.
7. Assigned the students to take action in environmental activities.
8. Promoted the personnel to training in environmental education.
9. Set special budget for environmental task.
10. Wrote the development plan in the long term.

11. Made the performance of environmental project relevant to the activity of community.
12. Organized the contest on environmental projects.
13. More public relation.
14. Provided more media and documents.
15. More integration in any subject.
16. Evaluated and improved the performance of environmental project in school and community.
17. More support from administrators.

4.2 The result of data analyses from observation by the researcher.

By observing school environment and its atmosphere, the researcher found the following observations:

- 4.2.1 The class-room buildings were new, strong, safe and clean.
- 4.2.2 The classrooms were new, safe, clean and neat.
- 4.2.3 The teacher's office was safe, appropriate, clean, wide and neat.
- 4.2.4 The light in classroom was sufficient and suitable.
- 4.2.5 The computer room was modern and attractive for study.
- 4.2.6 The corridor was clean, neat, strong and safe.
- 4.2.7 The Bathrooms / toilets were clean, new, strong and sufficient.
- 4.2.8 The canteen was clean, convenient, strong, new, wide and safe.
- 4.2.9 The playgrounds were sufficient, clean, safe and wide.
- 4.2.10 The resting area was sufficient, clean, safe and wide.

- 4.2.11 The flower plant / decoration plants were plenty, beautiful, safe and attractive for study.
- 4.2.12 The big trees were many and made an attractive atmosphere for study.
- 4.2.13 The used water drainage was clean, no pollution and safe.
- 4.2.14 The rubbish discard bins were sufficient, convenient, classified and always clean.
- 4.2.15 The garbage disposal was clean, classified, stickles and convenient.
- 4.2.16 The drinking water was clean, sufficient and safe.
- 4.2.17 The consuming water was clean, sufficient and safe.

4.3 The data analyzes from documentary resources.

The documents that researcher used for investigation were:

1. The performance semester calendar of year 1999-2000.
2. The environmental projects.
3. The administrators' meeting reports
4. Report of evaluation of environmental project
5. The journal of school

It was found from the documents that the private vocational schools conducted many kinds of environmental activities and projects as the following lists:

4.3.1 The titles of projects and activities:

1. Public area development
2. Buildings improvement
3. Planting for His majesty
4. The classroom cleaning contest
5. Media and equipment services
6. Academic Day, Sciences Day
7. Developing your personality
8. Sport relations
9. Beautiful school with our hands
10. Improving the learning process, child centered.
11. Teaching by religious method
12. Thai cultural conservation
13. Quality assurance for education
14. The graduated day gathering
15. Supporting democratic way
16. Saving energy
17. The white school (Anti-drug campaigns in educational institutions)

4.3.2 The objective:

1. Creating the good attitude and spiritual for community utility.
2. Decorating the school for the good atmosphere and relevant to learning process.
3. Making goodness for His Majesty in the important days.

4. Creating awareness of conservation.
5. Creating a of desirable characteristic of cleanliness.
6. Providing the appropriate media for learning and instruction.
Application to use media with high utility.
7. Supporting students to create their works and present to the public.
8. Developing ability to work by them.
9. Support students to present themselves with right method,
readership styles and unity for organization.
10. Creating the responsibility for their organization
11. Improving the learning process relevant to community and current
social condition
12. Creating ethics and the right practical manner for daily life.
13. Making the confidence with Thai culture.
14. Upgrading educational management.
15. Creating students' concept of improving themselves with
continuous confidence in their school.
16. Giving advice about the new election method.
17. Creating awareness of conserving energy.
18. Joining the families of students in battling against drugs.

4.3.3 Target

1. The personnel, students had good awareness in conservation.
2. Cooperating and connecting with the community.
3. The personnel, students had desirable characteristics.

4. The school had good environment all atmospheres.
5. The personnel had the potential to develop their works.

4.3.4 Personnel Assignment

1. Personnel; all of teachers and students were assigned to participate in the projects.
2. Material; materials for activities were supported by each faculty and building management department

4.3.5 The Venue for activities

In school and surrounding area.

4.3.6 Activities and performance duration

Some projects were the pilot ones. I was the short-term program. If the evaluation were successful, they would continuously operate i.e. developing your personality, saving energy and contesting the cleanliness. Some projects were set in the annual calendar i.e. providing the media, equipment, sport relation, academic day and the graduate day meeting.

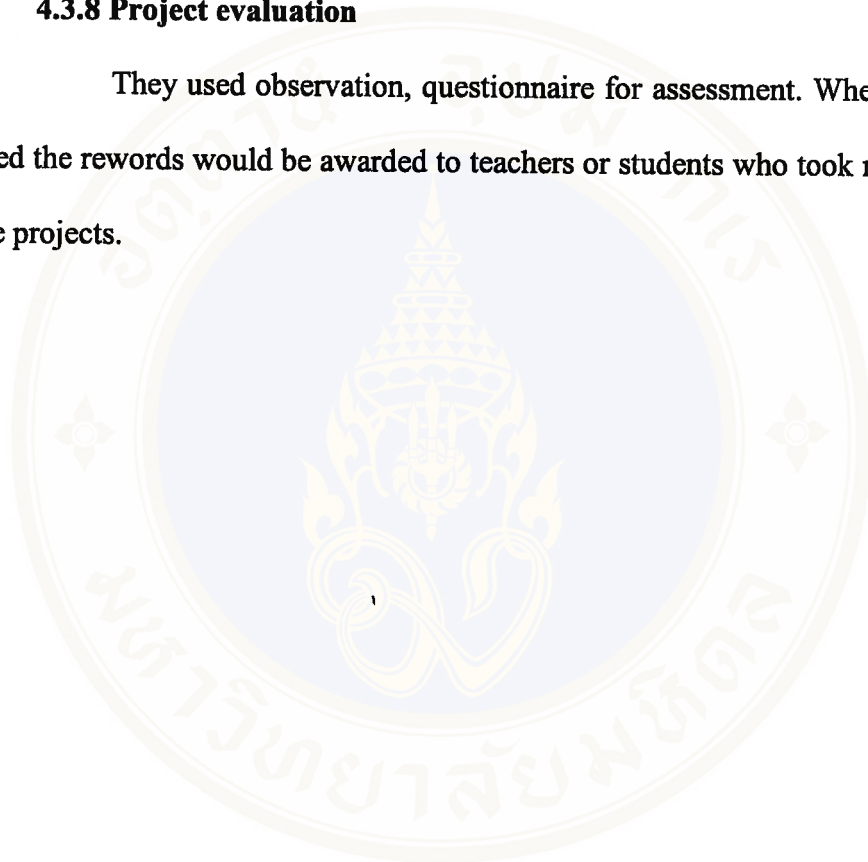
Some projects were operated on importance days or assigned by originated authority i.e. developing public area, planing for his majesty, quality assurance in education, Thai cultural conservation and supporting democratic way.

4.3.7 Budget

Total budget was dependent on the size of project. And some projects had sponsor i.e. government.

4.3.8 Project evaluation

They used observation, questionnaire for assessment. When the project finished the rewards would be awarded to teachers or students who took responsibility for the projects.



CHAPTER V

DISCUSSION

From the data analysis on environmental education management in private vocational school in Nakhonpathom province, the research instruments include:

1. The questionnaires for administrator and teachers about the general status, the state and problems of environmental education management, and suggestions.
2. Observation form of environmental education management adapted from standard criterion of selecting environmental education in elementary school.
3. Documentary analysis form adapted from environmental education management plan in school.

These will be discussed as follows:

5.1 The philosophy and school goals about environments.

Most of the respondents rated the success of environmental education management at the moderate level of both performance and problem aspects. From the findings, the schools acknowledged of environmental policy from related agencies such as municipality, Ministry of Education and department of private education and then the administrators would assign policy to teacher who took responsibility for environmental projects. Environmental education is considered important for environmental management. Although, the focus of vocational education is aimed to

improve knowledge, skills and attitude to work in any careers, we cannot refuse the responsibility for environmental problems. To educate learner to realize the importance and need of environmental preservation, the administrators must directly take this responsibility because it is their role. Thongchai Santiwong (1992:58) said that the administrators, roles are involving two kinds of management: the internal management and external management. The external management dealt with analysis of the policy of state, economic, social and politics. These are changing all the time but they affect the organizations. So the administrators must have vision and can estimate what will be happening. And then they can select the efficient plan to make the high benefit for their organization. In this case, the schools' administration must respond to environmental policy of state and local for making confident in educational customer.

The success of environmental management must depend on many factors such as surveying problems, readiness and needs of environmental management in school and local community, and they must have ability to analyze the cause of environmental problems or policy to make action plan.

All these issues, the school faced some problems such as: lack of surveying real situation for planning, lack of brain storming and the unclear environmental policy. However, these are the first starting and they may get better with cooperation of personnel in schools. This coincides with the research by Wilailak Ratanapeantamma (2000:112) in finding that most awarded schools have their plans in arranging environmental state in schools. They include the policy in the school environmental management. Teachers have collaborated with students, and janitors in arranging environment favorable for learning and teaching environmental education.

And Bellamy (1995:65) says that policy on environment can contribute to the effective management of school environment. Environmental education does not only mean the students' awareness but also the students' conservation behavior.

5.2 Environmental curriculum and learning process.

Most of the respondents rate their performance in curriculum and learning process area at the moderate level. But some activities are at the high performance such as encouraging involvement of students in school's environmental projects such as tree planting, surrounding cleaning activities and energy conservation. That coincides with Nuttara Thankham (2000:96) who found that environmental activities of school that promote real practice face the real problem and environmental education will create learning in environmental problems and making awareness in preservation.

In addition, environmental education teaching and learning activities are based on the content of life experience subject as published by the National Primary Education Curriculum B.E.2521 (updated B.E.2533:147). In this subject, the content embraces environmental content of all levels, aiming to create understanding, skill developing and behavior changing in dealing with environment. Like many countries as Australia, New Zealand, Japan, Singapore, Malaysia, China and Laos (UNESCO: 1981), Thailand has included environmental education content to mix up the original content. The curriculum gradually emphasized environment awareness. Its aim is to bring concept, understanding and awareness in environment. According to the report of General Education Bureau and USAID in Thailand (1991), school environmental

management can provide students with experience to develop common sense, value, understanding and right behavior in solving environmental problems.

From the finding, the school integrated environmental content in related subjects, encouraged students to discuss on environmental problems taking place in school community and society. The finding from research conducted by Hasly (1975:254) state that teaching environmental education by taking students outside classrooms compared with using slides and tape recorders results in the increase of point nearly the same level. But with the two styles of teaching, the students can get highest points. According to the study by Noeske (1975:197) in comparing students' attitudes with different styles of teaching, students taken outside classrooms can develop more positive attitudes. Also as cited by Schwaab (1976) teaching environmental education in the open air site brings the best result. Kosin Rangsiyapam (1978) likewise, found that the most effective approach to environmental education teaching is to get students to the real problem in a real place.

Using various teaching techniques, are the strategy of teaching such as group process, arranged board presentation of the students' work, provided the contest of motto writing for preservation, organized exhibition., room-contesting for the best one. Many scholar like Vinai Veeravatnanond (1989:123), Prajuabjit Kamjaturus (1987:72) propose teaching outside classrooms, using slides, transparency, initiated situations, role plays, experiments discussions and etc. The degree of students' understanding depends on teachers. It is teachers who must appreciate the environment. Teachers' techniques must be effective and they must be well equipped with knowledge.

As selecting economical materials and equipment for teaching-learning materials that cause no harm to the environments, most of schools used package media such as VDO and postcard. It is different from the research by Sunantha Nareeruck (1994:121) who stated that most schools promoted teacher to produce their own media. Teachers should make use of existing materials available. And Noree Thepmontha (1995:112) found that teachers and students cooperatively developed instructional materials in vocational school, which was aimed at helping enlarge knowledge from all lessons. However, making own media or using package media are the instructional materials that can create the efficient learning. The students will be interested in environment and can get concrete idea rapidly. The office of National Primary Education Commission(1985:56) also states that teaching media can create more vivid understanding to students in a very concrete way.

As invitation of external and local resource person to lecture to students on the environmental topics, study tour in local community could be organized sometimes. They should have more role in these activities. If school would closely relate to communities, community members feel that they are cared for. Thus it is an effective way in running activities. Almost schools participate in these activities by promoting academic learning and facilitating in using spaces. Inthira Thesvisal (1991:147) found that to play a role as a community co-ordinator, administrators should have acted as a person requesting joining hands from communities and meanwhile giving help back to communities. Most activities with community are tree-planting, publishing environment document , cleaning the important places and supervising work operation. As administrators act as good examples to follow other personnel are encouraged to pay more attention to environmental issues.

And Saowanit Thongmul (1993:125) said that leadership and cooperation of the administrators signified the prosperity of community. Besides, cooperation with the community can get rid of conflict and create credibility in school personnel as a whole.

5.3 Environmental personnel.

As far as environmental personnel is concerned, most of the respondents rated their performance as moderate. But some activities are at the low level such as supporting teachers to participate in environment activities conducted by other agencies that organized out of school activities and invited the state and private agencies to get involved in environments in terms of lecturing to teachers and students. This supports the research by Noree Thepmona (1995:93) and Suda Prayongphan (1996:114) who found that the problems perceived as serious problems by both the administrators and teachers are lack of well-trained personnel in environmental education and lack of budget for teacher training in instructional materials development.

It is considered that these activities are important for development. It will create the efficient human in their works. There is research by Dara Crusong (1993) who found that the desire of private teacher in training environmental education were at the high level. So the school's administrators should support this program because the teacher who are well trained will expand their knowledge to other teachers and create the well instructional process to their students in preservation as a whole.

In addition, supporting teachers who create the environment works in terms of upgrading their position, praising or rewarding teachers who successfully perform

their environmental works and giving assistance and suggestion to teachers for solution in environmental education problems should be well recognized. These are the important role of administrators because these activities will make teachers proud and their confident to think environmental works continuously. This is confirmed by Wasana Na nakorn(1990:118) who find that if administrators give moral support to teachers, assign appropriate tasks and praise for the good job, the overall operation will go on smoothly. Teacher will feel secure and confident when administrators sighted the work being done. As cited by Wilailak Ratanapeanhamma (2000:174), teachers are assigned to teach environmental education according to their skill and capability. They are encouraged by administrators in running all projects as well as in visiting activities. Teacher with outstanding performance will be complimented.

5.4 Teaching and learning resources.

Performance in making teaching and learning resources available was rated high by most of the respondents. The school organized many activities such as having specific plan for using area or space in school, decorating the surroundings of workshop, classroom, teachers' room ,students' area and miniature garden, constructing and renovating the classroom building with the emphasis on ventilation, wind direction and light, and providing good management of school resources and facilities such as electricity, water supply, chemical and drainage system. Many scholars believe that environment has much influence upon behaviors if the environment is well arranged. Human behavior can be shaped into a desirable way. Teachers are not the key factor to bring students' growth in knowledge, but building site as well as school environment to help contribute students' physical, mental,

spiritual and social development. This agreed with Wilailak Ratanapeanthamma's (2000:114) study which found that most award schools had their plans in arranging environmental state in school. They include the policy in the school management. Teachers collaborated with students and janitors in arranging environmental favor for learning and teaching environmental education. Environmental state is established in well-decorated areas. Plants are lined with aisles, and veranda of the buildings. In some awarded schools, environmental state is established in a good order. And by observing school environment and atmosphere, the researcher found that the school faced some problems such as the toilets were found rather dilapidated, most school did not separate garbage disposal and they had no well-waste water drainage. These problems caused by the constraint of location and unique area (the schools have nearly located the livestock farms).

5.5 Management system.

The most important factor in environmental management largely depends on administrators' management. If the administrators are really interested in environment, they will get full support.

From the findings, the most of school are at the moderate level. They have implemented various activities such as preparing a working calendar of environmental programs, creating a school charter for environmental education projects, providing data-base for environmental planning in term of producing books, periodicals and knowledge transmission through web site, providing evaluation and follow-up the tasks or program assigned to the teachers, and providing continuous public relations about school environments. But many school are faced with the problem of less time

for performance activities, lack of continuous, lack of evaluation and lack of public relation their environmental works.

Recruiting personnel on the criteria of responsibility in environmental tasks should consider by interesting and ability. From the documentary analysis, it found that the committee in environmental project came from their position, from inviting for. These are problems of teachers who have load in teaching, busy with their routine work and the time constraints.

To solve this problem, the school administrators should assigned responsibility to environmental education teachers mostly depend on their skill and the capability. This confirmed by Wilailak Ratanapeantheema (2000:128) in the award school, administrators pay much attention to environmental course-relate activities. Teachers are well prepared to design any task of activity. They are providing with such a facility as document teaching media and budget. They are support, praised and admired for their good work.

In the providing evaluation and follow-up the environmental plan and the providing database for environmental planning: from documentary analysis found that the school set up policy on environmental education as apart of the school project. In the project, have selected the committee so this can follow up and evaluate. However, the researcher found that they have less result of evaluation to plan for next environmental projects. Most of projects are assigned from policy of originated authorities. They use less database from surveying in the real problem or improving the old projects to continuously. To solve these problems, the school administrator should depend on many techniques to support strategic of performance plan. The Supervisor of Secondary Education (1993:49) have presented the method to stimulate

the motive of personnel: open the chance for participate, write plan, brain storming, act as committee, meeting conference to share goal of development.

In the last activities that school should more support is providing continuous public relations about school environments; in the findings they had told the environmental activities by declaring in the morning, on board presentation, in the school meeting. They did not organized continuously and not frequency. So this causes school should more announcing their environmental activities managing these database. Sa-ad Thansupaphol (1997:84) said that relation public wills much more quality, they must organized continuously and people will give the knowledge, understanding and cooperation to do with together.

5.6 Students' activities.

Most of schools are at the moderate level. They have managed the providing sufficient hygienic food and nutrition, providing the health examination and services on recreation and student welfare, others, giving accessibility for students to participate in environmental activities, praising and rewarding students who work for the environmental programs.

Some activities, the school should more support such as establishing environmental groups or clubs. It's not clarity and less time to organize with out school. These are caused of the teaching activities use more time and it affection students for do extra-activities in community. Most of students are members of community when they finished their classes they will hurry to go home or anywhere not meeting in the clubs or groups. The solution this problem is adjusted the instructional process. They should more time to do extra-activities and teachers could

evaluated by students' behaviors to act any activities. Such as, school should organized the clubs i.e. music club, environment clubs, academic clubs, etc., these are relevant with interesting of students. And the school should organize the contesting of the best clubs for community. When activities finished, they praise are given award to students these are makes confident and make a good example for other students. This confirmed by Nuttara Thankham (2000:193) found that schools have reward in environment, the students are proud that they cooperated in any activities, and when visitor come their school and praise them. They had more frequency to do and could applied to do in their lives.

5.7 Students' achievement.

All of activities that school are managed to make the final result of learner. So the indicator of 6 aspects are this "Students' achievement" From the findings, the schools are at the moderate level. The results of learning such as the students have appropriate response to their environment (such as to help saving water and electricity and making no damage to school assets), the students are interested and voluntarily participate in environmental activities and the students are able to present their works of environmental projects to community and public (such as inventing pollution-reducing and introducing the environmental –related matter to the community).

Some activities school should more support such as taking students' performance works to community because these are occasion of school to announce their works or awards, they could persuade the community to participate in planning and developing environmental education management. These are important works and should gradually organized. This cited by Sakorn Kooncheun (2000:94). She studied

the potential role of school committee and found that the knowledgeable persons had less knowledge, understanding and ability to initiate on their roles in developing education. All most of them supported the general education such as to distribute information, participate in school activities, taking part of students' behavior and focus on support fund. The problems of using local wisdom are lack of local wisdom, the schools provided less information about educational instruction and didn't give them opportunity in the participation.

All the practice level to lead to participation, basic culture, problems and context of community must be taken into account.(National Education Act B.E.2542:57) Tangible practice directions are as follows:

- 1.) Teachers and educational institution administrators should approach the community not only demonstrate the idea of progress but also communicates new educational objective and school demand to the community.
- 2.) Attitudes of administrators and teacher toward community and outside social group should be sincere and democracy i.e. respects community wisdom.
- 3.) Belief and faith of community to school i.e. unity of teacher, efficient teaching and learning.
- 4.) Schools are made into community technical sources, providing library service, informative document, technical research and technology appropriate for the community i.e. environmental preservation project.
- 5.) To appoint educational or school committee. These should be parents, community leader and local people with potential in participation.
- 6.) The communication, dissemination and public relation: to create good understanding towards participation.

7.) To foster relationship with community through specific method of each teacher.



CHAPTER VI

CONCLUSION

This chapter comprises the summary, the conclusion and recommendations further development application and future research.

6.1 Summary

Thailand are now confronting a severe environmental problem. The rapid crisis expansion, including the decrease in both quantity and quality of natural resources, has doubled its disaster continuously. When the root of environmental problem is being probed, humans are found to be the most important factor in creating such problem. Environmentalists indicate that to solve the environmental problem must be solved by taking many measurements simultaneously. One way to solve the problem is to educate people to realize the importance and need of environmental conservation. Therefore, the real solution is closely associated with the right knowledge, appropriate values and beliefs of the people. All attempts should be done with people of different ages, particularly students groups who grow to be adults in the future.

The government and the authority in education of Thailand have realized the importance of this problem. They therefore, initiate many projects concerning students' awareness and responsibility for protecting and preserving the environment in their own communities. Never the less, the environmental education management

did not reach the target because it is found that the basic understanding and attitude of environmental educators are not compatible, which leads to lacking concept harmony and cooperation even though there are a number of environmental personnel and specialists. This can be seen that different schools perform environmental education differently according to their interests and realization of importance. It is so because the schools lack the accurate policies, objectives, plans, systemic projects causing the lack of unity, continuity, coverage about content and environmental education objectives. So the appropriate environmental management is the guideline for the private schools to study adaptation which aspect is coherent to their environment and capacity. This causes consciousness for students: the awareness on responsibility for natural resources consumption. The students will have the awareness of participation in solving environmental problems, which is considered as one way of developing environmental quality leading to their living with quality in communities.

6.2 Conclusion

This research is aimed to study the appropriate state and problems of environmental education management for private vocational schools in Nakhonpathom province. Various aspects to be considered are the philosophy and goal of school, the curriculum and learning process, the personnel, the educational resources, the administration and management, the students' activities and the learning outcome. These aspects are applied from the quality assurance for education of private school. The population in this study consists of school administrators,

teachers who are responsible for environmental education courses in 4 private vocational schools in Nakhonpathom province.

The instruments used in this study for data collection were questionnaires for administrator, teachers; observation check list of general environmental education management; and document analysis form of environmental management project in school to find the performance and problem of environmental management.

The researcher took instruments for try out in private vocational schools in Chonburi province to ensure use them for validity, reliability and improvement of such instruments. And then used the improved instrument to collected data from the real population.

Data analysis was presented by percentage, mode and using content analysis for descriptive presentation.

The findings were:

1. The performance level of environmental education management under the area of philosophy and school goals was rated by most of the respondents as moderate at all items.
2. The performance level of environmental education management under the area of curriculum and learning process was rated moderate except on item that was considered as high level by most of the respondents.
3. The performance level of environmental education management under the area of personnel was rated moderate by most of the respondents except only two items were rated as low.

4. The performance level of environmental education management under the area of teaching and learning process was equally rated as high and moderate by most of the respondents.

5. The performance level of environment education management under the area of management system was rated moderate by most of the respondents.

6. The performance level of environmental education management under the area of student activities was rated moderate by most of the respondents.

7. The performance level of environmental education management under the area of students achievement was rated moderate by most of the respondents.

8. Considering the problems derived from the environmental education management under seven areas, it was found that most of the respondents rated those problems as moderate in all areas and only very few cases under students activities and achievement were rated low.

9. From the researcher's observation, the buildings, classrooms, offices, and school surroundings of the private vocational schools were considered as modernized, new, comfortable, and suitable for teaching and learning.

10. Every school has organized extra-curricular activities related to environmental education projects.

6.3 Recommendations derived from this research.

The success of environmental education management must depend on many factors as recommended below.

1. The administrator is the most important person in schools so the department who is responsible for environmental education management should train the administrator to have knowledge and understand the environmental management aspect so the performances will be achieved.

2. The teachers should act as the guide and supporter who encourage the students to show off their capacity. Also the administrator should support the teachers' role by supporting sufficient budget for better teaching and learning environmental education.

3. The environmental organization of the state and the private sector must support more to training, learning media and personnel for knowledge, attitude and right method of environmental preservation in school.

4. The cooperation of those who are responsible for the environmental education management is also an important factor. The administrators, teachers, students, janitors and the communities should share the awareness, realization, responsibility and participation in the management in order to achieve the environmental education objectives.

6.4 Recommendations for future research.

1. There should be the study the school approach system for preservation by surveying of problem, readiness and needs in environmental education management in school and community.

2. The appropriate environmental education model, which is relevant to the school curriculum, problems, readiness and needs in environmental education management, should be investigated.

3. The sharing of environmental education concept to assign the environmental performance in school should be pursued.

4. The development of personnel' s environmental training in school should be explored.

5. The participation of the school committee in applying local wisdom to the development environmental education should be studied.

6. The investigation of participation problem of other organizations, both state and private sectors for environmental preservation should be conducted.

BIBLIOGRAPHY

- Bellamy, D. (1995). Our world-Our responsibility. Environmental Education, A practical guide. Council for environmental education, Great Britain, p.5.
- Boonprasert, Banchuen. (1991). Social studies instructional activities organization for developing students' awareness of environmental conservation as perceived by social studies teachers at the secondary education level. M.A. Thesis in Education, Chulalongkorn University.
- Buehe, C. (1985). The Status of Indiana Teachers' environmental knowledge and attitude. Terre Haute : Indiana State University.
- Chancana, Charunan. (1993). State and problems of instructional management of population and environment subject, education region 9. M.A. Thesis., Chulalongkorn University.
- Chunkao, Kasem. (1993). Environmental Education. Bangkok : Aksornsayam Publishing.
- Derrah, R.F. (1994). The Status of environmental education in the secondary school of the State of Maine. Doctoral Dissertation, Walden University.
- Duangpansing, Pornthep. (1996). Administrators' role in environmental education curriculum management. M.A. Thesis in Education, Chiang Mai University.
- Environmental Quality Promotion Department. (1992). Enhancement and Conservation of National Environmental Quality Act B.E.2535. Bangkok : Co-operation Community.

- Hasley, W.E. (1975). A Comparison of the methods of instruction in environmental education. Dissertation abstracts International 36 (December) : 3029-3393 A.
- Julasai, Bandit. (1985, June-July). "Environmental awareness implanting for youth."
The Journal of Environment. 15-18.
- Kamjaturus, Prajubjit. (1987). Teaching document in environmental management for school and community (Unit 8-15). Bangkok : Sukhothai Thammathirat Open University.
- Kanjanawasi Sirichai. (1993, February-March). "Theory and research : role and relationship". Educational Research Journal. 16, 31 : 13-19.
- Kimberly, S.E. (1996). EE. Teacher-in-service education : the need for new perspectives. The Journal of Environmental Education, 11-17.
- Kooncheun, Sakorn. (2000). The Participation of the Primary School Committee in Applying local Wisdom to the Development of Instruction in primary school under the jurisdiction of Samut Songkhram Provincial. M.A. Thesis in Education, Silapakorn University.
- Krusong, Dhara. (1995). The desirable of training in environmental education of teacher in private school, Bangkok Metropolis. M.S. Thesis in Environmental Science, Kasetsart University.
- Liou, J. (1993). Environmental knowledge, attitudes, behavioral intention, and behavior of preservice elementary teachers in Taiwan, The Republic of China, Doctoral Dissertation, University of Florida.
- Lozzi, L.(1990). Assessment of learning outcomes in environmental education. Paris, France : UNESCO.

- Ministry of Education. (1992). Environmental education activity management Guideline. Bangkok : A.N.T.
- (1997). The eighth state of education, religion and culture development plan (1977-2001). Bangkok : Office of the Permanent Secretary for Education.
- Na Talang, Akavit. (1986, May). "Youths and genuine heroes in dealing with environmental issues" TEI Membership Note, Thailand Environmental Institute.
- Noisuwan Walaphan. (1997). The vocational education and the environmental education management. Vocational education department, Bangkok.
- Norman, I.K. (1992). A Staff development model for environmental education : Implementation and outcomes. Doctoral Dissertation, University of Kansas.
- Novak, A.M. (1991). Environmental Content, belief and affective conceptual structures and their relationship in the generation of solutions to environmental problems. Unpublished Master's Thesis, University of Maryland, College Park.
- Office of National Education Commission.(1997). The Eight National Education Developing Plan (1997-2001). Bangkok : Office of National Education Commission.
- Palmer, J.A. (1992). Connoisseurship and creativity: Monitoring Creative thinking abilities in primary school children in England. The Journal of Environmental Education, 17-27.
- Palmer, J and Neal, P. (1994). The handbook of environmental education. London : Routledge.

- Paraskevopoulos, S., Padeliadu, S. and Zafiropoulos, K. (1998). Environmental Knowledge of elementary school students in Greece. The Journal of Environmental Education, 55-60.
- Prasittrirat, Orapan. (1989). Research report on learning environmental of graduate students in Faculty of Education, Srinakharinwirot University Bangkok : Educational Technology Department, Faculty of Education.
- Prayongpun Suda. (1996). A study of environmental management in extra large secondary schools under the jurisdiction of the department of general education. M.A. Thesis in education, Chulalongkorn University.
- Prayoosuk Surinaporn. (1997). The opinion's administrators in secondary school for environmental education management, Chachoungsao Province. M.A. Thesis in environmental sciences, Kasetsart University.
- Rangsiyapan, Kosin. (1978). A Study on the dirty problem of environmental pollution. Doctoral Dissertation, Srinakarinwirot University.
- Ratanapeantamma Wilailak. (2000). The appropriate environmental education model for the elementary schools in Bangkok Metropolis. Ed.D. Thesis in environmental education, faculty of Graduate School. Mahidol University.
- Ratanatasanee Temduang. (1992). Man environment and environmental education. Nakornprathom : Mahidol Univesity.
- Ratanatasnee Tenduang. (1996). Man and environment. Nakornprathom : Mahidol University.



- Sanchez, J. (1990). Preparing classroom teachers to be environmental education's in D. Engleson & Disinger (Eds.), NAAEE monographs in environmental education and environmental studies. Vol. VI. Preparing classroom teachers to be environmental educators. (pp.91-96) Tray, OH : NAAEE.
- Samuel, H.R. (1993). Impediments to implementing environmental education. The Journal of Environmental Education, 26-29.
- Saravit Thavorn. (1982). Building and environment administration school. edition Pitsanuloke : Srinakharinwirot University.
- Schmieder, A. and Allen, A. (1977). "The nature and philosophy of environmental education : goals and objective", Trends in Environmental Education. Paris : UNESCO.
- Simmons, D. (1998). Using Natural Settings for environmental education : perceived benefits and barriers. The Journal of Environmental Education, 29 (3) 23-31.
- Soamprayoon Suchart. (1977). Health education teaching. Bangkok : Thai Wattana Panich Printing.
- Srisupan Waraporn. (1996). Environmental Education. Bangkok : O.S. Printing House.
- Srivutiinanond, Sineenut. (1992). "Environment in school" The Journal of Guiding, 63-66: September.
- Stapp, W.B. and Dorothy, A. (1981). Environmental Education activities manual. Michigan: Thomson Shore Inc.
- Swaengsakdi, Montree. (1994). Activities in Environmental Education Provide by Private schools in Bangkok Metropolis. M.S. in Environmental Science, Kasetsart University.

- Tesvisal, Inthira. (1991). The expectation roles of educational administrators in the newly industrialized society. M.A. Thesis in Education, Chulalongkorn University.
- Thankham, Nuttara. (2000). A study of the environmental education management in the out-standing schools in the year 1998. M.Ed. Thesis (Environmental Education), Mahidol University.
- Thepmontha, Noree. (1998). State and problems of instructional management of environment education as perceived by administrators and social studies teachers under the jurisdiction of the vocational education department, Bangkok Metropolis. M.A. Thesis in Education, Chulalongkorn University.
- Thongmul, Saowanit. (1993). A Study on environmental development administration of administrators in elementary schools under the office of Samutprakarn Provincial Primary Education. M.A. Thesis, Chulalongkorn University.
- Toskul, Malee. (1992). Environmental education activity management concept in educational Institute. Paper presented at the conference Hall of the Elementary Education Department, (1992, October 28-29).
- UNESCO. (1977): Regional Meeting of Experts on Environmental Education in Asia, Bangkok, Thailand, November, 1976. Final Report. Paris : UNESCO.
- . (1981). Bulletin of the UNESCO Regional Office for Education in Asia and Pacific. Bangkok, Thailand.
- UNESCO-UNEP. (1976). The Belgrade Charter, Connect, I (1). 1-2.
- Veeravatananond Vinai. (1989). Environmental Education Process. First edition. Bangkok: O.S. Printing House.

_____. (1994). Environmental and Development. Bangkok:
Ruenkaew Publishing.

_____. (1996). Environmental Education. Bangkok: Song Sayam.

Wilson, R.A., Smith J. (1996). Environmental education and education literature. The Journal of Environmental Education. 27 (2), 40-42.

Yamsopa, Oraporn. (1989). The elementary school curriculum implementation conditions and problems regarding the environmental education in elementary schools under the jurisdiction of the Bangkok Metropolitan Administration. M.A. Thesis, Chulalongkorn University.



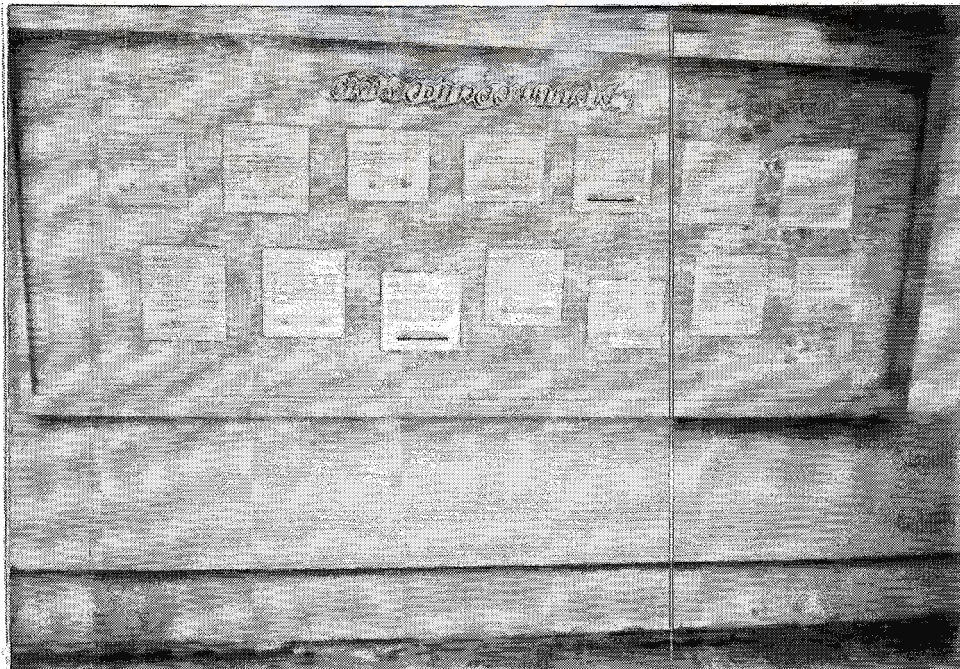
APPENDIX



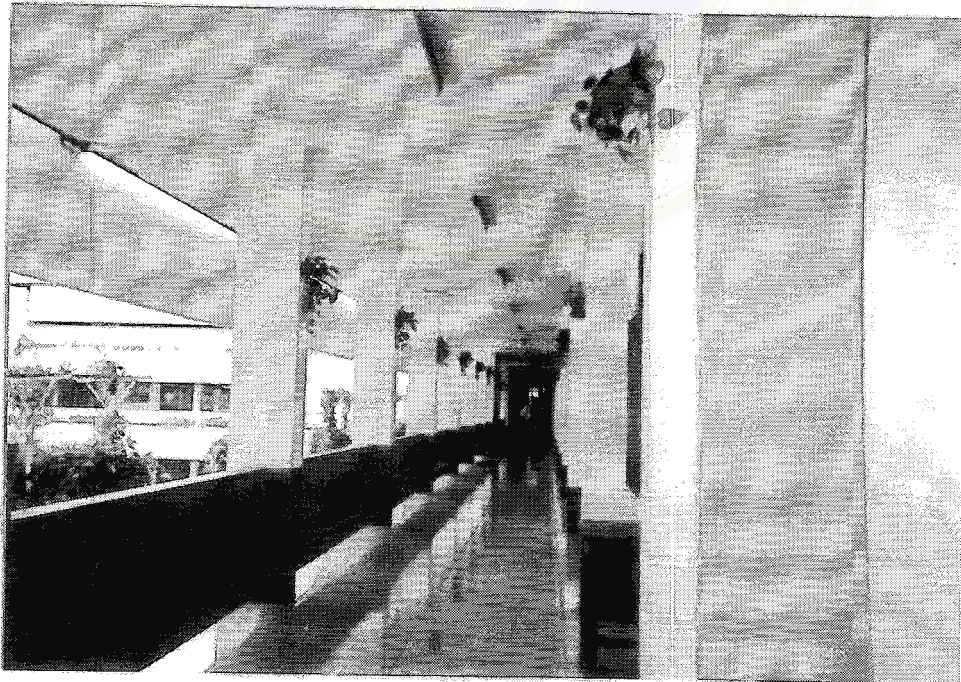
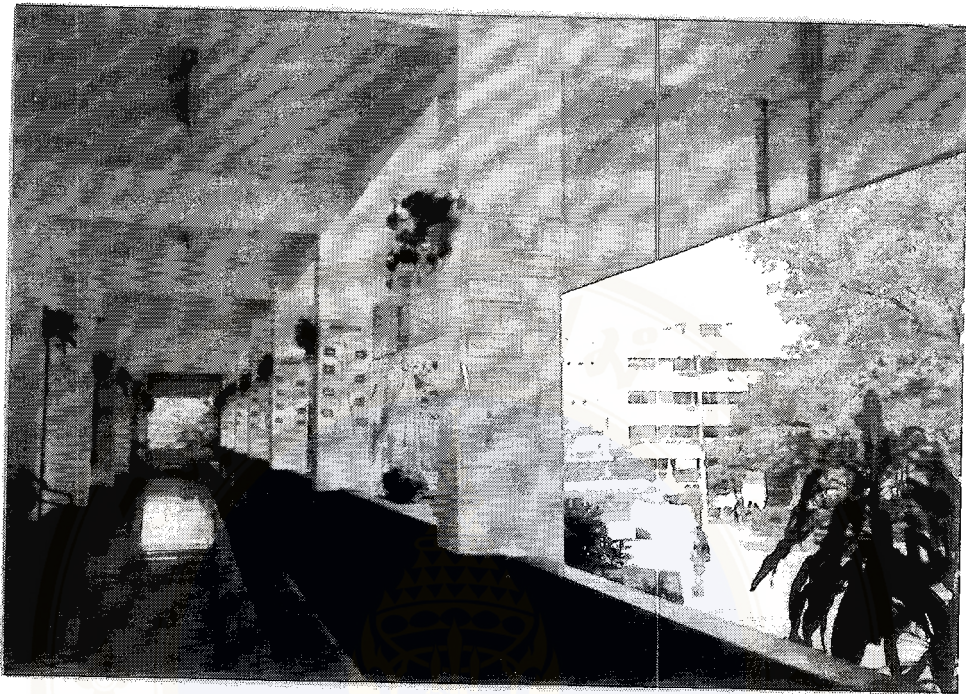
APPENDIX A
Picture Description



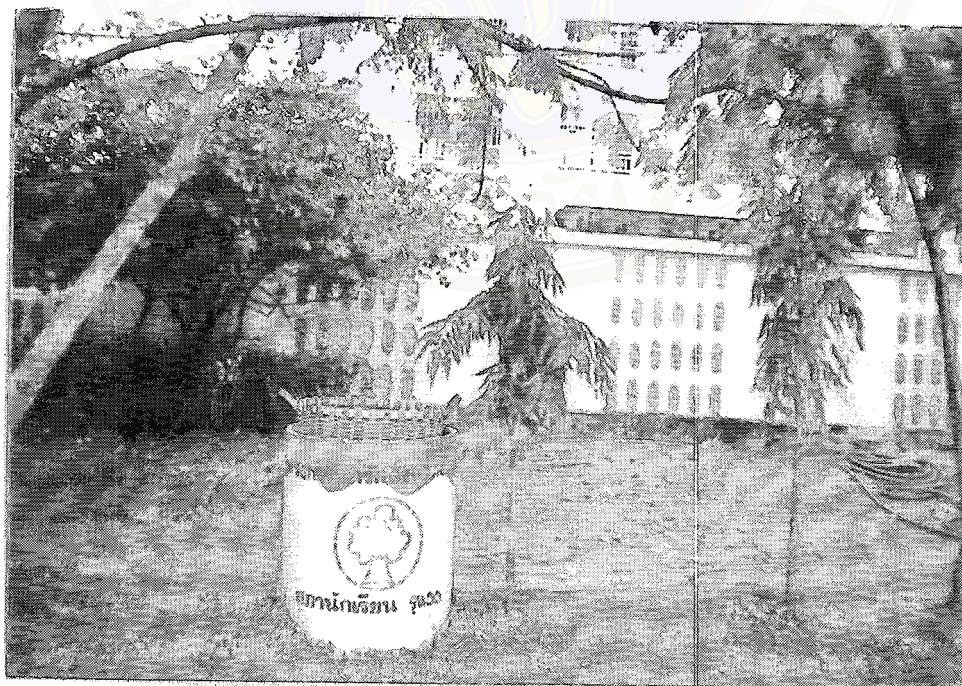
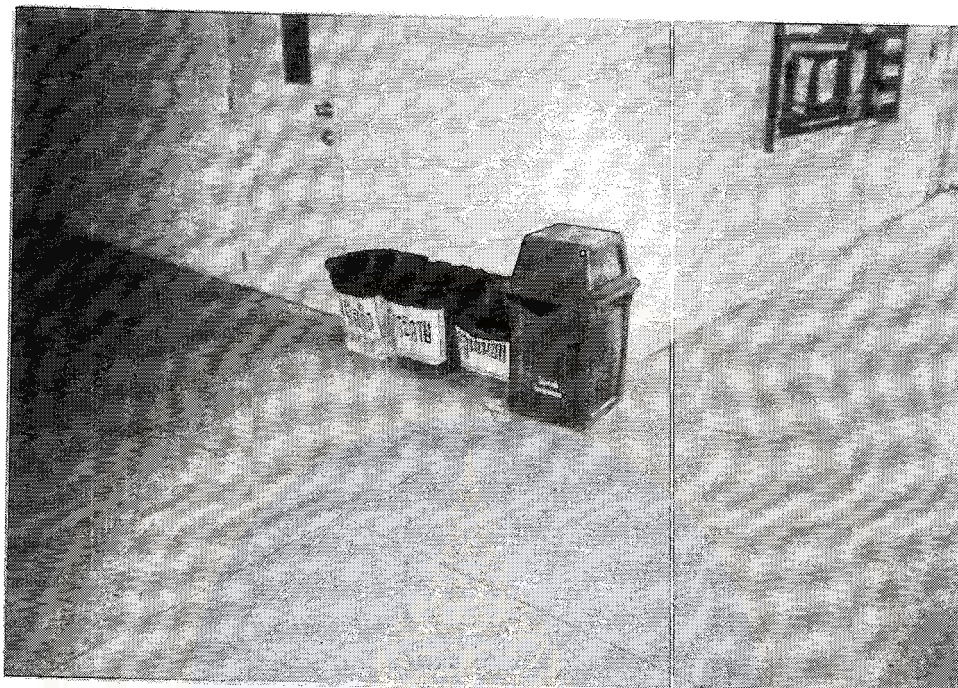
Picture 1: General Environment and atmosphere



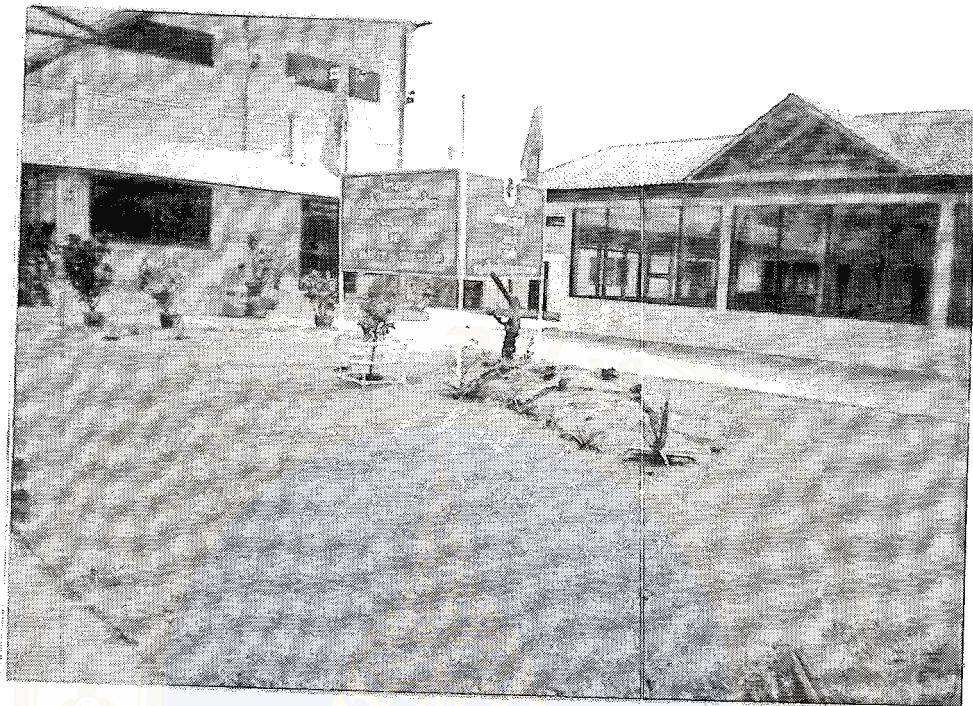
Picture 2 : Board presentation in teaching process



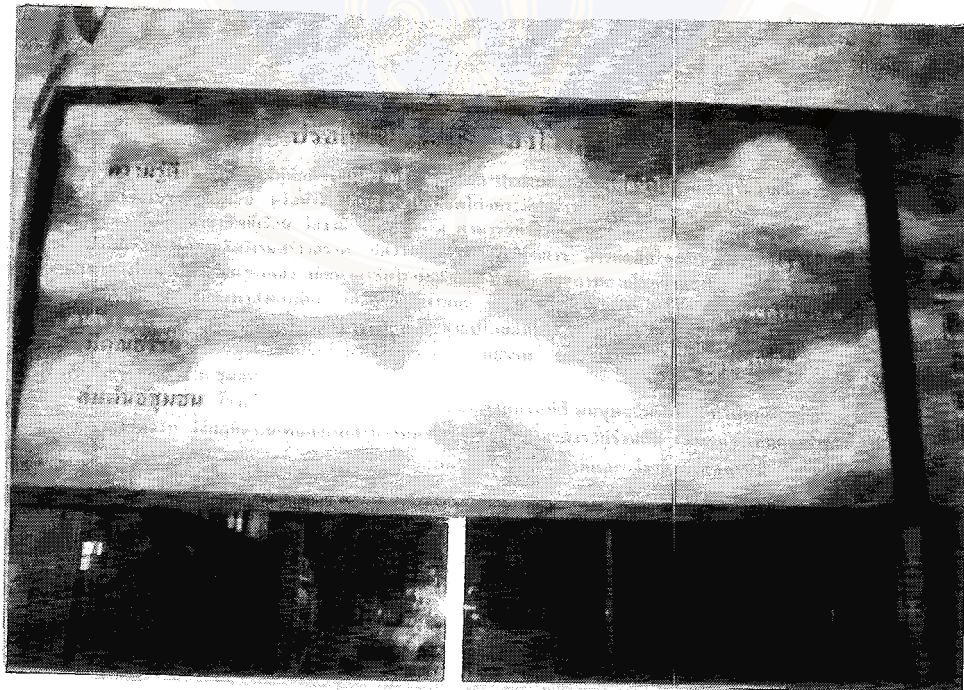
Picture 3: Decorating the class buildings



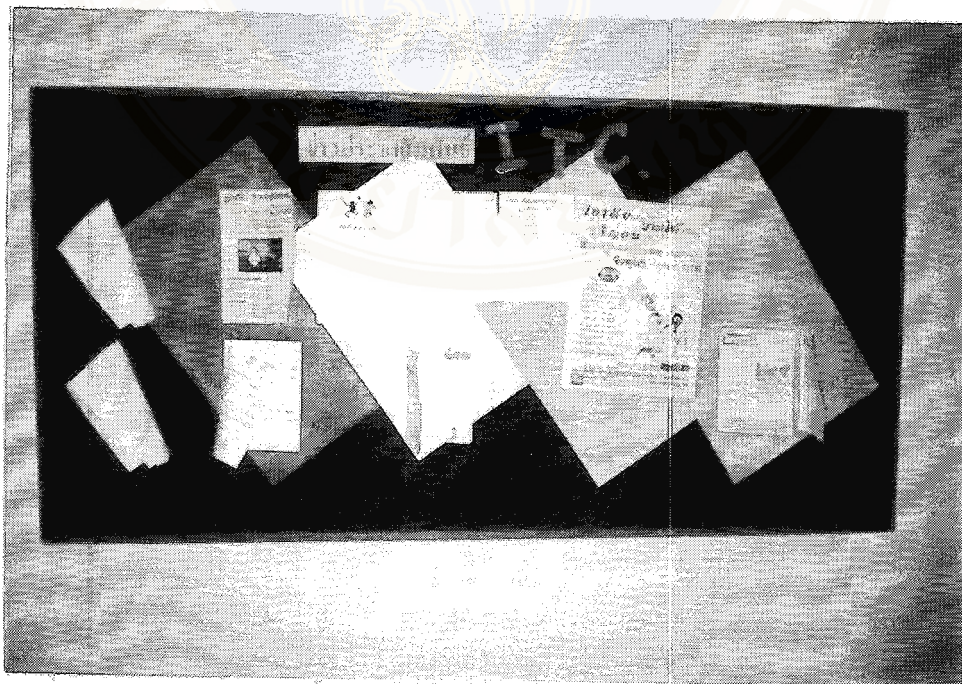
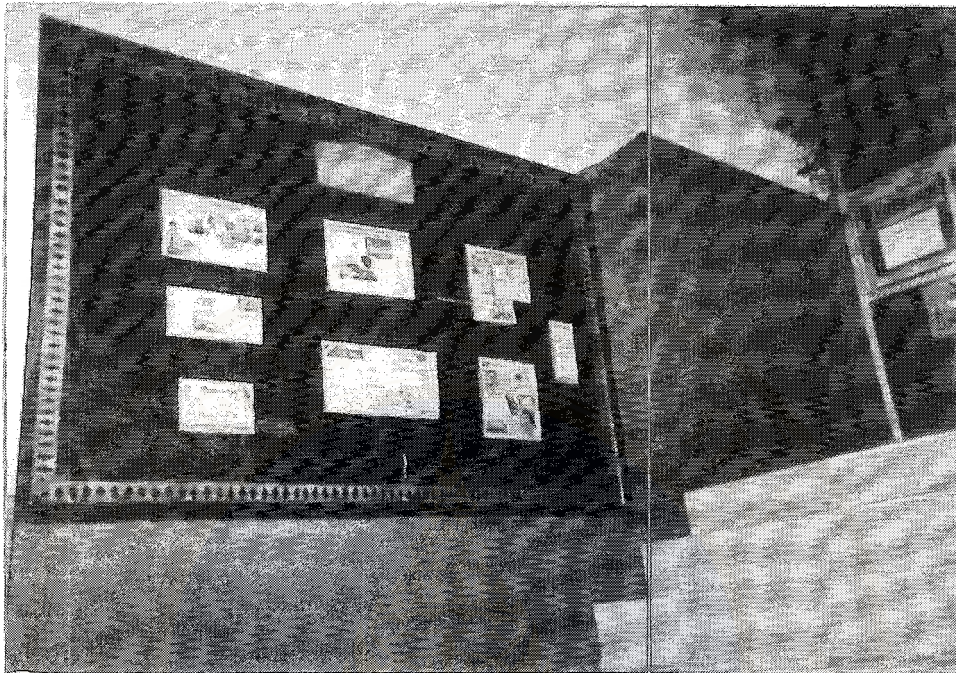
Picture 4: Environmental activities in school



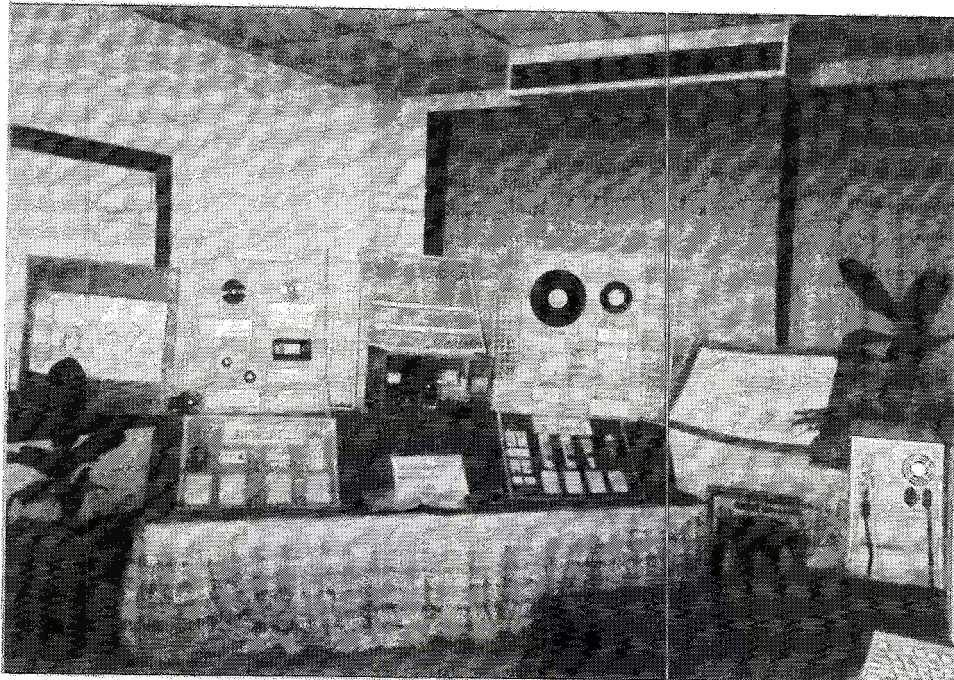
Picture 5: Herb gardens and forest planting



Picture 6: School's philosophy



Picture 7 : Declaring information



Picture 8: Students' work



Questionnaire for school administrators and teachers

Research Topic: The environmental education managements in private vocational school in Nakhonpathom Province.

Directions: This questionnaire has designed to study the state and problems in environmental management. The content were adapted from aspect of quality assurance for education. The findings can be the indicator of in school environmental education management achievement. The research is mainly divide into 4 parts:

- Part I : Correspondent's general status
- Part II : State of environmental management in school
- Part III : Problems of environmental management
- Part IV : Other suggestions' administrators

Thank you for answering the questionnaire according to the fact. Your answers do not affect your works and I will keep them secret and propose the research result in total not individual profile.

Thank you all.

Part I : Correspondent's general status

Directions : Please mark (/) and fill out detail according to the fact in the blanks.

1. Sex
 - Male
 - Female

2. Age
 - 20-25 years
 - 26-30 years
 - 31-35 years
 - 36-40 years
 - 41-45 years
 - over 45 years

3. Education level
 - Lower than Bachelor Degree
 - Bachelor Degree
 - Master Degree and over
 - Other (Please specify)

4. Position
 - Director, Principle
 - Asst. Director, Principle
 - Head of study program
 - Asst. Head of study program
 - Teachers who responsible in environmental education program
 - Other (Please specify)

5. Length of employment
 - Less than 1 year
 - 1-3 years
 - 4-10 years
 - over 10 years

6. Method of acquiring basic knowledge on environmental conservation and development
 - Studying in the school program
 - Reading from documents, textbooks, journal and magazine
 - Joining the conference and seminar
 - Study tour

- Watching TV, listening to radio and searching from internet
- Other (Please specify)

7. Opinions about the implementation of environmental education

- Important
- Not important



Part II State of environmental education management in school.

Direction : From of measuring environmental education state is the measurement form which give you freedom for choosing the alternative relevant to your opinion and feeling. There is no correct answer.

Please mark (/) in the only one column.

No	Item	Performance level			
		High	Moderate	Low	Never
1	Philosophy and school goals about environments				
1.1	Acknowledgment of environment policy from originated authority i.e. municipality , Ministry of Education				
1.2	Determination of environmental policy, goal of environment that serve the community's needs.				
1.3	Studying the environmental situations from the related documents for policy formulation.				
1.4	Analyzing the possibility of putting of environmental policy into practice.				
2	Environmental curriculum and learning process				
2.1	Integrating environmental content of environmental preservation in related subjects.				
2.2	Selecting the economical materials, equipment for teaching learning materials that cause no harm to the environments.				
2.3	Encouraging involvement of students in school's environmental projects such as tree planting , surrounding cleaning activities , energy conservation.				
2.4	Invitation of external and local resource persons to lecture to students on the environmental topics.				
No	Item	Performance level			
		High	Moderate	Low	Never

2.5	Organizing environmental tour.				
2.6	Taking students to participate in environmental activities with local community and NGO				
2.7	Encouraging students to discuss on t environmental problems taking place in school, community and society.				
2.8	Presenting bulletin board and exhibition on environment.				
2.9	Using various teaching techniques in environmental education i.e. group process, solution process				
2.10	Conducting a contest of motto writing, painting about environmental preservation				
3	Environmental personnel				
3.1	Providing the conference, seminar and training for environmental teachers' ion to exchange the experiences and problems.				
3.2	Encouraging the environmental teachers to join in environmental education seminars.				
3.3	Supporting teachers to participate in environmental activities conducted by other agencies.				
3.4	Inviting the state or private agencies involved in environment to lecture to teacher and students.				
3.5	Supporting teachers who create the environmental works in term of upgrading their positions				

No	Item	Performance level			
		High	Moderate	Low	Never
3.6	Praising or rewarding teachers who successfully perform their environmental works.				
3.7	Giving assistance and suggestion to teachers for solution in environmental education management problems.				
4.	Teaching and learning resources				
4.1	Having a specific plan for using area or space in school.				
4.2	Decorating the surrounding of workshop , laboratory , classroom, teachers' room and miniature garden.				
4.3	Constructing and renovating the classroom building with the emphasis on ventilation, wind direction and light.				
4.4	Providing good management of school resources and facilities such as electricity, chemical substance and drainage system.				
4.5	Providing sufficient materials and equipment for environmental developing.				
4.6	Providing space, classroom and library as a searching source for environmental education.				
4.7	Frequently changing and renovation the school surroundings.				
4.8	Managing the budget system so as to efficiently promote the environmental program.				

(cont.)

No	Item	Performance level			
		High	Moderate	Low	Never
5	Management system				
5.1	Preparing a working calendar of environmental program.				
5.2	Creating the school charter for environmental education projects.				
5.3	Providing database for environmental planing in term of producing books, periodicals and knowledge transmission through web site.				
5.4	Recruiting personnel on criteria of responsibility, knowledge and ability for environmental tasks.				
5.5	Providing evaluation and follow up he tasks or program assigned to the teachers.				
5.6	Giving support and advice about the environmental matter.				
5.7	Providing continuous public relations about school environment.				
6	Students' activities				
6.1	Providing sufficient hygienic food and nutrient.				
6.2	Establishing environmental groups or clubs				
6.3	Providing health examination and services on recreation and student welfare.				
6.4	Giving accessibility for students to participate in environmental activities (in and out of school)				
6.5	Praising and rewarding students who work for the environment program.				

No	Item	Performance level			
		High	Moderate	Low	Never
6.6	Providing opportunity for students to participate in training, workshop, seminars and conference relating to environmental program.				
7	Students' achievement				
7.1	The students have appropriate response to their environment such as to help saving water and electricity and making no damage to school assets.				
7.2	The students are interested and voluntarily participate in environmental activities.				
7.3	The students are able to present their work of environmental projects to community and public such as inventing pollution- reducing tool, reducing pollution campaign and introducing the environmental-related matter to the community.				

No	Item	Problem level			
		High	Moderate	Low	Never
1.	Lack of surveying real situation for planning the environmental project in school.				
2.	Lack of brain storming the idea of personnel who taking responsibility in environmental tasks.				
3.	The environmental policy is not clarity and cannot to take action plan.				

No	Item	Problem level			
		High	Moderate	Low	Never
1.	Lack of training in environmental curriculum				
2.	Lack of knowledge, understanding and right method to creating lesson plan				
3.	The contents in curriculum are not according to local community and current social condition.				
4.	Using over time in extra-activities, so the teaching in class is not on time.				
5.	Lack of evaluation curriculum				

No	Item	Problem level			
		High	Moderate	Low	Never
1.	The personnel are not cooperated in environmental activities				
2.	The personnel whom trained in environmental educational courses could not expand the knowledge to people around them				
3.	Lack of praising the teachers who works for environmental task.				

No	Item	Performance level			
		High	Moderate	Low	Never
1.	Lack of supporting the media, equipment for environmental task.				
2.	Any areas are not suitable for arranging environmental activities.				
3.	Limiting the financial for environmental projects.				

No	Item	Problem level			
		High	Moderate	Low	Never
1.	Performing time for environmental activities is less.				
2.	Lack of Continuously performing of environmental activities				
3.	Lack of evaluation in environmental project.				

No	Item	Problem level			
		High	Moderate	Low	Never
1.	Lack of budget to encourage students' activities				
2.	Lack of head teacher to cooperate in environmental activities with local community				
3.	Lack of sponsor , organization to support environmental activities				
4.	Different of moral, local cultural, so they cannot participate in environmental activities with community.				

No	Item	Problem level			
		High	Moderate	Low	Never
1.	Lack of instrument to evaluate the practical manner of students				
2.	The students do not cooperate in environmental activities.				
3.	The Students have not knowledge and right method to treat with environment.				

Observation Form of Environmental Education Management

School.....
 District.....

Observation Guidelines

1. Atmosphere and School Environment

The total conditions of places: buildings, learning buildings, classrooms, bathrooms, toilets, playground, model garden, flower plants, decoration plants, big trees and foot path on class buildings are considered in the following criteria's: neatness, cleanness, beauty, shade, convenience for using, place decoration, hygiene, rubbish discard, used water drainage etc.

1.1 Class buildings

New	5	4	3	2	1	Old
Strong	5	4	3	2	1	Declined
Safety	5	4	3	2	1	Dangerous
Wide	5	4	3	2	1	Narrow
Clean	5	4	3	2	1	Dirty

1.2 Classrooms

New	5	4	3	2	1	Old
Safety	5	4	3	2	1	Dangerous
Wide	5	4	3	2	1	Narrow
Clean	5	4	3	2	1	Dirty
Neat	5	4	3	2	1	Scattered

1.3 Teacher's office

Neat	5	4	3	2	1	Scattered
Clean	5	4	3	2	1	Dirty
Wide	5	4	3	2	1	Narrow
Safety	5	4	3	2	1	Dangerous
Suitable	5	4	3	2	1	Unsuitable

1.4 Light in classrooms

Light	5	4	3	2	1	Dark
Suitable	5	4	3	2	1	Unsuitable

1.5 Verility in classrooms

Good	5	4	3	2	1	Bad
------	---	---	---	---	---	-----

1.6 Path on class buildings

Clean	5	4	3	2	1	Dirty
Neat	5	4	3	2	1	Scattered
Strong	5	4	3	2	1	Declined
Safety	5	4	3	2	1	Dangerous

1.7 Resting Area

Enough	5	4	3	2	1	Not enough
Clean	5	4	3	2	1	Dirty
Safety	5	4	3	2	1	Dangerous
Wide	5	4	3	2	1	Narrow

1.8 Flower plants/decoration plants

Neat	5	4	3	2	1	Scattered
Beautiful	5	4	3	2	1	Ugly
Safety	5	4	3	2	1	Dangerous
For study	5	4	3	2	1	Against study

1.9 Big trees

Many	5	4	3	2	1	Little
For study	5	4	3	2	1	Against study
Neat	5	4	3	2	1	Scattered

1.10 Used water drainage

Unflooded	5	4	3	2	1	Flooded
Clean	5	4	3	2	1	Dirty
Convenient	5	4	3	2	1	Troublesome

1.11 Rubbish discard

Convenient	5	4	3	2	1	Troublesome
Classified	5	4	3	2	1	Unclassified
Continual	5	4	3	2	1	Uncontinual

1.12 Bathrooms/toilets

Clean	5	4	3	2	1	Dirty
New	5	4	3	2	1	Old
Strong	5	4	3	2	1	Declined
Enough	5	4	3	2	1	Not enough

1.13 Canteen

Clean	5	4	3	2	1	Dirty
Convenient	5	4	3	2	1	Inconvenient
Strong	5	4	3	2	1	Declined
New	5	4	3	2	1	Old
Wide	5	4	3	2	1	Narrow
Safety	5	4	3	2	1	Dangerous

1.14 Playground

Enough	5	4	3	2	1	Not enough
Clean	5	4	3	2	1	Dirty
Safety	5	4	3	2	1	Dangerous
Wide	5	4	3	2	1	Narrow

1.15 Garbage Disposal

Convenient	5	4	3	2	1	Inconvenient
Stickles	5	4	3	2	1	Stinking
Classified	5	4	3	2	1	Unclassified
Clean	5	4	3	2	1	Dirty

1.16 Drinking Water

Enough	5	4	3	2	1	Not enough
Clean	5	4	3	2	1	Dirty
Safety	5	4	3	2	1	Dangerous
Orderlies	5	4	3	2	1	Bad order

1.17 Consuming Water

Enough	5	4	3	2	1	Not enough
Clean	5	4	3	2	1	Dirty
Safety	5	4	3	2	1	Dangerous

Writing form of Environmental Education Management Plan in School.

1. Principles and reasons
 - Performance of environmental education management in school.
 - Schools' burden of environmental education management.
 - Problems, needs and readiness of environmental education management.
2. Important factors
 - Authority's or schools' policy of environmental education management.
 - Environmental education curriculum.
 - Objectives of environmental education management plans in school'.
 - Targets
 - Guidelines and measurement for task performance.
3. Projects based on environmental education management plans
 - Principles and reasons
 - Objectives
 - Targets
 - Needed resources
 - Performing places
 - Activities / performing duration
 - Budget
 - Project evaluation

Writing form of Environmental Education Project in school

Project name

Plan

Significance order

Responsibility name.....

Performance duration

Project description () New () Continual

1. Principle and reason

.....

.....

.....

.....

2. Objectives

.....

.....

.....

.....

3. Target

.....

.....

.....

.....

4. Required resources

4.1 Personnel

.....

.....

.....

.....

4.2 Material

.....

.....

.....

.....

5. Performance place

.....

.....

.....

.....

6. Activities and performance duration

Duration Activity	Academic Year												
	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mon.	Apr.	

7. Budget

Total Budget baht. It includes the followings.

Activity I

Expense cost

.....

Hiring cost

.....

Material cost

.....

Activity II

Expense cost

.....

Hiring cost

.....

Material cost

.....

Activity III

.....

.....

.....

Total budget baht			
Expense cost	Hiring cost	Material cost	Others

8. Project evaluation

Success index	Index measuring method	Measurement tools

9. Expected result

.....
.....
.....
.....

10. Other details

.....
.....
.....
.....

**Writing form of Environmental Management
Performance Calendar in school
A year**

Duration	Environmental education activity	Supervisor

BIOGRAPHY

NAME	Miss Punyawee Arame
DATE OF BIRTH	2 February, 1971
PLACE OF BIRTH	Nakhonpathom, Thailand.
INSTITUTIONS ATTENDED	Kasetsart University, 1989-1992 Bachelor of Sciences (Agricultural) Mahidol University, 1998-2002 Master of Education (Environmental Education)
POSITION & OFFICE	1992-Present, Technology Nakhompathom
SCHOOL POSITION	Lecturer

